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ABSTRACTS

Free Communications

Free Communications 1_Case Reports

FC1_1

Laparoscopic management of benign adnexal disease: a retrospective study of two years

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Introduction: Laparoscopy is increasingly considered the gold standard in the management of adnexal masses. This approach has been progressively evaluated in new and uncommon indications. Nevertheless, benign ovarian tumors are still treated by laparotomy by many gynecologists.
Objective: To present our experience in laparoscopic surgery for benign adnexal disease for a period of two years (2008–2009). We evaluated menopausal status, past medical and surgical history, symptoms, ultrasound findings, tumor markers, operative findings, histological results and complications.
Results: We performed laparoscopic surgery in 23 patients with adnexal disease. The mean age was 45 years (range 18–74 years), 35% were postmenopausal and 17% had previous abdominal surgery. In most cases women were asymptomatic, but had sonographic finding of suspicious adnexal cyst (due to size, complexity and/or persistence). Tumor markers were within normal ranges in almost all cases. All cases were completed successfully, without conversion to laparotomy approach. The most frequent histological reports were serous cystadenoma and endometriosis.
Conclusion: This study shows that laparoscopy should be considered in initial approach to adnexal pathology, either for diagnostic or therapeutic aims. Further, in most cases, it avoids the invasive laparotomic approach. It seems to be a technique increasingly effective and safe, provided it is performed by experienced surgeons with appropriate tools.
Key-words: laparoscopy, benign adnexal disease.

FC1_2

Laparoscopic management of adnexal masses in adolescent girls: 5 years review

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Summary: Adnexal masses in adolescents are uncommon, representing diagnosis and management dilemma. We analyzed 5 years of laparoscopic managed adnexal masses in adolescent girls.
Introduction: About 6% of ovarian neoplasms are found in adolescents and less than 25% are malignant. The differential diagnosis is complex. Physicians should balance the risk of surgical intervention. Laparoscopic surgery should be considered the gold standard in managing adnexal masses.
Materials and Methods: We analyzed laparoscopic managed adnexal masses in adolescent girls, between 2005 and 2009. We retrospectively evaluated the clinical and imagiological presentation and histopathologic findings.
Results: Nineteen adolescent girls, mean age 16,4±2,1 years and mean diameter of the masses 59,6±19,9 mm were evaluated. Pelvic pain was present in 11 girls. Twelve patients had ambulatory surgery. There were no converting laparotomies and no complications. Histopathology revealed 9 cystic teratomas, 8 benign epithelial ovarian cysts, 1 endometrial cyst, 1 fibroadenoma and 2 ovarian malignant tumors (Leydig and Sertoli cells tumor). We found ultrasound/histopathologic

concordance in 16 cases. Postoperative ultrasound follow-up was performed in 12 cases with complete resolution in 11.
Discussion: Because most cases are benign, minimal access surgery should be the first choice.
Key-words: adnexal mass, ovarian cyst, adolescent.

FC1_3

Development of leiomyomas on the uterine remnants of a women with Rokitansky-Kuster-Hauser syndrome

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Summary: We describe a case of Rokitanski-Kuster-Hauser syndrome in a patient who presented with myoma in both rudimentary uteri on two separate occasions, two years apart.
Introduction: The incidence of Rokitanski-Kuster-Hauser syndrome is 1/4500. Features include vaginal aplasia (often total) and a absent uterus or an extremely rudimentary one. The ovaries and fallopian tubes are usually normal.
Materials and Methods: We present the case report of a 46 year old patient who was diagnosed with Rokitanski-Kuster-Hauser syndrome at the age of 20 years. Clinical findings included partial vaginal aplasia and a uterus consisting of 2 rudimentary horns. There were no other associated anomalies. In 2008 she presented with pelvic pain and dysparunia.
Investigations: Revealed a fibroid measuring 12 cm on the right uterine remnant. A laparoscopic myomectomy was performed and the histology report confirmed a leiomyoma associated with adenomyosis. In 2010 she complained of left sided pelvic pain and diagnostic laparoscopy revealed a further fibroid had developed on the opposite uterine horn. A second myomectomy was performed.
Discussion: To date, fewer than 5 case reports describing this rare complication of Rokitanski-Kuster-Hauser syndrome can be found in the medical literature.
Key- words: Rokitanski-Kuster-Hauser syndrome, leiomyomas, uterine remnant.

FC1_4

Unicornuate uterus with atypical hyperplasia in the non-communicating horn

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Summary: Hyperplasia without atypia usually is a self-limited lesion that will regress with less than 2% risk of progression to endometrial carcinoma. On the other hand, the incidence of endometrial carcinoma in patients previously diagnosed with atypical hyperplasia is between 9–28 % (according to Kurman et al., 1985). In patients with unicornuate uterus the possibilities of early detection and diagnosis of atypical hyperplasia or even endometrial carcinoma in a non-communicating horn are very limited.
Materials and Methods: We present a case of unicornuate uterus with atypical hyperplasia in the non-communicating horn, which was laparoscopically removed in a 50 years old patient with menometrorrhagia. The previously performed D & C revealed concomitant simple endometrial hyperplasia in the uterine cavity.
Discussion: We propose a discussion on whether all cases of non-communicating horns in unicornuate uteruses should be removed by laparoscopy, especially in women with dysfunctional uterine bleeding.
Key- words: unicornuate uterus with a non-communicating horn, atypical hyperplasia, laparoscopic removal of non-communicating horn.

FC1_5

Hysteroscopic operative system with rotary blade can be used for morcellation of a uterine septum

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Study Objective: If repeated miscarriage occurs in patients with large uterine septa, transsection or resection of the uterine septum can be considered as potential valuable. Resection of the septum using electro surgery which is the gold standard, is considered to be potentially dangerous due to the electric energy used. Either monopolar or bipolar high voltage current can cause lateral spread and possibly damage the endo- and/ or myometrium. Furthermore, transsection or incomplete resection of the septum can possibly damage the anterior as well as the posterior side of the uterine cavity and subsequently lead to adhesions.
Design: Case report of a patient using hysteroscopic morcelation of a uterine septum. Patients: 1 Patient demonstrating recurrent abortion and large uterine septum.
Setting: Outpatient department of a non academic teaching hospital.
Interventions: IUR procedure followed by second look hysteroscopy 6 weeks later.
Measurements and Results: A 34 year infertile patient (G4P0) consulting our clinic for complaints of intermittent menstrual bleeding and suspicion of uterine septum. Sonography demonstrated a large uterine septum towards the internal cervical os. Lower half of the septum demonstrated no doppler flow. Following counseling of the patient hysteroscopic morcelation of the part of the septum with low blood flow was proposed, the intervention was performed under regional anesthesia, and Trueclear™ (Smith &Nephew, Andover, USA) hysteroscopic operative system was used for the procedure.

The procedure time was 23 minutes. Isotonic fluid loss was 270 cc. Blood loss was measured 70 cc. The intervention was performed by first cutting the septum in the middle part, followed by resection of the anterior and the posterior ridge until the point that either the rim was completely resected or some blood loss was observed. This lead to resection of 70 percent of the septum. Control hysteroscopy revealed a uterine cavity containing a small septum.
Conclusions: Resection of a uterine septum is feasible using a hysteroscopic morcelator with a rotary blade. Resection using the morcelator is potentially less dangerous compared to electrosurgical removal.
Key-words: *u*terine septum, resection, hysteroscopic morcelator.

FC1_6

Immature rupture of membranes due to suboptimal Essure placement?

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Summary: A 34 year old woman with pregnancy after IVF following Essure placement presented with immature rupture of membranes. Post partum hysteroscopy showed several coils extending in the uterine cavity, possibly the causing previous rupture of membranes. We underline the importance of deep Essure placement before IVF.
Introduction: Hydrosalpynges are associated with reduction of success in IVF. Therefore, tubectomy or occlusion of salpynges is advised prior to IVF. Essure placement may be an alternative treatment in women with contraindications for laparoscopy. Successful pregnancies with IVF after Essure placement have been described.
Case report: A subfertile woman underwent Essure placement because of hydrosalpynges and frozen pelvis. She conceived in our clinic of a singleton pregnancy during her 7th IVF cycle. At 19 weeks gestation she presented with immature rupture of membranes. After 6 days, a stillbirth occurred. Hysteroscopy showed an encapsulated Essure device at the left tubal ostium, whereas at the right salpinx several coils extended in the uterine cavity. We hypothesized that extending coils possibly caused immature rupture of membranes.
Discussion: Several authors suggest to limit the number of coils remaining in the cavity to three. Theoretically, complete encapsulation of coils (25%) would be ideal. We hypothesize that rupture of membranes might be due to mechanical damage by extending coils. Initial results of IVF after Essure placement seem promising, however, still experimental. Essure placement could improve fertility rates, nevertheless we underline the importance of deep placement of devices and possibly a second-look hysteroscopy.
Key-words: Essure, in vitro fertilization, immature rupture of membranes.

FC1_7

Role of laparoscopy to evaluate complex Müllerian anomalies

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Summary: Complex müllerian anomalies are often associated with infertility or with poor foetal outcomes. They are often associated with other anomalies regarding mostly intestinal and urogenital tracts. Sometimes their diagnosis is difficult to be performed and, like in our patient, an important role is given from both laparoscopy and hysteroscopy.
Introduction: The incidence of congenital uterine anomalies in the general population is 0.001%–10%. Patients with such anomalies might have several complaints, including amenorrhea, dysmenorrhea, dyspareunia, 20–25 % of these patients have poor foetal outcomes and infertility. In normal müllerian development, there seems to be an orderly progression in the embryonic development of the uterus, fallopian tubes and vagina. A dysregulation of these processes results in congenital uterine anomalies. These anomalies can be due to a failure of fusion of the müllerian ducts or in the resorption of the septum, but the definitive cause of congenital müllerian anomalies has not been clearly elucidated. This case, the uterus didelphys is caused by the failure of müllerian duct fusion (two corpora, two cervices, sometimes vaginal septum). Isolated anomaly of cervix or vagina, agenesis or hypogenesis of fallopian tube or ovary is rare. Polygenic and familial factors, extra- or intrauterine radiation, infection, or teratogenic drug such as thalidomide and diethylstilbestrol contribute to defective development. These anomalies are associated with a higher incidence of other congenital anomaly than normal population including urinary tract, gastrointestinal tract, musculoskeletal system, heart, eye and ear. We report a case of an infertile women whom correct diagnosis of uterus didelphys was evaluated by both laparoscopy and hysteroscopy. In the United States, uterus didelphys is reported to occur in 0.1–0.5% of the population. It is difficult to know the exact occurrence of this anomaly, as it may go undetected in the absence of medical and reproductive complications. Women with the condition may be asymptomatic and unaware of having a double uterus. A pelvic examination can reveal a unique or double vagina and typically a double cervix. Investigations are usually prompted on the basis of such findings as well as when reproductive problems are encountered. Not all cases of uterus didelphys involve duplication of the cervix and vagina. Helpful techniques to investigate the uterine structure are transvaginal ultrasonography and sonohysterography, hysterosalpingography, MRI, and hysteroscopy. More

recently 3-D ultrasonography has been advocated as an excellent non-invasive method to evaluate uterine malformations. Uterus didelphys is often confused with a complete uterine septum. Often more than one method of investigation is necessary to accurately diagnose the condition. Correct diagnosis is crucial as treatment for these two conditions is very different. Whereas most doctors recommend removal of a uterine septum, they generally concur that it is better not to operate on a uterus didelphys.

Materials and Methods: A 23 years old nulligravida presented with primary infertility (two years history) and chronic pelvic pain to the Genesi Centre of Palermo (Italy). In particular, she had dysmenorrhea and dyspareunia. She was investigated about her history and she told about an operation after her birth of imperforate anus. Renal status was normal. Gynecological examination revealed a double cervix with a normal vagina without any septum. No urologic anomalies were noted. A transvaginal sonography was performed and it showed an imagine like a septate uterus because the transverse diameter of the uterus seemed to be divided into two parts. A MRI (magnetic resonance imaging) and a diagnostic hysteroscopy were planned. A recent review found that MRI correctly differentiated the type of müllerian anomaly in 96% of patients. In this women, MRI revealed cervical duplication, a smooth fundus but it was not clear if there was a complete uterine septum or a bicornuate uterus. So diagnostic hysteroscopy was performed and it confirmed the double cervix and both of them the uterine cavities appeared smaller than normal with probably a septate uterus. Both ostia were seen and normal. In a second time the patient underwent both laparoscopy and hysteroscopy to evaluate the genital anatomy, if there was a complete uterine septum or two completely separated cavities. The role of hysteroscopy should had been to remove the uterine septum if it was confirmed by laparoscopy help. Traditional transabdominal metroplasty was replaced by operative hysteroscopy in the surgical correction of a septate uterus. Therefore, the treatment should be empiric, individual, according to the symptoms of the patients. Laparoscopy identified a reduction of the visible pelvis because of the adhesions among the low intestinal tract, the abdominal wall and the right adnexial region. The right ovary was completely obliterated from adhesions with bowels. Left ovary was normal. The uterus was little and morphologically different from the normal with a duplication of the uterine body in the mid-upper part like a bicornuate uterus. During laparoscopy, hysteroscopy was undergone. Vaginoscopy revealed two cervixes and two normal endocervical canals it was shown before. Over the cervix it was possible to see two complete uterine cavities with a normal-appearing ostium in each side while in laparoscopy the two cavities were seen bigger and bigger as a complex mullerian anomaly, like uterine didelphys. Adhesiolisis was made by laparoscopy to ensure mobility and functionality of internal genital tract.

Results: For this women it was hypothized by the hysteroscopy an unusual Müllerian anomaly consisted in double cervix with septate uterus. Exact diagnosis was obtained with both laparoscopy and hysteroscopy which showed the uterine didelphys. The high pressure made by hysteroscopy to the hemicavities let the surgeon to see laparoscopically the form of the uterus, that was bicornuate. Together double cervix and bicornuate uterus is called uterine didelphys and it is known as the third class of the classification of the American Fertility Society.

Discussion: Müllerian anomalies constitute an interesting group of clinical problems for the gynaecologist. The aetiology of most uterine anomalies of the female genital tract is not known. They present challenge in terms of making diagnostic and therapeutic choices. Correct diagnosis is frequently missed, leading to suboptimal management. Ideally, the anomaly should be completely defined before the operation. Often, however, the extend of the anomaly can only be properly determined at surgery. Most uterine anomalies fall into the American Society for Reproductive Medicine classification system and are consistent with the theory of linear caudal-to-cephaled müllerian fusion. The role of laparoscopy is fundamental to the diagnosis of some of these anomalies, like what we described, expecially when MRI cannot identify the exact anomaly. This patient will be followed longitudinally so that it can be determined whether this anomaly affects fertility and so that the optimal treatment plans can be developed. The patient reported here is being managed conservatively (without any operation). Not all the müllerian anomalies must be treated, expecially in the case of uterine didelphys, which prognosis is good.

Key-words: complex Müllerian anomaly, laparoscopy, sterility.

FC1_8

Case report: pelvic congestion syndrome—successful treatment of a nulliparious patient by ovarian vein embolization

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Introduction: Pelvic congestion was first described in 1857 and although we could find several reports of treatment in parous patients, we were able to find only one case report in the literature of treatment in a symptomatic nulliparious patient. We present a case of a symptomatic nulliparous

patient diagnosed with pelvic congestion syndrome and how this was successfully managed by ovarian vein embolization. We highlight that this diagnosis cannot be excluded on the basis of parity.
Materials and Methods: A 19-year-old nulliparious lady presented with a three year history of pelvic pain, dysmenorrhoea, dysparunia and menorrhagia. Initial medical treatment with oral contraceptive pill and non-steroidal anti-inflammatory drugs did not provide any significant improvement. A diagnostic laparoscopy found normal uterus, fallopian tubes and ovaries. Of note there was significant uterine and ovarian vessel varicosities in the pelvis. She was referred to an interventional radiologist for Magnetic Resonance Pelvic angiogram. The findings were keeping with the diagnosis of pelvic congestion as the contributory factor for the pelvic pain. She was then referred for ovarian vein embolization
Results: The patient had ovarian vein embolization without any complications. She experienced rapid resolution of her symptoms. Six months post procedure the patient reports that she is completely relieved of chronic pelvic pain.
Discussion: Pelvic congestion syndrome should not be dismissed as a differential diagnosis in those presenting with chronic pelvic pain, especially on the basis of parity. We have shown that by listening to the patient and fully investigating the patient a positive outcome can be achieved for both patient and clinician.
Key-words: pelvic congestion syndrome, nulliparous, ovarian vein embolization.

FC1_9

A case report of caesarean scar ectopic pregnancy
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Summary: Caesarean scar ectopic remains a challenging management problem. To reach a consensus regarding the standard treatment of this rare clinical entity, it is important that these cases are reported and assessed continually .We report a case of caesarean section (CS) scar ectopic treated by laparoscopic removal following systemic methotrexate (MTX).
Introduction: A caesarean scar is a rare site for ectopic implantation. However, with the increasing CS rate we would expect to see this more frequently. Various forms of management are reported in the literature, including systemic MTX, local MTX into the gestational sac, mifepristone and misoprostol, hysteroscopic removal, hysterotomy and laparoscopic removal of ectopic. None of these treatments have a proven advantage over each other.
Case Report: A 27 year old multipara with two previous CS presented at 6 weeks gestation with lower abdominal pain and vaginal bleeding. Ultrasound scan (USS) showed a 6 weeks size fetus with cardiac pulsations in the CS scar area. The myometrial thickness anterior to the sac was noted to be 3 mm. Management options were discussed. Patient was informed about the risk of heavy bleeding requiring hysterectomy, associated with surgical management. She opted for systemic MTX. Repeat USS on day 7 following MTX, showed persistence of fetal heart. A 2nd dose of MTX was given. Subsequent scan showed a non viable pregnancy. Her BHCG dropped from 17000 to 13 over a 6 weeks period. Patient remained asymptomatic throughout this period. A repeat USS showed persistence of gestational sac. She began to menstruate within this time and was given contraception. However, patient decided to have surgical treatment. A laparoscopic removal of ectopic was carried out with minimal blood loss and the patient was discharged next day.
Key-words: caesarean scar ectopic pregnancy, ectopic pregnancy.

FC1_10

Treatment of Asherman’s syndrome and infertility—never give up!
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Summary: This is a case of a 30 years old secondary infertile diabetic woman. She had a previous caesarean section for a breech presented foetus at 29 weeks of pregnancy ending with a perinatal loss of the newborn. She developed Asherman's syndrome. Finally after five hysteroscopic adhesiolysis and six IVF-ET she had a successful pregnancy. The management of severe intrauterine adhesions and infertility still poses a challenge. For secondary infertility this patient had a hysteroscopy and laparoscopy. An ovarian cyst was removed and Asherman’s syndrome was diagnostized. A specimen was taken for histological examination. The result came back as a piece of unsecretory endomerium. One year later a second, a third and a fourth hysteroscopy was performed under laparoscopic guidance. At each hysteroscopy adhesiolysis was performed. During the next two years the patient had two IVF-ET treatments transferring two embryos at each time without success. Than during a HyCoSy (Hysterosalpingo Contrast Sonography) intrauterine adhesions were found. After this point the patient was referred to our department for hysteroscopy (the fifth one!). During this procedure a 25

by 30 mm uterine cavity was formed using a knife electrode of a standard resectoscope without any laparoscopic or ultrasound guidance. Than she had a fourth and fifth unsuccessful IVF-ET treatment during which she produced a low respond. Finally, in 2009—seven years after her first attendance in an infertility clinic—she had her sixth IVF-ET treatment. Her diabetes was under control, GnRH antagonist protocol was used. A functional receptive endometrium was achieved. Four oocytes were retrieved and an eight-cell pre-embryo was transferred under ultrasound control. She developed a pregnancy and delivered a healthy baby boy, 1650 g, 40 cm at 30 weeks of pregnancy by CS. Since than the baby has been growing well.

Key-words: Asherman's syndrome, hysteroscopic surgery, IVF-ET.

Free Communications 2_Complications

FC2_1

Incidence and management of symptomatic pelvic lymphocyst after radical pelvic or pelvic and paraaortic lymphadenectomy

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Introduction: Pelvic and paraaortal lymph node dissection as part of the staging surgery for cervical and endometrial carcinoma interrupts the afferent lymphatics. The higher acceptance by the community of gynecologic oncologists, shown that laparoscopic lymphadenectomy can be performed in the majority of patients and is associated with a low complication rate. The aim of this retrospective study was the evaluation of the morbidity such as lymphocyst, lymphodema and severe complications associated with lymphocele and specially the management of the lymphocyst after radical lymphadenectomy (LNE). Incidence of lymphocele and severe complications associated with lymphocele, such as infection, deep venous thrombosis or urinary tract occlusion, were retrospectively evaluated in the last 7 years (01.2001–01.2007) after surgery.

Patients and Methods: From January 2001 to January 2007, 226 women who underwent surgery including pelvic or pelvic and paraaortic lymphadenectomy for primary gynecologic pelvic malignancies including 68 (30%) patients with cervical cancer and 158 (60%) patients with endometrial cancer were retrospective analysed. Patients with symptoms such as pain in the pelvic area, lymphedema or suspicions cyst in the pelvic were send to our clinic for further examinatios. The identification was initially made by palpation, and confirmed by US or CT. Any cystic formation larger than 5 cm in the pelvic or paraaortic lymph node area was considered to be lymphocyst.

Results: 23 out of 226 (10.2%) patients were diagnosed to have symptomatic pelvic lymphocyst. Additional, two of 23 patients have lympedema, two of 23 patients have lymphocystinfection, one of 23 patient have deep venous thrombosis caused by a 20 cm big lymphocyst and one of 23 patient have ureter stenosis coused by a 20 cm big lymphocyst. A partial-(ventral)-resection of the lymphocyst was performed, the iliacal vessels were dissected and the ureter was visualised. Median duration of the hospital stay was 12.5 days and median duration of the drainage was 10 days (less than 100 ml lymphatics). Laparoscopic lymphocyst resection and drainage was in 22 patients successful. In 1 patient a re-laparoscopy was necessary because of a recurrent lymphocyst 6 moths after the operation.

Conclusions: The cause of the lymphocyst or lymphocyst associated complications seems to be the retroperitoneal drainage left in situ, same studies suggest that but based on our results we can not prove it. The pelvic peritoneum and the peritoneum along the pelvic were left open with a drainage to reduce the incidence of lymphocyst formation. The presence of foreign bodies on the peritoneal surfaces seems to be the reason to build the lymphocyst. Further randomized studies are necessary to prove it.

Key-words: lymphocyst, laparoscopy, pelvic lymphadenectomy.

FC2_2

Bilateral internal iliac artery ligation. Series of 51 cases

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Introduction: In spite of progress in pharmacology hemorrhage is the commonest case of mortality in ob/gyn. Hysterectomy is the easiest way to stop hemorrhage. IAL may help to avoid hysterectomy in young patients.

Materials and Methods: We analyzed 51 case of bilateral IAL. We use classical abdominal approach 2 cm below bifurcation. Indications: 5—detachment of placenta and uterine atony, 8—DIC after postpartum hysterectomy. In gynecologic patients 7 patients—hemorrhage in case of cervical cancer, with subsequent hysterectomy (4) and radiotherapy. 3 cases of cervical pregnancy less 8 weeks (laparoscopic IAL, curettage, Folly catheter placement). In 14 cases IAL performed before hysterectomy in elective oncology surgery and big fibroids. In 14 cases myomectomy was performed.

Results: All obstetrical hemorrhages was severe and bleeding stopped soon after IAL, but all patients required long stay in ICU; all patients survived. In cases of cervical

pregnancy no hysterectomy performed, all 3 patients subsequently got pregnant. After myomectomy all 14 patients have normal menstrual function, moreover 9 of them delivered by CS with no complication.
Discussion: Effect of IAL due to lowering pressure of pelvic vessels by 50% (Burchell), that more amenable for clot formation. Exposure could be difficult due to Phannensteil incision, big uterus, reoperation after hysterectomy and retroperitoneal hematomas. This operation must be obligatory in for all obstetricians and gynecologists.
Key-words: hemorrhage, hypogastric, ligation.

FC2_3

Complications from pregnancy after endometrial ablation: management and prevention using Essure tubal sterilization

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Summary: Counseling about contraceptive options at the time of endometrial ablation is paramount and a concomitant sterilization should be proposed to all women undergoing this procedure.
Introduction: The aim of the current study was to report unusual cases of complication from pregnancy after endometrial ablation and to evaluate the safety and the efficacy of concomitant tubal sterilization during endometrial ablation procedure.
Materials and Methods: 4 cases of complications from pregnancy that occurred after endometrial ablation procedure and a continuous series of 54 women who have undergone concomitant hysteroscopic ESSURE tubal sterilization during endometrial ablation.
Results: Among the 4 cases, a 50-year-old woman was referred with heavy vaginal bleeding, 9 months after endometrial ablation. The patient was hemodynamically unstable and an emergency hysterectomy was performed. Pathology revealed hydatiform mole. These cases demonstrate the consequences of inadequate contraceptive counseling following endometrial ablation, especially in women over age 45. We also report a continuous series of 54 women who have undergone concomitant ESSURE sterilization during endometrial ablation. Fallopian tubes have be successfully cannulated bilaterally in 79% of cases (43/54). Patients returned 3 months after the procedure for abdominal X-ray and 3D ultrasound to document ESSURE placement.
Conclusions: Pregnancy after endometrial ablation is rare but is associated with a high morbidity. Counseling about contraceptive options at the time of endometrial ablation is paramount and a concomitant sterilization should be proposed to all women undergoing this procedure, including women over 45 years old.
Key-words: Essure, endometrial ablation, tubal sterilization.

FC2_4

Voiding dysfunction after laparoscopic surgery for deep infiltrating endometriosis

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Study Objective: To evaluate the prevalence of complete urinary retentions following laparoscopic surgery for moderate and severe endometriosis. To report on the clinical outcome of these patients, correlation with histopathology findings and to discuss potential intraoperative risk factors.
Design: Retrospective analysis of 121 consecutive cases of endometriosis surgery.
Setting: Strasbourg University Hospitals and IRCAD/EITS
Patients or Participants: One hundred twenty one patients (mean age 30.4 yrs) who underwent laparoscopic surgery for moderate to severe pelvic endome-triosis in 2007 and 2008, and presented postoperative urinary retention were eligible for this study.
Intervention: In most cases a deep infiltrating endometriosis including bowel, bladder or ureteral infiltration was present. In addition, 31 patients were diagnosed with uni- or bilateral uterosacral ligament involvement. Whenever possible, a complete resection of endometriotic nodules was performed including bowel or bladder wall resection, partial excision, or mucosal skinning.
Measurements and Main Results: We evaluated the prevalence of postoperative voiding dysfunction after this kind of surgery. Pre- and post-operative pain scores were assessed using visual analogous scale. Postoperative follow-up data including and histopathology findings are presented. Results are still ongoing.
Conclusions: The preliminary data analysis revealed a considerable rate of postoperative urinary retentions after radical laparoscopic surgery for pelvic endometriosis. Interestingly, unilateral resection of uterosacral ligament nodules does not preclude the postoperative occurrence of voiding dysfunction. We discuss potential operative strategies for the prevention of long-term sequelae in these predominantly young women.
Key-words: urinary retention, endometriosis surgery, autonomic nerves.

FC2_5

Complications and unwanted effects with the hysteroscopic (Essure®) or laparoscopic (Filshie®) tubal sterilisation

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Summary: The hysteroscopic Essure® System in ambulatory settings had less complications and unwanted effects than laparocopic Filshie. These better outcomes increase the convenience of the patients as well as decrease costs.

Introduction: For better assessment and patient counselling we need more information about the sterilisation methods. The objective of this study was to evaluate the complications and unwanted effects of hysteroscopic office Essure® System and laparoscopic Filshie clips®.

Materials and Methods: A retrospective cohort study including all sterilisations in Hyvinkää Hospital between 2006-2007 (n=224). Data on side-effects were obtained from the questionnaires and data on complications from the medical records and the questionnaires.

Results: Essure coils were successfully placed in 103 of 120 women (86%). All 104 laparoscopic sterilisations were completed on the first attempt. There were significantly more postoperative abdominal pain (same day (p=0.03), during the first week (p=<0.001)), shoulder pain (p=0.000), vertigo (p= 0.005), headache (P=0.05) and infections (0.04) in Filshie group than in Essure group. More women in Filshie group reported menstrual bleeding problems (p=0.03). 11 women (12 visits) with Essure and 20 women (36 visits) with Filshie had outpatient visits because of complications. In Filshie group there were one laparatomy after one day because of bleeding and haematoma and 4 inpatients days because of pain.

Discussion: Many women prefer laparoscopic sterilisation in general anesthesia because of the fear of pain. However, more information should be given about the postoperative pain. More attention should also be payed on the need of postoperative visits which load the health care system.

Key-words: complications, Essure sterilisation, Filshie sterilisation.

FC2_6

Vaginal cuff dehiscence after TLH: a comparison between suturing techniques

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Introduction: Occurrence of vaginal cuff dehiscence (VCD) after hysterectomy is a serious but rarely reported complication. Comparing the three routes of hysterectomy, total laparoscopic hysterectomy (TLH) tends to show the highest rate of VCD. Besides electrosurgical colpotomy and class of suture material, suturing techniques might very well predispose VCD. Objective of this study is to compare different suturing techniques in a large cohort of TLHs for VCD.

Materials and Methods: Prospective observational analysis of TLHs in two teaching hospitals using identical colpotomy and suturing techniques. Applied suturing techniques were divided in interrupted and running techniques and subdivided in intracorporeal multifilament interrupted sutures, multifilament running sutures restrained using clips, monofilament barbed running sutures and vaginal interrupted suturing.

Results: Five VCDs occurred in 245 consecutive TLHs (2%). Most of our cases occurred relatively early after surgery (mean 3 ½ weeks, range 14–66 days) and happened spontaneously (4 out of 5). Using interrupted sutures instead of running sutures caused a non significant Relative Risk of 2.2 (95%-CI 0.26 to 19.75) for VCD. No significant differences between sub-techniques were found.

Discussion: Running sutures are at least as safe as interrupted sutures used for vaginal cuff closure in TLH. The latter technique shows a non significant tendency for VCD. A possible explanation to this phenomenon might be a suboptimal distribution of tissue tension in interrupted sutures. In conclusion, next to the time saving advantage of knotless suturing, running sutures could possibly diminish VCD rates.

Key-words: TLH, vaginal cuff dehiscence, suturing techniques.

FC2_7

Vascular injuries in laparoscopy

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Summary: Vascular injuries in laparoscopic surgery are possibly the most serious and definitely the most common injuries. We present data of the complications, videos of intraoperative vascular injuries, and valuable tips that a surgeon must follow in case of a major or minor vascular injury during a laparoscopic procedure.

Introduction: Vascular injuries have an incidence about 0,13 /1000. Mortality rate that can be as high as 12%. The major vascular complications in laparoscopic surgery occur during the set up phase of laparoscopy (76%) with the insertion of the Verres needle and also with the insertion as well as the removal of trocars.

Materials and Methods: We present an algorithm of the necessary steps a surgeon has to follow in case of vascular injury according to our experience. Different rules and techniques exist in the case of venous than in the case of arterial laceration and of course depending on the size of

the vessel if it is more than 5 mm, or less. Special surgical instruments should be present to stop bleeding in case of injury and laparoscopic suturing sometimes is absolutely indicated. Prevention of these accidents relies on the surgeon's experience and respect of the safety rules. We believe that even if vascular injuries are not in the gynecologist's surgical field, gynecologist has to follow some steps and to give an appropriate solution. We present videos of cases of vascular injuries during laparoscopic procedures and according to the theoretical knowledge we present the solution that we had to give in the surgical field.
Results: The results of an appropriate and systematic approach for vascular injuries are less intraoperative and postoperative complications, less blood loss, avoidance of unnecessary laparotomies and of course less life threating complications in case of major vessel injury.
Discussion: Is crucial to recognize vascular trauma as early as possible. In locations like the retroperitoneal space it is sometimes difficult to recognize injury so a great attention should be given to possible retroperitoneal hemorrhages. They are some key steps that the surgeon has to follow in case of vascular bleeding.
Key-words: complications, vascular injuries, repair.

FC2_8

A multicentre review of operative gynaecological laparoscopy and associated complications in Northern Ireland: 347 cases

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Introduction: A retrospective analysis was carried out of the recent uptake of operative laparoscopic surgery in three centres in Northern Ireland over a 2 year period (1/1/2008—31/12/2099, its associated morbidity and management.
Materials and Methods: Operations were performed by 3 internationally trained minimal access surgeons. 347 procedures were carried out; 109 laparoscopic hysterectomies, (14 radical), 151 adnexal procedures, 16 pelvic floor repairs, 41 laparoscopic excision endometriosis, 30 significant adhesiolysis. Complications and management of these were recorded.
Results: Major complications in terms of visceral, ureteric and vessel injury occurred in 0.9% (3/347), all recognised intraoperatively; 1 serosal bowel injury, 1 diathermy ureteric injury, and 1 inferior epigastric injury. A multidisciplinary input was sought in the bowel and ureteric injury. The bowel injury was sutured laparoscopically and ureteric injury was stented. Laparotomy conversion rate was 1.2 % (4/347), indications being dense adhesions and large myomatous uteri. Minor complications rate was 4.9%, (17/347); 5 transfusions, 2 port site hernias, 2 post operative pyrexia, 2 UTI's, 4 haematomas and 2 urinary retentions.
Discussion: Operative gynaecological laparoscopy is now well established in Northern Ireland and with trained surgeons is performed with very low complication rates.
Key-words: operative laparoscopy, complications, training.

FC2_9

Analyses of complications in gynaecologic laparoscopic surgery

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Introduction: Minimally invasive surgery was quickly implemented in various surgical operations because of evidence for the associated reduction in morbidity. The main advantages of laparoscopic surgery over laparotomy include lesser surgical trauma, better cosmetic effect, rapid post operative recovery and return to a normal lifestyle. Laparoscopy continues to evolve with newer and more complex instruments and energy sources in order to facilitate the work of the surgeon and increase the success of interventions but also to reduce the operative time, and the complication rate.
Objectives and Methods: We made a retrospective study of all laparoscopic procedures in the Erasme Hospital for the period from January 2007 to June 2009. We collected the indications, the description of the surgery, the eventual complications observed and the treatment applied. All the operations were divided in four categories according to the classifications of Chapron and Querleu.
Results: In this series of 719 cases of laparoscopic interventions we found a complication rate of 1.53%. The extension of the surgery can be described as: diagnostic laparoscopy (p=17,8%, n=128), minor laparoscopic surgery (p=12,7%, n=92), major laparoscopic surgery (p=44,6%, n=321) and advanced laparoscopic surgery (p=24,5, n=176). Large and extended operating laparoscopy (III and IV group) represented vast majority of operations (69,1%), while diagnostic and minor surgical operations 30,9%. No deaths occurred in our clinic. These complications included febrile morbidity (2 cases), bowel injury (1), bladder injury (1), delayed postoperative vaginal cuff bleedings (1), bladder dysfunction (2), unanticipated blood transfusion (1), lymphocele (1), epigastric artery vessels injury (1), and pelvic abscess (1). There were not funded complication in the diagnostic and the minor laparoscopic procedures. All the complications were described during the major laparoscopic procedures (7 cases) and in the advanced one (4 cases). The conversions to mini-laparotomy for the extractions of histological specimens were observed in three cases, and because of the adhesions in six

cases. The surgically correctable complications were treated by laparotomy in two cases, and laparoscopically in three cases. Most of the procedures, especially major and advanced were performed by an experienced surgeon.

Discussion: The risk of complications though very low in our series was related to the complexity of the laparoscopic procedures. Conversions to laparotomy (9 cases), decided like a right approach, because of difficulties during the operation, without any accident occurring were not counted as complications. Major and advanced laparoscopic procedures when performed by an experienced gynecologist are associated with a very low complication risk.

Free Communications 3_Endometriosis: Diagnosis

FC3_1

Evaluation of the impact of endometriotic lesions on patient's pelvic pain symptoms

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Purpose: To verify if different endometrial lesions could determine a specific symptom's panel.

Materials and Methods: we recruited 537 women with endometriosis underwent laparoscopic surgery. Data on patient's characteristics, severity of pelvic pain symptoms, disease stage and anatomical characteristics of endometriotic lesions were collected and analysed by univariate system and than by a multiple logistic regression.

Results: We observed a strong inverse relationship between pain symptoms and, respectively, the age of women at surgery (OR 0.885; $p<0.05$) and nulliparity (OR 5.6; $p<0.05$). It was also confirmed the significative association between dysmenorrhoea and nulliparity (OR 10.1; $p<0.01$)) and dysmenorrhoea and RAFS stage (OR 4.7; $p<0.05$). Finally a strong relationship was found between the presence of a rectovaginal endometriotic nodule and pain symptoms: dyspareunia (OR 13.8, $p<0.001$) and dysmenorrhoea (OR 2.3, $p<0.05$). Significative relationships were found between the presence of peri-annexial adherences and, respectively, bilateral endometrioma ($p<0.01$) and size of endometrioma ($p<0.05$); between the presence of pelvic adherential syndrome and, respectively, bilateral ovarian cyst ($p<0.01$), size of ovarian cyst ($p<0.01$) and recto-vaginal nodule ($p<0.01$). A strong relationship was found also between the rectovaginal nodule and the presence of entero-uterine adherences ($p<0.01$) and Douglas obliteration ($p<0.01$).

Conclusions: It was not possible determine a precise relationship between a specific pain symptom and the anatomic-surgical characteristics of endometriotic lesions, even though strong association was seen between rectovaginal endometriotic nodule and deep dyspareunia. Typical clinical features of endometriosis are probably determined by the association of different characteristics of lesions and different pathogenic mechanisms.

Key-words: dysmenorrhoea, dyspareunia, chronic pelvic pain.

FC3_2

Serum osteopontin levels as biomarkers for prediction of severe endometriosis

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Objective: OPN has been reported as serum tumor markers in ovarian carcinoma. It has also been reported to be related to the pathogenesis of endometriosis. This study was performed to analyze human serum level of OPN for prediction of severe endometriosis.

Study Design: After Ethics Committee approval and informed consent, blood samples were collected and stored preoperatively. OPN serum level was measured by ELISA method. From April 2002 to March 2009, 57 cases of endometriosis (27 cases of I-II stage, 30 cases of III-IV stage), 7 cases of ovarian clear cell carcinoma with endometriosis, 11 cases of ovarian clear cell carcinoma were selected. As a control group, 37 cases of cervical dysplasia whose have no menstrual pain were selected.

Result: Pre operative serum OPN level was significant higher in stage III-IV endometriosis (44.3 ± 13.5 ng/ml) than stageI-II (44.3 ± 13.5 ng/ml) ($p<0.05$). In ovarian clear cell carcinoma, the level of serum OPN was higher (237.4 ± 387.6 ng/ml) than clear cell carcinoma with endometriosis (94.7 ± 43.9 ng/ml) ($p<0.01$) (by Mann-Whitney U-test). Although 5 year age comparison was conducted, correlation was not examined in various age groups.

Conclusion: In the future, serum OPN might be a useful biomarker for prediction of severe endometriosis as well as facilitate in ovarian carcinoma.

Key-words: osteopontin, endometriosis, ovarian carcinoma.

FC3_3

Chronic pelvic pain: is routine peritoneal biopsy worthwhile?

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Study Objective: The diagnosis of endometriosis maybe missed in women with endometriosis and apparently

normal pelvis. We aimed to assess the value of peritoneal biopsy in women with chronic pelvic pain, compare laparoscopic findings with histological examination of the tissue and its relation to chronicity of symptoms.
Design: Case series observational study of 42 consecutive cases with chronic pelvic pain for >6 months.
Subjects: Patients, aged 23–48 yrs, were investigated for non-cyclical chronic pelvic pain of >6 months. They were divided into three groups according to duration of symptoms, <1, 1–2 and >2 yrs (no=13, 11 and 18, respectively).
Interventions: Systemic laparoscopic evaluation of pelvic peritoneum. Peritoneal biopsies (2–4) were taken from the uterosacral ligaments, Pouch-of-Douglas ± ovarian fossae of visually normal or suspicious lesions. Biopsies were assessed by two experienced gynaecological pathologists. Endometriosis was strictly diagnosed by presence of endometrial glands and stroma.
Measurements and Results: Subjects' mean age was 33.7± 0.9 yrs. There was no correlation between macroscopic appearance and microscopic diagnosis of endometriosis. Endometriosis was histologically confirmed in 32% (12/38) and 25% (1/4) of patients with macroscopically suspicious and normal peritoneum, respectively. However, endometriosis was more likely to be detected and confirmed the higher the number of biopsies taken (3.8 vs. 2.7, P<0.0003). Further, confirmed endometriosis was significantly more prevalent (Chi-square, P<0.05) the longer the duration of chronic pelvic pain (8%, 36% and 44% in <1, 1–2 and >2 yrs groups, respectively).
Conclusion: The high rate of negative biopsies emphasises the need for biopsying suspected peritoneal lesions to confirm the diagnosis as well as from normal peritoneum in symptomatic women. Endometriosis is a progressive disease, thus, microscopic confirmation of atypical lesions is particularly important in patients with long-standing pelvic pain. We suggest taking several (≥4) biopsies from normal- and suspicious-looking peritoneum to maximise the possibility of positive diagnosis.
Key-words: endometriosis, chronic pelvic pain, peritoneal biopsy

FC3_4

Evaluation of 18FDG PET—CT in the diagnosis of endometriosis. A prospective study

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Background: Non invasive techniques have poor sensitivity and specificity in diagnosing endometriosis, which is often associated with an inflammatory process. In several benign diseases, measurement of hyper metabolism using 18FDG reflects the degree of inflammation and aggressiveness of the disease. This prospective study evaluated the value of 18FDG PET—CT assessing the presence of endometriosis.
Materials and Methods: Ten consecutive patients suspected with endometriosis were prospectively included in this study. They all had a preoperative 18FDG PET—CT in the follicular phase of their cycle and were operated by laparoscopy. Surgical endometriosis staging and histopathological analysis of removed tissue were confronted with the 18FDG PET—CT results.
Results: Nine out of ten patients had endometriosis confirmed by laparoscopy, six had advanced stage of the disease, and five had histologically proven lesions. Nevertheless, none of the patients had 18FDG—demonstrated hyper metabolism at PET—CT.
Conclusions: In this preliminary series, we did not observe hyper metabolic activity in relation to endometriosis using 18FDG PET—CT. This study's most important limitation is the use of 18FDG as isotopic tracer, which is not specific to endometrial tissue.
Key-words: endometriosis, laparoscopy, PET.

FC3_5

Computed tomography scanner and virtual colonoscopy in the preoperative assessment of colorectal endometriosis

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Objective: Evaluation of the usefulness of preoperative assessment of colorectal endometriosis by computed tomography scanner and virtual colonoscopy (CTSVC).
Materials and Methods: Prospective study including consecutive women managed during 8 months (September 2009–April 2010) for deep infiltrating endometriosis, with clinical, MRI and endorectal ultrasound data suggesting the colorectal involvement. CTSVC has been performed by intrarectal insufflation of air and concomitant intravenous contrast bolus, followed by 3-dimensional reconstruction allowing the visualization of the colorectal lumen. Data provided by CTSVC were compared to intraoperative findings and information obtained by other imaging techniques.
Results: Twenty eight patients have benefited for CTSVC and then underwent surgical management for deep infiltrating endometriosis (7 colorectal resections, 15 shavings, 2 full thickness excisions and no digestive procedure in 3 cases). The number of patients presenting respectively with an infiltration of the rectum, of the sigmoid colon, of both of them and with no digestive involvement was 13, 7, 7 and 1. The CTSVC correctly identified the number and the localization of digestive nodules in 26 cases out of 27

(sensitivity 96%). One digestive lesion has been identified in endorectal ultrasound but not in CTSVC, and it has been represented by a 3 cm diameter infiltration of the sigmoid colon wall, without any associated stenosis. Intraoperative exploration did not find colorectal infiltration in one woman with an extrinsic compression of the rectal wall by a lateral ovarian endometrioma.

Conclusions: The CTSVC provide accurate information about colorectal nodule localisation and their consequences on the digestive lumen diameter. In our opinion, this information is helpful to identify women who could reasonably managed by rectal nodule shaving or full thickness excision.

Key-words: virtual colonoscopy, colorectal endometriosis, computed tomography scanner.

Free Communications 4_Endometriosis: Surgery

FC4_1

Endoscopic treatment of adenomyosis

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Summary: The purpose of research was development optimum surgical correction of adenomyosis.

Methods of research: Since 2005 to January 2010 86 patients with adenomyosis have been surveyed. At 63 patients there was diffuse adenomyosys, at 10—the central form, at 13—a combination central and diffuse forms. The age of patients has made from 28 till 48 years (middle age 36±2,1 year). The sizes of a uterus made from 5 till 10 weeks of pregnancy (on the average 7,2±1,1 weeks). The diagnosis of adenomyosis was established on the basis of complaints of patients, a clinical picture and has been confirmed by data of transvaginal ultrasonography and hysteroscopy. The laparoscopy has been made to 39 patient, hysteroscopy—47. During operation by means of Ho-YAG laser it was formed from 10 up to 20 channels on forward, back walls and fundus of uterus and the irradiation by the laser from each channel within 30–60 seconds was spent.

Results: Duration of operation depending on access has made 33±2 and 14±2 minutes at a laparoscopy and hysteroscopy accordingly. There were no complications during operation. Blood loss during operation did not exceed 20 ml. No postoperative complications were noted. In the postoperative period of all patients received within 3–4 months analogues GnRH. The period of supervision over patients has made from 6 till 48 months. At all operated patients, irrespective of presence or absence hormonal therapy, the painful syndrome, a profuseness and duration of menses has essentially decreased. At dynamic supervision according to ultrasonic research reduction of the general sizes of a uterus and the sizes of units of adenomyosis, reduction a degree of expressiveness of changes in uterus walls was marked. During the period of supervision of any patient radical surgical treatment was not required.

Conclusions: Obtained data testify to efficiency of drilling uterus by Ho-YAG laser during laparoscopy and hysteroscopy. Thus, the offered way of treatment of adenomyosis can serve as alternative to long hormonal therapy, especially at presence of contra-indications, and to radical surgical treatment, it is minimally damaging, easily transferable and allows keeping to the woman reproductive and menses functions.

Key-words: adenomyosis, laparoscopy, uterus.

FC4_2

Surgical and fertility outcomes in women undergoing laparoscopic excision of deep infiltrating pelvic endometriosis

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Introduction: The evidence suggests that complete laparoscopic excision of endometriosis offers a good long-term symptomatic relief. Whether resection of rectovaginal endometriosis improves fertility is still under debate.

Objective: The aim of the study is to evaluate type of surgery, complications, recurrences and pregnancy rates after laparoscopic resection of deep endometriosis.

Materials and Methods: Prospective cohort study.Women who underwent fertility-sparing laparoscopic excision of deep pelvic endometriosis January 2007 to March 2010.

Results: 45 patients.

Procedures: 29 rectovaginal nodules, 3 block resection colorectal and vagina, 7 colorectal resection, 10 involves vaginal mucosa, 4 rectal shave, no disc resection, 3 ileon resection and 2 appendicectomys, 12 uterosacral ligaments, 3 nodules in anterior compartment, 1 parcial cystectomy, 1 adenomyosis focal exeresis, 9 patients had gestacional immediately desire. Mean period of infertility of 18 moths. 44% achieved pregnancy spontaneously. Mean time to conception of 9.8 m. 3 patients were directy referred to fiv (tubal , male factor and PGD) 2 pregnancys Rectovaginal nodule was a solitary

lesion in 22% patiens, concomitant ovarian endometriosis was present in 66% Significant improvement of pain (VAS scale) at median follow-up of 20 months after surgery was achieved. 1 recurrence and 1persistence of pain. 1laparoconversion, mayor complication 1 recto-vaginal fistula.
Conclusion: Complete excision of endometriosis offers long term pain relief in most patients and results in a low rate of persistent/recurrent disease or complication rate In patients trying to conceive resection of recto vaginal endometriosis resulted in a relief of pain and resulted in a spontaneous pregnancy of 44% .
Key-words: deep endometriosis, laparoscopy, fertility.

FC4_3

Our surgical strategy for the treatment of endometriosis and our results

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Study Objective: To assess the improvement of the patient's symptoms, surgical time and complications of our surgical strategy for the treatment of deep endometriosis.
Design: Retrospective analysis of 116 procedures.
Patients: 116 patients with deep endometriosis which were symptomatic and/or infertile.
Interventions: Laparoscopic treatment of patients with deep endometriosis.
Main Results: The mean age of the patients was 32 years-old and 51,7% were infertile women. In terms of symptoms 85,3% had dysmenorrhea (mean score=7), 69% had dyspareunia, 42,2% had pelvic chronic pain, 37,1% had digestive complains (diarrhea, constipation, rectorrhagia or dyschezia) and 31% had urinary complains (dysuria, haematuria, symptoms of pyelonephritis or renal colic). We performed sigmoid surgery because of endometriosis in 23 cases (19,8%), small bowel surgery in 4 (3,4%) cases, bladder surgery in 11 cases, ureter surgery in 60 (51,7%) cases, excision of endometriotic lesions in the cul-de-sac in 78 (67,2%) cases and in the uterosacral ligament in 50 (43,1%) cases and ovary surgery in 55 (47,4%) cases. The mean time of surgery was 137 minutes (60–300 min). We had 3 cases of intra-operative complications: 1 case of bowel injury, 1 of bladder injury and 1 of right ureter injury. In the pos-operative evaluation we lost 34 cases. In the 82 patients that went to follow-up, their complains were improved: 89% referred improvement in the dysmenorrhea level, 74,4% in the dyspareunia and 57,3% in the pelvic chronic pain. Only 5 cases referred the same or new digestive complains and only 3 cases referred the same or new urinary symptoms after surgery. It was necessary to re-operate 9 cases because of recurrence of the symptoms, but only 6 cases had residual endometriosis.
Conclusions: This work demonstrates that our surgical strategy for deep endometriosis improves the patients complains, with less surgical time and with a low rate of complications.
Key-words: endometriosis, surgical strategy.

FC4_4

Endometriosis-associated infertility: surgery and IVF. A comprehensive therapeutic approach

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Introduction: Infertility is a common problem presented by patients with endometriosis. At present, whichever treatment is chosen,half of patients with advanced stages of the disease will remain infertile afterwards.
Materials and Methods: This observational study looked at the reproductive outcome achieved after treating a group of 825 patients aged between 20 and 40 years with endometriosis-associated infertility during the period 2001–2008.
Results: Of the 483 patients who had surgery as the primary option, 262 became pregnant (54.2%). The mean time to pregnancy was 11.2 months (1–66 months). Among the patients who did not become pregnant, 144 underwent 184 IVF cycles and 56 additional pregnancies were obtained (30.4% clinical pregnancy rate per retrieval). It is notable that, before any treatment, patients with endometriosis had a poorer ovarian reserve than the control group. The combined strategy of endoscopic surgery and subsequent IVF led to a total of 318 pregnancies, which represents a combined clinical pregnancy rate of 65.8%. This percentage is significantly higher than that obtained with surgery alone ($P<0.0001$), with 173 patients who were not operated on and who went to IVF as the primary option ($P<0.0001$) and with 169 patients who had no treatment and achieved 20 spontaneous pregnancies ($P<0.0001$).
Discussion: With the results from this study, IVF should be proposed as the primary option only in cases where there are additional infertility factors or where there is some contra-indication to surgery. The moment to propose IVF depends on age. Patients younger than 35 years of age can wait for up to 1 year post surgery to go for IVF while older patients are recommended to have IVF 6 months post surgery.
Key-words: endometriosis, endoscopic surgery, infertility.

FC4_5

Laparoscopic nerve-sparing surgery of deep infiltrating endometriosis

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Introduction: The radical surgery of the deep infiltrating endometriosis of the rectovaginal septum and the uterosacral ligaments with or without bowel resection can cause a serious damage of the pelvic autonomic nerves with urinary retention and the need of self-catheterization.
Materials and Methods: We introduce a case series report of 16 patients with laparoscopic nerve-sparing surgery of deep infiltrating endometriosis. We describe the technique step by step and compare the patients' outcome with patients who had undergone a non nerve-sparing surgical technique. In 12 patients a double-sided and in 4 patients a single-sided identification of the inferior hypogastric nerve and plexus was performed.
Results: In all patients at least single sided resection of the uterosacral ligaments were performed. Postoperatively dysmenorrhoea, pelvic pain and dyspareunia disappeared in all patients. The average operating time was 82 min (range, 45–185). Postoperatively, the overall time to resume voiding function was 2 days. The residual urine volume was in all patients<50 ml at two ultrasound measurements.
Discussion: Identification of the inferior hypogastric nerve and plexus was feasible. In comparison with non nerve-sparing surgical technique no cases of bladder self-catheterization for a long or even life time was observed, confirming the importance of the nerve-sparing surgical procedure.
Key-words: deep infiltrating endometriosis, nerve sparing surgery, laparoscopy.

FC4_6

New treatment in endometriosis related pain

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Introduction: Endometriosis is a gynecological condition that affects 4–17% of women of reproductive age and 20–50% of infertile women. Dysmenorrhea, dyspareunia and pelvic cronic pain are the most common symptoms. Although conservative surgical treatment with laparoscopy is effective in reducing pain there are some cases in which a pharmacologic approach after surgery is necessary to avoid a pain recurrence. Eicoisapentenoic acid (EPA) and docosaesaenoic acid (DHA) are the more important fatty acids of the series ω-3. The arachidonic acid is the precursor of the pro-inflammators ecosanoidi that are present in the tissues interested from the pathology. The EPA and the DHA compete with arachidonic acid for enzymes interested in the inflammatory cascade allowing the synthesis of anti-inflammatory eicosanoidi and inhibit the production of interleuchine and TNF-α.
Materials and Methods: A group of women with mild endometriosis after conservative surgery was investigated.
Results: After 12 months of treatment with omega-3 fatty acids (800 mg/day), the patients showed significant decrease in pelvic pain (VAS) ($P<0.001$). No side effects were reported in all patients.
Discussion: In conclusion, this therapy for its low cost and its low incidence of side effects may be considered as an alternative to other medical therapies for recurrent pain related to mild endometriosis after laparoscopy conservative surgery.
Key-words: endometriosis, pelvic pain, omega-3.

FC4_7

Minimising complications with thorough pre-operative assessment and laparoscopic management of 80 cases of severe endometriosis in a tertiary referral centre

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Introduction: Severe endometriosis is increasingly managed exclusively in tertiary referral centres.
Materials and Methods: Retrospective review of 80 cases of severe endometriosis managed laparoscopically.
Results: Pre-operative investigations involved pelvic ultrasound in 70 cases and of these 23 also had a MRI and one case had a CT scan. Pelvic endometriosis was treated with excision alone in 21 cases and with a combination of excision and diathermy in 25 cases. 7 recto-vaginal nodules, one endometriotic nodule of the bladder and a case of ureteric endometriosis were also performed. There were 11 cases of endometrioma of which 6 were excised and 5 required unilateral oophorectomy.10 cases required bilateral oophorectomy. 6 (7.4%) cases were converted into laparotomy due to a frozen pelvis. 3 (3.7%) cases were performed in conjunction with urologist or colorectal surgeon. The only intra-operative complication reported in our series was blood loss of 1 litre in one case (1.2%). Post-operatively 17 (21%) patients were discharged on day of the procedure, 45 (56.2%) were discharged the following day and the

remaining (22%) between 2 and 3 days post-surgery. One patient was readmitted (1.2%) for wound infection. Histology confirmed the presence of endometriosis and excluded malignancy in all cases.

Conclusions: Careful planning, case selection and a multidisciplinary approach are important tools in maintaining a high quality, safe service in the treatment of severe endometriosis.

Key-words: endometriosis, laparoscopy, complications.

FC4_8

Mucose infiltration in deep infiltrative bladder, ureteric, and bowel endometriosis

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Summary: We report the hystopathological results of deep severe bladder, ureteric, and bowel endometriosis in surgical specimens removed by a segmental resection, and the mucouse infiltration of the endometriotic nodule.

Introduction: Deep infiltrating endometriosis is defined as the invasion of more than 5 mm under the peritoneal surface and it is associated with chronic pelvic pain. This severe disease infiltrates the wall layers of different organs, forming a nodular lesion, which is characterized by dense tissue composed of fibrous, and smooth muscle cells with islands or strands of gland and stroma. The invasion of the rectum-sigmoid, bladder and ureters, generates a variety of symptomatology in the patients. However, most of the patients do not report rectal bleeding or haematuria and the involvement of the mucosa is rarely found by cystoscopy or rectosigmoidoscopy.

Aim: To describe the hystopathological results of deep severe endometriosis in surgical specimens removed by a segmental resection, and to evaluate the mucouse infiltration of the endometriotic nodule into the wall of the different organs that were involved.

Materials and Methods: Retrospective hystopathological analysis between 2004 and 2009 of segmental resections due to deep endometriotic nodule (ureter, bladder, rectal). The surgical procedures were a partial cystectomy (bladder endometriosis), ureteric segmental resection (ureteric endometriosis), partial anterior rectal wall disc resection and rectosigmoidectomy (bowel endometriosis).

Results: Among 274 patients reviewed, we found 34 cases of segmental resections due to deep endometriotic lesions. Mean age of the patients was 35 years. 7 patients had a partial cystectomy, 5 with ureteric segmental resection, 10 patients with an anterior rectal resection, and 12 with sigmoidectomy. In all the cases the infiltration of the disease involved the serosal and muscularis layer. 26.5% involved the submucose, and only 11.8 % had mucousal infiltration. The endometriotic lesion usually had an important hypertrophy of the muscular layer, a high fibrotic tissue and endometriotic glands.

Discussion: Deep endometriosis is difficult to treat, as they do not respond to medical management. The retrograde menstruation of the Sampson's theory is very important to explain the pathology of this disease. We found interesting that the infiltration of the endometriotic nodule seems to be from the peritoneum into the mucosal layers, as the serosal and muscularis layers are always affected and only an 11.8% of mucousal infiltration. This makes that the endoscopic endoluminal approach (colonoscopy, cystosopy) will have difficulties to perform a complete resection of the disease and that a laparoscopic transperitoneal surgical approach should be prefered. We think that the surgical management is usually complicated but the complete excision of the lesion is important to reduce the recurrence.

Key-words: endometriosis, histopathology, laparoscopy.

FC4_9

Laparoscopic management of endometriotic cysts: cystectomy or "three stage technique"?

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Introduction: Operative laparoscopy compared with laparotomy has been established as the gold standard surgical approach for the treatment of endometriotic cysts, while excisional surgery seems to be more beneficial in comparison to ablative techniques, despite the limited number of prospective randomized trials. The aim of this study was to investigate the effect of two different laparoscopic treatments of endometriotic cysts on hormonal and ultrasonographic indicators of ovarian reserve and to assess surgery characteristics and recurrence rate.

Materials and Methods: In this prospective, randomized trial twenty patients of reproductive age were randomly assigned to undergo either laparoscopic cystectomy (Group I) or the thee-stage procedure, described by Donnez et al. (Hum. Reprod., 1996) (Group II). Patients of Group I underwent stripping-cystectomy of the endometrioma, while patients of Group II laparoscopic drainage of the endometriotic content, three months GnRH-a administration, followed by laparoscopic laser ablation of the inner lining. Before surgery, 6 and 12 months postoperatively all patients were evaluated.

Results: Mean serum anti-mullerian hormone was reduced significantly from 3.9 to 2.9 ng/ml in Group I compared to

the reduction from 4.5 to 3.9 in Group II (p=0.026). No significant difference was observed in the concentration of FSH, LH, E2 and inhibin-b between the two Groups. The antral follicle count (AFC) of the operated ovary was increased significantly (p=0.002) in Group II compared with Group after 6 months. On the contrary, the residual ovarian volume and the lowest pulsatility and resistance indexes were found to be comparable between the two Groups before and 6 months after the intervention. One year after the laparoscopic approach, two reccurences of endometriomas on the operated ovary were detected in Group II, while none in Group I.
Conclusions: Cystectomy of endometriotic cysts, although considered the "gold standard" is associated with damage of the ovarian tissue that may result in reduction of the ovarian reserve compared to the "three-stage" technique.
Key-words: endometrioma, laparoscopic cystectomy, endometriotic cyst laser ablation.

FC4_10

Postoperative complications associated with two surgical procedures used in the management of rectal endometriosis: giving our patients an informed choice

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Objective: To evaluate postoperative complications associated with surgical management of rectal endometriosis by either colorectal segmental resection or nodule excision.
Materials and Methods: During 60 consecutive months, 82 women were included in a retrospective comparative study, which distinguishing feature is that the choice of the surgical procedure was not related to the characteristics of the nodule, but to our thoughts concerning the disease: systematic colorectal resection before November 2007 and rectal nodule excision from that date onward.
Results: Colorectal segmental resection was performed in 28 patients (34%), while rectal nodule excision in 54 women (66%). No intraoperative complications were recorded, but one case of rectal fistulae occurred in each group. In colorectal resection group, 5 women (18%) presented a bladder atony>1 month, 4 women (14%) experienced increasing of chronic constipation, while 2 women (4%) presented shank acute compartment syndrome (respectively P=0.04, 0.01 and 0.11). Delayed functional outcomes were studied in 41 women (50%) whose postoperative follow up was superior to 18 months. An increase in the number of daily stools >=3 was observed in 13 (52%) vs. 3 (19%) patients managed respectively by segmental resection and excision (P=0.02). Severe constipation appears to be definitive in 3 women having undergone segmental resection. No recurrences were recorded, and pain improvement was comparable between the two groups.
Conclusions: Colorectal resection seems increase the risk of several postoperative unfavorable outcomes. Information about functional outcomes should be provided to patients, and should be considered when deciding on the most appropriate treatment of this disease.
Key-words: rectal endometriosis, colorectal resection, excision.

FC4_11

Effectiveness of total laparoscopic pelvic peritoneal excision for the management of endometriosis

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Introduction: Surgical excision of endometriosis is effective in reducing pain associated with endometriosis, however up to 40% of women develop recurrent disease1-2. Total pelvic peritoneal excision offers a possible solution for reducing disease recurrence and helps preserving ovaries3.
Objective: To determine the long term effectiveness of total pelvic peritoneal excision of endometriosis in reducing pain, improving quality of life and the need for re-surgery.
Materials and Methods: Clinical case notes review and a postal questionnaire of various pain scores before and after surgery of 207 consecutive women who underwent surgery between 1999 to 2006 at Dewsbury Hospital. The endometriosis specific EHP-5 questionnaire for health related quality of life was used. *Results*: 117 (56.5%) returned the questionnaire. Women reported a significant improvement in their individual pain scores (p=<0.001), global pain score (p=<0.001), non-menstrual global pain score (p=<001) and EHP-5 health related quality of life scores (p=<0.001). Having had hysterectomy at excision improves chances of improvement in symptoms (F=19.7, p=0.001). 47 (23%) had re-operation over 64 months, 23(49%) of those for ovarian adhesion. Only 7(3.4%) peri-menopausal women had bilateral oophorectomy. The recurrence of endometriosis was rare, 0.5% within and 6.8% outside the previously excised area mainly utero-vaginal pouch. There were no major complications, conversions, or return to theatre. 185 (89.4%) were discharged home after overnight stay with no readmission for complications.
Conclusions: Management of endometriosis by laparoscopic total pelvic peritoneal excision is safe, improves pain, health related quality of life, reduces recurrence and helps preserving ovaries.
Key-words: endometriosis, operative laparoscopy, excision.

FC4_12

Transanal specimen extraction after laparoscopic rectosigmoid resection anastomosis for extensive bowel endometriosis

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Background: Transanal specimen extraction in laparoscopic rectosigmoid resection avoids a muscle-split incision for specimen retrieval. A new technique for transanal specimen extraction in multidisciplinary laparoscopic surgery for deep pelvic endometriosis is described and the results of a pilot study are presented.
Methods: A total of 18 consecutive patients undergoing multidisciplinary laparoscopic treatment for endometriosis, with laparoscopic rectosigmoid resection and transanal specimen extraction were prospectively recruited in this study. A specimen retrieval pouch was used to facilitate specimen extraction. All preoperative and operative data, postoperative morbidity and short-term outcome were collected in a prospective database.
Results: Median age was 35 years (range: 26–45) and median BMI was 23 kg/m2 (range: 18–31). Median operating time for the rectosigmoid resection was 93 minutes (range: 65–120) and median intraoperative blood loss was minimal. The median length of the extracted specimen was 21 cm (range: 7–32). Only 2 patients had a defunctioning loop ileostomy (11%) for a low colorectal anastomosis. There were no anastomotic leaks, nor pelvic sepsis. The median hospital stay was 6 days (range: 4–13). All patients did well at a median follow-up of 5 months and none of them reported any anal dysfunction. Of the 11 patients who wish to become pregnant, so far 2 have achieved a clinical intra-uterine pregnancy.
Conclusion: Laparoscopic rectosigmoid resection with transanal specimen extraction for endometriosis is safe and feasible and has good outcome.
Key-words: endometriosis, rectosigmoid resection, transanal extraction.

FC4_13

Laparoscopic management of deeply infiltrating endometriosis: early results of our learning curve using a reproducible standardised technique

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Summary: Laparoscopy has become the method of choice to treat deeply infiltrating endometriosis (DIE) due to its andvantages of magnification and careful hemostasis.
Introduction: DIE commonly affects the uterosacral ligaments and rectovaginal septum, extending retroperitoneally and forming fibrotic nodules that frequently involve the ureter or rectosigmoid.
Materials and Methods: We operated 20 patients with retroperitoneal endometriotic nodules using a standardized technique with mainly reusable instruments. All patients had chronic pelvic pain (CPP) mainly in the form of deep dyspareunia +/- dysmenorrhea. All patients completed a pain questionnaire was before and 6 months after surgery.
Results: 19/20 cases were completed laparoscopically. One patient was converted to laparotomy to perform segmental sigmoid excision for a large bowel lesion. 7 patients had unilateral uterosacral nodules, 6 had bilateral uterosacral nodules and 6 had rectovaginal nodules with or without lateral involvement. Bowel-involving lesions were treated with the “shaving” technique. The vagina was opened in 3 cases. The size of excised lesions ranged from 1–4 cm. Six months postoperatively, CPP resolution was reported as complete/almost complete in 13/19 cases, and satisfactory in 5/19 cases respectively. One patient with recurrent endometriosis reported persistent but improved symptoms. We had no serious operative or postoperative complications.
Discussion: Laparoscopic management of DIE is technically demanding. The learning curve is relatively slow but can be shortened with thorough knowledge of the retroperitoneal pelvic anatomy. Careful and systematic dissection is necessary to avoid complications.
Key-words: deep endometriosis, infiltrating, endometriosis.

FC4_14

Laparoscopic excision vs transurethral resection for deep bladder endometriotic nodules with intravesical extension

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Summary: Less than 1% of all the patients affected of endometriosis have deep involvement of the bladder. Standard treatment is partial cistectomy with complete excision of the lesion with preservation of the vesical trigone and both ureters. Transurethral resection (TUR) is not an optimal therapy for bladder endometriosis due to the high recurrence rate reported in the literature.We describe the laparoscopic approach in two patients affected of bladder endometriotic nodules. Case 1: A 31-year-old multiparous woman (G2C1A1), was referred to our unit

with an ultrasound suggestive of bladder endometriotic nodule (28 mm). The diagnosis was confirmed by cystoscopy and pelvic MRI. She also presented a 4 cm ovarian endometrioma and a 3 cm endometriotic nodule located at the abdominal wall. Case 2: A 34-year-old nulliparous woman, with primary infertility, consulted for hematuria a month after a TUR for a vesical endometriotic nodule. MRI showed a 3.7×1.1 cm residual lesion in its upper wall, identified as endometriosis, with no other significant urological findings. A subserous mioma in left horn and an endometrial polyp were also identified. Both patients were managed laparoscopically, after a complete gynaecologic and urologic evaluation. They underwent general anesthesia and cystoscopic bilateral ureteral catheterization. In both cases, the bladder endometriotic nodule was dissected laterally and anteriorly and a controlled opening of the bladder was done in order to perform a complete identification of the disease. Lesions were completely excised with 0.5 cm margin, respecting both ureteral meatus. Bladder were sutured in two planes, checking vesical integrity with methylene blue.

In the first case, a right salpingectomy due to hydrosalpinx was performed. Supra-aponeurotic parietal node removal after skin incision was done at the end of the procedure.

In the second case, a laparoscopic miomectomy, adhesiolysis and an hysteroscopic polypectomy were also performed.

Postoperative period was uneventful and both patients underwent GnRH analogues therapy for 4 months. Bladder and ureteral catheters were removed two weeks postoperatively. Pathological examination confirmed the diagnosis of bladder endometriosis.

Conclusions: Laparoscopic approach for deep infiltrating bladder endometriosis is a safe and reproducible procedure, which allows a complete excision of the endometriotic nodule, with preservation of the bladder function.

Key-words: bladder endometriosis, laparoscopy, transurethral resection.

FC4_15

Mucose infiltration in deep infiltrative bladder, ureteric, and bowel endometriosis

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Summary: We report the hystopathological results of deep severe bladder, ureteric, and bowel endometriosis in surgical specimens removed by a segmental resection, and the mucouse infiltration of the endometriotic nodule.

Introduction: Deep infiltrating endometriosis is defined as the invasion of more than 5 mm under the peritoneal surface and it is associated with chronic pelvic pain. This severe disease infiltrates the wall layers of different organs, forming a nodular lesion, which is characterized by dense tissue composed of fibrous, and smooth muscle cells with islands or strands of gland and stroma. The invasion of the rectum-sigmoid, bladder and ureters, generates a variety of symptomatology in the patients. However, most of the patients do not report rectal bleeding or haematuria and the involvement of the mucosa is rarely found by cystoscopy or rectosigmoidoscopy

Aim: To describe the hystopathological results of deep severe endometriosis in surgical specimens removed by a segmental resection, and to evaluate the mucouse infiltration of the endometriotic nodule into the wall of the different organs that were involved.

Materials and Methods: Retrospective hystopathological analysis between 2004 and 2009 of segmental resections due to deep endometritic nodule (ureter, bladder, rectal). The surgical procedures were a partial cystectomy (bladder endometriosis), ureteric segmental resection (ureteric endometriosis), partial anterior rectal wall disc resection and rectosigmoidectomy (bowel endometriosis).

Results: Among 274 patients reviewed, we found 34 cases of segmental resections due to deep endometriotic lesions. Mean age of the patients was 35 years. 7 patients had a partial cystectomy, 5 with ureteric segmental resection, 10 patients with an anterior rectal resection, and 12 with sigmoidectomy. In all the cases the infiltration of the disease involved the serosal and muscularis layer. 26.5% involved the submucose, and only 11.8 % had mucousal infiltration. The endometriotic lesion usually had an important hypertrophy of the muscular layer, a high fibrotic tissue and endometriotic glands.

Discussion: Deep endometriosis is difficult to treat, as the disease does not respond to medical management. The retrograde menstruation of the Sampson's theory is very important to explain the pathology of this disease. We found interesting that the infiltration of the endometriotic nodule seems to be from the peritoneum into the mucosal layers, as the serosal and muscularis layers are always affected and only an 11.8% of mucousal infiltration. This makes that the endoscopic endoluminal approach (colonoscopy, cystosopy) will have difficulties to perform a complete resection of the disease and that a laparoscopic transperitoneal surgical approach should be prefered. We think that the surgical management is usually complicated but the complete excision of the lesion is important to reduce the recurrence. We think that the surgical management is usually complicated but the complete excision of the lesion is important to reduce the recurrence.

Key-words: endometriosis, histopathology, laparoscopy.

FC4_17

Long term effects of radical laparoscopic resection of bowel endometriosis

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Background: The aim of this study was to evaluate the long term effects of laparoscopic radical resection of endometriosis in patients with deep infiltrating endometriosis (DIE) involving the bowel.
Materials and Methods: One-hundred and seventy-two consecutive symptomatic women with histologically verfified and radically resected DIE of the bowel were prospectively evaluated using a self-administered questionaire evaluating endometriosis-associated symptoms before and after undergoing surgery using a 10 point rating scale (VAS).
Results: Seventy-five women met the stringent inclusion criteria. Regarding chronic pelvic pain, dysmenorrhea and dyspareunia a change of median values (VAS) was observed from 6.95 to 2.03 ($p<0{,}001$), 6.89 to 2.26 ($p<0{,}001$) and 4.13 to 1.81 ($p<0{,}001$; Wilcoxon test), respectively. Furthermore, dyschezia and dysuria were found to be reduced significantly in 69.3% to 41.3% ($p<0{,}001$) and 18.7% to 8% ($p<0{,}001$, McNemar test) cases. Finally, an increase quality of life (QoL) measured via a 10 point rating scale was observed following surgery (4.52 to 8.65, $p<0{,}001$, Wilcoxon test).
Conclusions: Resection of DIE significantly reduces disease-related symptoms and improves quality of live (QoL) in patients with symptomatic bowel endometriosis.
Key-words: bowel endometriosis, laparoscopic surgery, outcome.

Free Communications 5_Hysterectomy

FC5_1

Laparoscopic supracervical hysterectomy: reduction of postoperative spotting

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Introduction: Supracervical hysterectomy is discussed to be a good alternative to complete hysterectomy. Semm advised to excide the cervical channel vaginally to reduce the risk of cervical stump carcinoma and spotting. We here report our stump infection and spotting rate after usual LASH and LASH with additional laparoscopic excision of the cervical channel (eLASH).
Materials and Methods: 260 premenopausal patients underwent LASH at our institution between January 2006 and June 2009. Until July 2007 we detached the cervix rather straight and coagulated the remaining cervical channel (LASH). Since July 2007 we excided the cervical channel laparoscopically (Ultracision) and coagulated the remaining very small cervical channel (eLash). All patients were asked to fill in a self administered questionnaire concerning the spotting rate, postoperative infections and smoking attitudes.
Results: We had a response rate of 70% (n=183). 88 patient of the LASH group and 85 patients of the eLASH group completed the questionnaire. Questionnaire was incompletely filled in by nine patients. We had a postoperative stump infection rate of 6.8 % (6/88) in the Lash group and 5.9 % (5/85) in the eLASH group. No statistic significant differences between smokers and non-smokers were found. 21.6 % (19/88) of the LASH group and 5.9 % (5/85) of the eLASH group reported on spotting continuing more than one year after operation.
Conclusions: The laparoscopic excision of the cervical channel seems to reduce the spotting rate. Stump infection rate is moderate and comparable to LASH. There seems to be no negative influence concerning smoking and infection rate.
Key-words: LASH, spotting, stump infection.

FC5_2

Laparoscopic assisted subtotal hysterectomy (LASH): cost of the first shot

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Introduction: Some tertiary units are performing LASH as a day case procedure. This study's aim was to assess the safety, post-operative recovery, inpatient stay and procedure costs for patients who had LASH in a Scottish district general hospital.
Patients and Methods: All patients who underwent LASH from August 2008 to September 2009 were included. The procedure was performed through four ports using Ligasure, lap loop and Gynecare morcellator.
Results: 24 patients had LASH. The average age (±SD) was 43 (±4.7) years. The mean Body Mass Index was 29 (±4.7). The mean theatre time was two hours 20 minutes (1 hr 55 min–3 hrs). Postoperatively the patient stayed an average of 1.8 nights compared to 3.7 nights for open procedure. Operative cost was £ 1348.44. The cost of hospital stay was £ 424. The only intra-operative complication was small bowel injury during umbilical port introduction. Post-operatively one patient had a pelvic haematoma and another had urinary tract infection. Two cases were abandoned due to poor access in a patient of high BMI with large fibroid uterus and severe endometriosis.

Discussion: The postoperative hospital stay was shorter with a quicker recovery in our study group compared to open procedure. The complication rate was comparable to other published reports. The benefits of convenience for patient and her family, reduction of wound complication and quicker return to normal daily activity and work were not assessed in this study. LASH is a safe and cost effective procedure in a district general hospital setting.
Key-words: laparoscopy, hysterectomy.

FC5_3

A retrospective case-control evaluation of laparoscopic total or supracervical hysterectomy outcomes

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Objective: To compare the effectiveness of laparoscopic total (TLH) versus supra-cervical (SLH) hysterectomy concerning short- and long-term (36 months) morbidity, postoperative vaginal bleeding, postoperative cervical disease, urinary symptoms and, pelvic prolapsed.
Materials and Methods: The retrospective cohort study included women (n=148) who had undergone either SLH (n=38 pre-menopausal women out of 75) or TLH (n=36 pre-menopausal patients out of 73) for benign gynecologic problems from January 2002 through August October 2006. Main outcome measures were: the global operative time; intra-operative blood loss; variation of haemoglobin; the length of postoperative ileus; the post-operative pain intensity; intra- and post-operative (until 6 weeks after surgery) complications; changes in the urinary function; pelvic prolapse after surgery.
Results: Both for pre- and post-menopausal women, significantly longer operation time, higher intra-operative blood loss, greater haemoglobin variation and, longer hospital stay were recorded in the TLH than SLH group. The degree of pain 24, but not 48, hrs after surgery was significantly (P= 0.0001) lower in patients underwent TLH. Patients in the TLH group reported more complications [n=6 (8.2%); P= 0.044]. Urinary symptomatology reduced significantly from baseline levels after surgery, without differences between groups at 36 months follow-up: the rate of pelvic prolapse after surgery was similar between groups.
Conclusions: SLH benefits [minimally invasive nature, fewer complications, conservation of the cervix with its ligamentous attachments] are likely to support the supra-cervical approach in cases not contraindicated or at least, not to consider it a surgical technique of minor relevance.
Key-words: supracervical, laparoscopy, hysterectomy.

FC5_4

Laparoscopic-assisted vaginal hysterectomy with and without uterine artery transsection: an analysis of 1255 cases

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Introduction: Evaluation of the intraoperative and postoperative complication in patients undergoing LAVH for benign gynaecologic diseases.
Patients and Methods: Retrospectively analyzed of 1255 women who underwent hysterectomy between 1998 and 2009 for benign pathologic conditions. 856 Patients underwent LAVH with trans-section of the uterine vessels and 399 patients without trans-section of the uterine vessels.
Results: Median operative time was similar between the two techniques. Intraoperative complication rate was not significantly different between groups 1 and 2 (1.5% vs. 1.2%, respectively). The injury of the urinary tract was the most common intraoperative complication for both groups of the study. In Major complications were bladder injuries (0.87%), (0.15%) ureter injuries, (0.15%) bowel injuries, (0.15%) major vascular injuries, cases needed readmission in operations-room were: (0.15%) cases of massive bleeding from the vaginal cuff, (0.31%) cases of vaginal cuff dehiscent, (0.47%) cases of intra-abdominal bleeding, (0.23%) cases of postoperative ileus, (0.15%) vaginal cuff haematoma and (0.15%) pelvic abscesses. Laparoconversion rate was similar in LAVH type I and II (0.5% vs. 0.35%, respectively). Postoperative complications were significantly higher in LAVH type I (2.25%) compared to LAVH type II (1.16%).
Conclusions: The LAVH with laparoscopic transsection of the uterine artery is an effective and safe technique with less postoperative complication compared to LAVH without uterine transsection
Key-words: LAVH, laparoscopy, complications.

FC5_5

Closure of the vaginal cuff after total laparoscopic hysterectomy with conventional sutures versus barbed sutures: a RCT

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Objective: Investigating the efficacy of suturing mode of the vaginal cuff after TLH.
Materials and Methods: Prospective RCT, patients undergoing TLH.

Interventions: Closure of vaginal cuff with barbed sutures versus separated conventional sutures
Results: We would like to present the preliminary results.
Objective: Investigating the efficacy of closure of the vaginal cuff after TLH with barbed sutures versus conventional closure with separated sutures. Total laparoscopic hysterectomy (TLH) is the preferred alternative to abdominal hysterectomy (TAH) because of reduced duration of hospitalisation, quick recovery and low complication rates. However the longer operation time and the higher incidence of vaginal cuff dehiscence of LH asks for improvement. In 2007 the barbed suture was introduced in gynecologic practice. Recent publications in other areas show that barbed sutures are reliable and offer more efficacy. This study was set up to investigate whether suturing the vaginal cuff with barbed sutures reduces operation time. Secondary outcomes are bloodloss, short and longterm complications, and patient satisfaction.
Materials and Methods: Prospective RCT, all patients undergoing TLH are eligible for inclusion. With a 20% reduction in suturing time we calculated to include 80 patients in the study, each arm 40 patients. In one group we will close the vaginal cuff with a conventional closure and in the other group the Quill barbed suture will be used for closing the cuff. At six weeks an evaluation of the cuff will be performed. The investigator will be blinded for the closure procedure.
Interventions: Closure of vaginal cuff with barbed suture versus separated conventional suture
Results: We plan to present the preliminary results after a pilot of 10% inclusion.
Key-words: laparoscopic hysterectomy, barbed sutures, RCT.

FC5_6

The learning curve of total laparoscopic hysterectomy

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Aim: To determine the characteristics of the learning period of a standardized procedure such as TLH.
Background: There has been controversy on the number of operations needed to be performed in order for a surgeon to be considered competent to perform a laparoscopic hysterectomy. There is also big variation among surgeons in terms of time needed to complete the procedure, estimated blood loss and number and nature of complications reported. This is thought to be largely due to different instrumentation, techniques and levels of dexterity and expertise.
Setting: A district hospital in UK where a fellowship in MAS was delivered for one year to five trainees in total by the same senior surgeon.
Materials and Methods: Retrospective analysis of 233 consecutive cases of the procedure performed since July 2004. Time to complete the operation, Estimated Blood Loss (EBL), intra-operative complications, hospital stay and re-admissions were recorded.
Results: Five trainees performed an average of 19.4 procedures (SD6.69, range 12–30) during their fellowship (8 to19 months). The vast majority of the TLH procedures was of low complexity and the average time of completion was 76.65 minutes (SD: 28.82, range 25–220). Preliminary analysis showed that there were no differences between the trainees in any of the recorded parameters (time, EBL, intra-operative complications, hospital stay, and re-admissions). Furthermore, the analysis revealed that there were no differences in any of the parameters between the first and the second half of the trainees' fellowship. *Conclusions*: TLH when standardized is easy to teach and learn to perform with very low complication rates during the learning curve.
Key-words: total laparoscopic hysterectomy, learning curve.

FC5_7

Conversion to laparotomy in laparoscopic hysterectomy: strategy or failure?

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Introduction: Objective of this study is to explore reasons to convert to laparotomy in laparoscopic hysterectomy (LH), with respect to adverse events, BMI, indication, uterus weight, former abdominal surgery and learning curve of the performer. Secondary objective is to discern strategic conversions from conversions due to an adverse event.
Materials and Methods: nationwide prospective one year cohort analysis of LHs.
Results: 74 out of 1534 LHs (4.8%) needed conversion. 41% of these conversions were due to an adverse event (incontrollable bleeding (60%), internal organ lesions (20%) and technical failure (10%)). An adverse event was significantly associated with a conversion (OR 10.9). Elevated BMI caused a significant rise in conversion rate up to 9.6 OR. Endometrial cancer was associated with a significant higher rate in conversions compared to benign indications (OR 2.1). Increased uterus weight caused higher risk for conversion (OR 3.8). Former abdominal surgery was not associated with a higher conversion rate. During the learning curve (30 LHs) no higher conversion rate was observed. Strategic conversions were made because of troubled visibility/mobility due to altered anatomy (adhesions, myomatas) in 64%, (in case of a malignancy) because the uterus was too big to be removed as one unit (16%) or because of respiratory problems due to a high BMI (16%).
Discussion: The majority of conversions in LH were executed due to strategic considerations, while laparoscopically incon-

trollable bleeding was the leading adverse event for conversion. Increased BMI, endometrial cancer and a increased uterus weight were associated with higher conversion rates. Optimizing training in controlling bleeding laparoscopically may force back conversion numbers.

Key-words: laparoscopic hysterectomy, conversion, complication.

FC5_8

Total laparoscopic hysterectomy without uterine manipulator (TLHwM): description of a new technique and its outcome

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Introduction: Hysterectomy remains the most common major gynecological operation. This is the first study that describes a new technique of TLH without using any kind of uterine manipulator or vaginal tube (TLHwM) and analyzes the intra- and postoperative surgical outcome of the first 67 cases.

Patients and Methods: Between October 2008 and December 2009, 67 patients underwent TLH without uterine manipulator or vaginal tube. We analyzed the differences in the outcome by using three different kind of surgical instruments: In 21 cases the TLHwM was performed using conventional 5 mm bipolar and scissors, in 22 cases using Sonosurgical and in 24 cases using PKS Cutting Forceps.

Results: There was no intra- or postoperative complications. The overall mean operating time was by TLHwM with salpingo-oophorectomy 98 minutes and without salpingo-oophorectomy was 80 minutes. The mean operating time using cutting forceps was significant lower. The mean uterine weight was 263 g.

Discussion: TLHwM seems to be a safe and practical surgical method especially in patients with vaginal stenosis and possible to perform in cases of enlarged uterus. With its short operation time and no complication rate, we believe that this method is an enrichment of the laparoscopic hysterectomy techniques.

Key-words: TLHwM, hysterectomy, PKS cutting forceps.

FC5_9

Critical evaluation of hysterectomy—surgery in 2010

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Summary: Total laparoscopic hysterectomy and subtotal laparoscopic hysterectomy are worldwide still performed in less than 20% of cases. Why? Historically hysterectomy had a long history over centuries to be performed with a good outcome for patients. Since 1950 intraoperative letal cases are rarely reported and if they occur, it was in cases of malignancy. In the late 20 th century laparoscopic hysterectomy became a reality and is slowly more and more integrated into the operative panel of every gynecologic surgeon. Improved technical and haemostatic possibilities allow all types of laparoscopic hysterectomy to be performed today with high precision and optimal outcome. In our department about 30% of all hysterectomies are still performed by the vaginal route alone without laparoscopic addition. Laparotomy hysterectomies are only done in specific cancer cases. Subtotal laparoscopic hysterectomy is already the leading technique. I foresee with a decreasing indications for hysterectomy that the laparoscopic route in combination with vaginal surgery will be the leading surgical technology in the next decade of this 21 century.

Key-words: TLH, LASH.

FC5_10

Robot-assisted and laparoscopic hysterectomy: discussion of the technic and perioperative outcomes

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Summary: The aim of the authors is to present the specific technical aspects of the different kinds of procedures in the minimally-invasive simple hysterectomy and to analyze the perioperative outcomes.

Materials and Methods: For a period of two years (from January 2008 to December 2009) 321 patients with benign and malignant gynecological diseases underwent minimally-invasive simple hysterectomies as follows: to 53 (17%) of them—robot-assisted hysterectomy (RAH), to 66 (21%)—total laparoscopic hysterectomy (TLH), to 130 (40%)—laparoscopic hysterectomy with ligation of the uterine arteries (LH) and to 72 (22%)—laparoscopically-assisted vaginal hysterectomy (LAVH). For performing the robotic hysterectomies the surgical system da Vinci S (Intuitive Surgical) was used, while for the laparoscopic procedures—the full equipment for conventional laparoscopy (Karl Storz).

Results: The shortest operative time (incision time—skin closed time) was registered in patients, who underwent LH (62,96±15 min) in comparison with the other three kinds of procedures (RAH—86,60±19 min; TLH—68,80±17 min; LAVH—88,82±21 min)($p>0,05$). No significant differences in the mean hospital stay were found (RAH—3,83 days; TLH—2,62 days; LH—2,10 days; LAVH—2,94 days), ($p>0,05$). The average BMI of the patients with

robot-assisted hysterectomy were 27,30 (±6,938), being significantly higher than that of patients with laparoscopic hysterectomy (23,10±5,989) (p<0,05).
Conclusions: The analysis of the preliminary data suggests that the perioperative results from the robotic and laparoscopic hysterectomy are commensurable. The main advantage of the robotic system is the possibility to perform operative interventions to patients with higher BMI.
Key-words: robot-assisted hysterectomy, laparoscopic hysterectomy, perioperative outcomes.

FC5_11

Laparoscopic hysterectomy: preferred or referred?

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Introduction: Objective of this study is to compare preferences for laparoscopic hysterectomy (LH) over abdominal hysterectomy of LH-performing gynecologists (Group I), their non-LH-performing colleagues (Group II), as well as gynecologists employed in a hospital not providing LHs (Group III). Secondary aim is to determinate boundary values of patient characteristics, influencing the preference for mode of hysterectomy. Consequently, differences in referral tendencies between Group II and Group III will be compared.
Materials and Methods: Nationwide web based preference study using conjoint analysis.
Results: Response rate: 75% (200/268 gynaecologists). Group I opted significantly more often for LH (86.3%, 95%-CI; 81.6–91.0) compared to Group II (70.9%, 95%-CI; 63.4–78.4), while the latter group significantly more frequently chose LH, compared to Group III (50.3%, 95%-CI; 35.7–64.9). In daily practice, Group II also claimed to refer candidates more often for LH, compared to Group III. Increases in BMI, estimated uterus size, or number of former abdominal surgeries caused a significant drop in shares of preferences for LH in all three groups.
Discussion: The presence of a LH performing gynecologist positively influences the referral behavior of colleagues. The impact of a raised BMI level appears to be a restrictive parameter for choosing LH, according to both referring gynecologists as well as performers. Level of experience (performed numbers of LHs) does not influence preference of laparoscopists. The observed discrepancy between reported and simulated referral behavior of group III yields that practical impediments significantly slow down referral tendencies, consequently hampering the implementation of LH.
Key-words: hysterectomy, preference, referral tendencies.

FC5_12

Battle of the Biclamps: total laparoscopic hysterectomy with Biclamp® versus Biclamp® vaginal hysterectomy

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Introduction: To compare burgeoning techniques of hysterectomy, report on safety and efficacy of Total Laparoscopic Hysterectomy (TLH) versus Vaginal Hysterectomy (VH) both approaches utilising ERBE Biclamp ® technology.
Methods and Materials: A retrospective case series compared operative profiles of 35 consecutive Biclamp® Total Laparoscopic Hysterectomies with 35 consecutive Biclamp ® vaginal hysterectomies performed between 1/11/07 to 03/4/09. Varying indications for hysterectomy including endometrial carcinoma, utero-vaginal prolapse and menorrhagia were observed.
Results: Operative time, blood loss, complications and hospital stay were the primary outcomes of this study. Mean operating time for the TLH group was 73 minutes (range 45–175 min) compared with 83 minutes (range 50–120 min) for the VH series. Estimated blood loss was approximately 4 times less in the TLH group, average 56 ml versus 200 ml for the vaginal Hysterectomy series. Mean uterine size was 169 grams (range 62–575 grams) in the TLH group versus 118 grams in the vaginal hysterectomy series (range 48–602 grams). A much shorter hospital stay was noted in the TLH series with an average of 34 hours, which approached 24 hours towards the end of the series. This compared to an average hospital stay of 84 hours in the VH series. No major intra-operative complications were observed in either group. In the TLH series there was one case of port site hernia and urinary retention. In the VH series 2 patients required blood transfusions and 2 had post-operative infections, both urinary in origin.
Discussion: A considerably shorter hospital stay and blood loss were noted in the TLH series versus the VH series despite using the same primary haemostatic energy modality.
Key-words: total laparoscopic hysterectomy, vaginal hysterectomy.

FC5_13

TLH: the worthing experience out of 233 cases

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Aim: To evaluate certain parameters (operative time, EBL, complication rates, hospital stay, readmission rates) for a standardized method of performing a TLH.

Setting: A MAS centre of a district hospital in south England.
Material and Methods: Retrospective analysis of 233 consecutive cases of the procedures performed between July 2004 and May 2010, from which complete data were found for 201 cases. Time to complete the operation, Estimated Blood Loss (EBL), intra-operative complications, hospital stay and re-admissions were recorded. Data were analysed both pooled and separately according to complexity of the procedure and findings.
Results: Our pooled complication rate was 5% including bladder damage (5), ureteric injury (1), bowel damage(1), and trocar related injury (1). The average operative time was 100.32 minutes (SD: 75.73, range 25–510), average EBL 167.47 ml (SD: 210.76, range 0–1500), average hospital stay 2.76 days (SD: 1.12, range 2–14), whereas readmission rate was 24% including three women with vault dehiscence at 6 to 8 weeks. However, excluding the high complexity cases (DIE, Frozen/Obliterated pelvis, large fibroids, severe adhesions) the figures were much different. The complication rate was 2.9%, average theatre time dropped to 67.81 minutes (SD: 25.80, range 25–220), average EBL 119.75 ml (SD: 118.50, range 0–800), average hospital stay 1.85 days (SD: .89, range 1–6), whereas readmission rates remained at 24%.
Conclusions: Our data suggest that a hysterectomy of low complexity is very safe and should be done laparoscopically if the vaginal approach is not feasible.
Key-words: total laparoscopic hysterectomy, learning curve, complications.

FC5_14

Prospective comparison of post-operative quality of life following total laparoscopic hysterectomy versus laparoscopic supracervical hysterectomy

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Study objective: Evaluate and compare recovery times and quality of life in patients having a total laparoscopic hysterectomy (TLH) and laparoscopic supracervical hysterectomy (LSH).
Materials and Methods: 121 patients having TLH (71) or LSH (51) for benign indications from 02/08–01/10 were followed prospectively using a daily log and an SF-36 quality of life questionnaire pre and postoperatively.
Results: Changes in quality of life scores from preoperatively to postoperatively were significantly different in 5 out of 8 questionnaire categories and transformed summary scores; Role Physical (p=0.05), Bodily Pain (p=0.01), Vitality (p=0.02), Social Functioning (p=0.0001), Role Emotional (p=0.03), Physical Component Summary (p=0.04) and Mental Component Summary (p=0.003). There was no significant difference between the groups in use of pain medications, level of pain, level of nausea or return to normal activities.
Conclusions: This prospective study comparing TLH and LSH showed a significant difference in postoperative quality of life. LSH appears to provide greater improvement of physical and mental quality of life compared to TLH, however no significant differences was found in the two groups regarding pain or return to daily activities.
Key-words: hysterectomy, quality of life, laparoscopic.

FC5_15

Multidisciplinary recommendations for resumption of (work) activities after gynaecological surgery; a modified Delphi study among experts

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Summary: Full recovery (including return to work) after gynaecological surgery takes much longer than expected, irrespective the level of invasiveness. This may be explained by the fact that convalescence recommendations given by medical professionals show substantial variability. To obtain structured detailed uniform recommendations a modified Delphi study among experts was performed.
Introduction: Convalescence advice given by gynaecologists, general practitioners (GPs) and occupations physicians (OPs) shows ample variability, is not evidence-based and is often conflicting, possibly resulting in longer sick leave after gynaecological surgery. National or international guidelines on this topic are lacking. To obtain structured detailed uniform recommendations we performed a modified Delphi study among experts.
Methods: Multidisciplinary detailed recommendations for (graded) resumption of 46 (work) activities (e.g. lifting, walking) after uncomplicated hysterectomy (LSH, TLH, VH and AH) and laparoscopic adnexal surgery were developed. Recommendations were based on a literature review and a structural consensus procedure among 12 experts recruited in collaboration with the participating medical boards of gynaecologists, GPs, OPs.
Results: Out of initially 46 convalescence recommendations, 38 were selected for the multidisciplinary guideline by the expert panel. Consensus for all activities was achieved on respectively 0/38, 16/38, 36/38, and 38/38 after four Delphi rounds. Between the third and fourth round the consensus was judged by a select sample of 26 gynaecologists, 19 GPs and 18 OPs.

Discussion: We were able to bridge the gaps between opinions of gynaecologists, GPs and OPs and achieved 100% consensus on all relevant recommendations. Further study will be conducted to validate these results in general practice.

Key-words: gynaecological surgery, multidisciplinary perioperative convalescence recommendations, modified Delphi study.

FC5_16

Multidisciplinary care program for resumption of work activities after gynaecological surgery; an interactive patient weblog

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Summary: Resumption of (work) activities after gynaecological surgery takes much longer than expected, irrespective the level of invasiveness. Doctors and patients collaborated to develop a multidisciplinary care program for resumption of activities, containing the use of an interactive weblog.

Introduction: Perioperative care is fragmented, poorly coordinated and often conflicting advice is given, possibly explaining long periods of resumption of activities. Improvement of perioperative care, with detailed recommendations on resumption of activities and return to work along with optimal cooperation among gynaecologists, general practitioners (GPs), occupational physicians (OPs) and employers is necessary to allow full benefits of laparoscopic surgery.

Materials and Methods: We organised three focus group discussions with gynaecological patients to identify their needs regarding postoperative resumption of activities. A multidisciplinary expert panel developed recommendations for resumption of work activities. The care program is based on these results.

Results: We developed an interactive weblog for patients and care providers, which gives patients access to a personal web-based file to see their tailor-made pre- and postoperative detailed instructions on resumption of activities. The weblog also provides an instruction film and tools to improve self-empowerment, identify recovery problems and facilitates online communication. It improves the communication between patients, care providers and employers, preventing conflicting recommendations.

Discussion: The applicability, usefulness and effect of this innovative perioperative gynaecological care program, is currently studied in a Randomized Controlled Trial.

Key-words: gynaecological surgery, multidisciplinary perioperative care program, patient participation.

Free Communications 6_Imaging

FC6_1

Going straight to laparoscopic surgery - are multiple pre-operative laparoscopic scans necessary?

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Introduction: Pelvic pain is a common reason for referral to a gynaecologist. Repeated investigations are both costly and may not contribute to overall care.

Materials and Methods: Retrospective review of 240 referrals for pelvic pain to a tertiary centre. After clinical assessment patients had either diagnostic laparoscopy with consent for excisional surgery, avoiding the removal of organs or further imaging before surgery.

Results: On clinical assessment alone 28 (11.6%) cases out of the 240 did not require imaging. 212 (88.3%) women were investigated by ultrasound. 66 (31.1%) were normal and pelvic pathology was identified in 149 (70.2%). Further imaging (MRI or CT) was performed in 29 (13.6%) cases confirming pelvic pathology in 24 (96%) cases and normal in 5(4%) cases. All cases with pelvic pathology on imaging were treated laparoscopically. 8 (3.3%) procedures were converted because of difficult access or frozen pelvis. The 28 patients with no pre-operative imaging and 65 (98%) of the 66 cases with normal imaging also had treatment (i.e treatment to endometriosis and/or adhesiolysis). There was 1(.4%) negative laparoscopy out of 240.

Conclusions: Whilst pre-operative investigations either than ultrasound are important in planning for time, type of surgery and need for multidisciplinary input, we have demonstrated that the need for further investigations is limited and that surgical interventions should not be withheld in the presence of negative imaging and persistent symptoms.

Key-words: pelvic pain, imaging, laparoscopy.

FC6_2

Laparoscopic ovarian cystectomy and ultrasound diagnosis correlation

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Summary: Laparoscopy has been accepted as the gold standard treatment of benign ovarian tumors. The aim of

this study was to evaluate ovarian cysts management and diagnosis.

Introduction: Ovarian cysts diagnosis and removal is an important part of a gynecology department. There are still many difficulties in distinguishing a functional from an organic cyst.

Materials and Methods: Retrospective study of 93 patients with benign adnexal mass treated by laparoscopy at our institution during 2009. From this study group we obtained 106 laparoscopic ovarian cystectomies (80 unilateral ovarian cystectomy and 13 bilateral cystectomy).

Results: The mean age was 34.97 years old (SD±7.98) and clinical symptoms were present in 44 cases (41.5%). Ambulatory surgery represented 52.8% of our sample and 30 cases of ovarian cystectomies (28.3%) were undertaken by infertility unit. Histological diagnosis was: 32 endometriosic cysts (30.2%), 19 serous cystadenomas (17.9%), 17 cystic teratomas (16%), 17 mucinous cystadenoma (16%), 5 serous cysts (4.7%), 9 functional cysts (8.5%), 1 adenocarcinoma (0.9%), 1 para-ovarian cyst (0.9%), 5 non diagnosis. Two cases of laparotomy conversion occurred. Ultrasound—histological diagnosis concordance was 83%.

Discussion: We operated only 8.5% of functional ovarian cysts. Evaluation of surgical activity is extremely important in order to decrease unnecessary surgical operations, although it is impossible to reduce functional cyst removal rate to 0%.

Key-words: ovarian cysts, laparoscopic cystectomy, ultrasound diagnosis.

FC6_3

Localization of Essure® microinserts using 3D transabdominal ultrasound (US) after hysteroscopic sterilization

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Background: The main recommendation to confirm the position of the Essure® micro-insert device after hysteroscopic sterilization is by pelvic X-ray or HSG 3 months after the procedure. Previous studies have demonstrated that 3D transvaginal US can confirm satisfactory Essure® micro-inserts localization. In our study, we compared a new less invasive US technique (3D transabdominal ultrasound) to the 3D vaginal US to localize Essure® microinserts across the utero-tubal junction.

Objective: To evaluate transabdominal 3D US as a confirmation test to localize Essure® micro-inserts 3 months after ambulatory hysteroscopic sterilization.

Materials and Methods: This is a single center prospective cohort study concerning patients who underwent hysteroscopic Essure® sterilization. 42 patients were evaluated using 3D transvaginal and 3D transabdominal US (GE, Voluson E8) to determine the position of the Essure® coils across the utero-tubal junction 3 months after the procedure. Ultrasound controls were done by to operators using transvaginal and transabdominal approach. The two operators unaware of the operative data. Each operator ignores the ultrasound findings of the other operator. The distance between the proximal extremities of the coils was also measured using 3D abdominal ultrasound.

Results: 35 of the 42 patients were easily evaluated by the 3D transabdominal US. In thses 354 cases, the results were identical to those of 3D transvaginal US, showing proper positioning of the Essure® coils in 31 cases and inappropriate positioning in 4 cases. The mean distance between the two coils was 30.2 mm. Only 7 patients couldn't be evaluated by the transabdominal route; they all had a retroverted uterus and/or abdominal wall thickness, and were easily and properly assessed by transvaginal US.

Conclusions: transabdominal 3D ultrasound is an interesting new alternative technique to confirm proper placement of the Essure® microinserts. It's an easy and reproducible technique and could replace the 3D transvaginal ultrasound in many cases, especially if the technical conditions are favourable. This new technique is less invasive than 3D transvaginal US, pelvic X-Ray or HSG. Further studies are needed to confirm our results and validate transabdominal 3D US as a confirmation test after Essure® hysteroscopic tubal sterilization.

Key-words: Essure micro-inserts localization, 3D transabdominal ultrasound, new alternative technique.

FC6_4

3D ultrasound to assess the position of the tubal sterilization microinsert

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Summary: Three-dimensional ultrasound (3D-US) is a safe, accurate, and reproducible alternative to HSG as a confirmation test after Essure® placement.

Introduction: The aim of this study is to assess the accuracy of 3D-US to determine the position of Essure microinserts.

Materials and Methods: A retrospective observational study of 311 women who underwent hysteroscopic sterilization was conducted from October 2002 through October 2008 in our gynecology department. Both 3D-US and Pelvic X-ray were performed 3 months after the procedure to verify device position. Hystersalpingography (HSG) was performed when procedure was not fulfilled or when doubt

persisted after 3D-US or pelvic X-ray. The positions seen on 3D ultrasound were classified in four categories according to a specific.

Results: Procedure was fulfilled in 94.2% patients. Only 90.5% underwent imaging verification of the device 3 months after procedure. In all, 227 3D-US, 175 pelvic-X ray and 64 HSG were performed. Visualisation of the device with 3D-US was possible in 99.6%. According to our classification, for 195 (85.9 %) patients 3D-US was judged as appropriate. The need for HSG confirmation was significantly lower with 3D-US than pelvic X-ray (14.1% vs. 26.8%, p=0.001). None pregnancy or early expulsion occurred when devices were found to be in correct place with 3D-US.

Conclusions: 3D-US is a simple and reproducible technique to assess the position of the Essure® microinsert, even after an endometrial concomitant surgery and appears to protect most patients from the negative aspects of pelvic radiography and of HSG. Using the 3D-US classification presented here appears to make it possible to use HSG for back-up confirmation only when Essure® is found to be in the 3-only position on 3D-US.

Key-words: Essure® microinsert, hysteroscopic sterilization, three-dimensional ultrasound.

FC6_5

Essure® x-ray appearance five years later: a retrospective evaluation

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Objective: To evaluated Essure micro-insert appearance by X-ray evaluation after 5 years from insertion. *Design*: Retrospective study. *Setting*: Tertiary Centers for Women Health Care.

Patients: From the first insertion on September 2004, we identified 45 women (mean age 38 years) with successful hysteroscopic bilateral placement of the ESSURE devices. In all patients successful placement was evaluated by HSG confirmation test performed 3 months after insertion and, none of women become pregnant at 60 months follow up. A pelvic antero-posterior X-ray was again performed sixty months after Essure insertion by the same radiologist (CB) by using the same fluoroscopy table with digital spot films. Stability of Essure devices position, their symmetrical appearance and, the distance between the two devices were compared with the same details recorded at the time of 3 months follow up.

Measurements and Main Results: X-ray imaging after 5 years revealed that no detachment or fracture of the device occurred, with findings comparable to those obtained at the post-insertion 3 months follow up.

Conclusions: This is the first report on pelvic x-ray assessment of the Essure micro-inserts after so long time from the procedure. Our findings reveal that micro inserts of nickel-titanium alloy maintain their predetermined shape and are resistant to dislodgement for the stability of tissue ingrowth occurred following placement. Finally, the similarity between finings recorded 3 and 60 months post-insertion follow-up does outline the successful use of FDA protocol as a first line screening tool for correct placement of the ESSURE device 3 months after hysteroscopic sterilisation.

Key-words: essure, X-ray, follow up.

FC6_6

Pre-laparoscopy expert ultrasound of adnexal masses compared with CA125 and risk malignancy index (RMI) to predict malignancy: a four-year single institution analysis of 1302 cases

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In a tertiary referral center we evaluated the discriminative power of expert sonographic examination, serum CA 125 measurement and the risk malignancy index (RMI) as preoperative diagnostic tools. From 2002 to 2005, a total of 1302 explorative laparoscopies with the indication of an adnexal mass were performed in our department and included in this study. Preoperative work-up in all patients included a gynecological exam, an expert ultrasound scan, and a serum CA-125 measurement. Post-operative histopathological diagnosis was available in all cases and used as the reference standard to determine sensitivity and specificity for each approach. Additionally we calculated the diagnostic odds ratio (DOR) and Cohen's Kappa (kappa) as two auxiliary means for the discriminative power. Sonographic examination was highly accurate in the preoperative diagnosis of malignant lesions (DOR: 47.9, kappa: 0.46). In the

post-menopause, discriminative power could be further increased by adding a CA 125 serum measurement (DOR: 72, kappa: 0.6). In comparison, estimated values for DOR and kappa were markedly lower for the RMI in our patient's collective (13.29 and 0.35 respectively). The sole measurement of CA 125 as a preoperative strategy obtained the lowest values for DOR and (4.51) kappa (0.1). We conclude that pelvic sonography, conducted by a qualified examiner should be the core component in the preoperative work-up of all adnexal masses.

Key-words: laparoscopy, adnexal mass, diagnostic work-up.

FC6_7

3D sonohysterography in differential diagnosis of septate, bicornuate and arcuate uterus

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Introduction: To evaluate th diagnostic accuracy of 3D-SHG, 3D-TVS, 2D-TVS (initial TVS diagnosis and an expert TVS) and 2-D SHG in the differential diagnosis of septate, bicornuate and arcuate uteri.

Materials and Methods: 117 women with recurrent abortion or infertility and 2D-TVS initial diagnosis of septate, bicornuate or arcuate uterus. Diagnostics work-up comprised of initial 2D-TVS diagnosis , followed by 2D-TVS performed by experienced examiners, 3D-TVS, 2D-SHG and 3D-SHG.In order to assess the accuracy of these methods all the patients underwent hysterolaparoscopy (HL) to establish the final diagnosis.

Results: The 3D-SHG was found to be the best diagnostic method with an exact agreement with HL-obtained diagnosis.Other tools had a lower positive correlation (gamma index 3D-TVS 0.93, 2D-SHG 0.89, 2D-TVs by experted user 0.77, and initial 2D-TVS 0.48, all statistically significant $p<0.001$). All techniques, except initial 2D-TVS diagnosis was found to have the highest(100%) accuracy, sensitivity and specificity in detection of bicornuate uterus cases.Both, 2D-SHG and 3D-SHG were found to be better tools in detection of septate uterus (ACC100%). They were followed by 3D-TVS (ACC 97.5%). In diagnosis of arcuate uterus, after 3D-SHG the 3D-TVS was found to have the highest accuracy (96.2%).

Conclusions: 3D-SHg is the most accurate differentiation method of septate, bicornuate and arcuate uterus. It should be used in cases of ambiguous 3D-TVS results.2D-SHG is comparable to 3D-SHG in differentiation of septate uterus with bicornuate uterus and it may be used in order to verify 2D-TVS results that depend on the investigator's experience, especially when the access to 3D imaging technology is restricted.

Key-words: septate uterus, sonohysterography, 3D-transvaginal sonography.

Free Communications 7_Infertility and Reproductive Medicine

FC7_1

Results of laparoscopic tubal reconstructive surgery in the Hospital of Marrakesh, Morocco

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Introduction: Tubal disease is cause of infertility in 25 to 35 % of cases. Management include either IVF or reconstructive surgery. The development of IVF and improvement in pregnancy rates has reduced the indications for tubal reconstructive surgery. However, in developing countries cost of IVF is high and the majority of infertile couples cannot be offered this technique. So surgery can be a good alternative in selected cases.

Objective: To evaluate results of laparoscopic distal tubal reconstructive surgery.

Materials and Methods: retrospective study of patients with tubal disease associated infertility managed by laparoscopic surgery from January 2004 to October 2009 in the department of obstetrics and gynaecology, university hospital of Marrakesh. Among 142 patients undergoing laparoscopy, 51 patients underwent distal tubal reconstruction. Surgery was performed by 3 senior laparoscopists and fimbrioplasty or neosalpingostomy was performed.

Results: Among 142 patients with suspected tubal disease at medical history and hysterosalpingogram, 51 were eligible for reconstructive surgery. 35 patients underwent fimbrioplasty and 16 patients have had a neosalpingostomy. 18 pregnancies were accumulated (35%). There occur 4 ectopic pregnancies and 2 miscarriages. The life birth rate was 23%. There were no pregnancy in patients with tubal score IV and 80% of pregnancies were observed in patients with I and II tubal score.

Conclusion: Tubal reconstructive surgery can be a good alternative to IVF in infertile patients with moderate tubal disease in reduced economic resources areas.

Key-words: tubal infertility, reconstructive surgery, laparoscopy.

FC7_2

PCOS—A weighty problem. Does bariatric surgery have the answer?

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Summary: The association of obesity with infertility and PCOS has been well established. A retrospective analysis of morbidly obese patients with PCOS shows a marked improvement in assessed parameters of fertility after bariatric surgery, suggesting a possible primary treatment modality for PCOS.
Introduction: Morbid obesity is now achieving epidemic proportions throughout the world, and consequently a larger number of female patients in the reproductive age group are seeking bariatric surgery. While the role of bariatric surgery in controlling or even completely resolving obesity related co-morbidities such as diabetes, hypertension, sleep apnea, etc has been well established, the effect of weight loss through bariatric surgery on fertility and childbirth outcomes has not yet been fully demonstrated.
Materials and Methods: A retrospective analysis of data from 187 patients of morbid obesity operated by a single bariatric team from 2007 to 2010, revealed 33 female patients under the age of 45. Of these, 14 patients had documented PCOS as per Rotterdam Criteria, with 5 of them having previously taken infertility treatment.
Results: All patients showed improvements in one or more of the assessed parameters for PCOS—oligo or anovulation, hirsutism, acne, free testosterone levels and fasting insulin levels. 3 patients in the PCOS group conceived after surgery.
Discussion: Bariatric surgery is not so much a treatment aimed at achieving weight loss as it is a treatment for metabolic disturbance.There is clear evidence of improved outcomes in fertility and reduced risk of pregnancy related complications after bariatric surgery and weight loss. We suggest that there is a case for considering bariatric surgery for treatment of morbidly obese patients with PCOS.
Key-words: PCOS, infertility, bariatric surgery.

FC7_3

Laparoscopic management of ectopic pregnancy during a 9 year period

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Background: Ectopic pregnancy (EP) occurs in approximately 2% of all pregnancies and is leading cause of first trimester maternal death. Its incidence has increased sixfold in the past 25 years, despite significant improvements in techniques for early diagnosis and management. We analysed the epidemiology and outcome of ectopic pregnancy (EP) during a 9 year period on a total of 473 women.
Materials and Methods: Data regarding gynecological anamnesis, previous pelvic inflammation, previous genital infections, previous gynecological pelvic/abdominal surgery, past infertility and use of contraceptives were compiled from the medical records. Moreover, data regarding clinical signs, transvaginal sonographic findings, β-human chorionic gonadotropin, (β-hCG) values, duration of the operation, postoperative complications and duration of hospital stay were recorded.
Results: In 98.3% a laparoscopic operation was performed; only 1.7% received methotrexate up-front. Most patients (84.9%) underwent linear salpingostomy. Laparoconversion was not needed to be performed. After a time period up to 9 years, 61% of patients were found for follow-up and interviewed about reproductive events, recurrence of EP, pregnancies achieved and infertility treatment by telephone. Six patients (2%) had again an EP on the operated site; all received salpingotomy. Eight patients had an EP on the opposite side (2.7%). 208 patients tried to become pregnant; 91/289 (31.5%) became pregnant. 31 patients needed help of reproductive medicine and had received IVF or ICSI.
Conclusions: Our follow up of 473 patients shows that laparoscopic salpingostomy is a safe and effective treatment for ectopic pregnancy.
Key-words: ectopic pregnancy, laparoscopic salpingostomy, follow-up.

FC7_4

Pregnancy following laparoscopic ovarian drilling in PCOD

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Summary: Polycystic ovary syndrome is often associated with infertility. Some case can be resistant to every type of drugs and in these cases it's very important the role of laparoscopy to perform the ovarian drilling, a safe technique, with less trauma and fewer post-operative adhesions than by classic surgery, resulted in good ovulatory and pregnancy rates.
Introduction: Polycystic ovary syndrome is a common gynaecologic endocrine disorder, defined as the presence of oligo-anovulation in combination with hyperandrogenism. Hyperandrogenism can be diagnosed either by clinical

(hirsutism) or laboratory (elevated testosterone or androstenedione) criteria. Polycystic ovary disease (PCOD) is caused by a neuroendocrine abnormality that results in increased pulse frequency of hypothalamic gonadotropin-releasing hormone secretion. Almost all women with PCOD have elevated LH secretion. Infertility due to chronic anovulation is the most common reason for women seeking counselling or treatment. Many treatment protocols, surgical and medical, have been recommended to control PCOD. The drug of first choice for inducing ovulation is clomiphene citrate, taken orally, although 20% of women given clomiphene citrate fail to ovulate. Ovulation induction with gonadotrophins is well established in patients resistant to clomiphene citrate, but extensive monitoring is necessary because of the high sensitivity of polycystic ovaries to exogenous gonadotrophins, with the risk of multiple follicle development leading to termination of the cycle, ovarian hyperstimulation syndrome, or multiple pregnancy. Another therapeutic option is metformin, expecially for women with highnbody mass index. Bilateral ovarian wedge resection was the first established surgical procedure for anovulatory PCOD women. However, it came into disrepute because of the risk of postoperative adhesion formation with subsequent mechanical subfertility. Laparoscopic drilling of the ovaries is an alternative treatment for patients with clomiphene citrate resistant polycystic ovary syndrome. This involves a single procedure, which has minimal morbidity, which can lead to consecutive ovulations with minimal risks of multiple pregnancy. Recent studies have shown that patients who don't respond to metformin or who have intolerance can receive good result from the laparoscopic ovarian drilling.

Materials and Methods: Our patient came to us because of the sterility. She was married from 4 years and she always was affected from menstrual irregularities. She had a history of hyperprolattinaemia and for this reason she took cabergoline 1 mg/die only for 3 months, then she stopped because of the blurred vision. During the 3 years after her marriage she made 3 targeted intercourses and then 3 inseminations without any pregnancy or abortion. Then she came to us and we immediately performed blood exams, hormonal exams at the 3rdday and at the 21st day of her menstrual cycle, a transvaginal echography, diagnostic hysteroscopy and sonography. Hormonal exams at the 3rd day showed a little hyperprolattinaemia (51,8 ng/ml), LH/FSH >1 (LH was 8,1 mUI/ml and FSH was 5,5 mUI/ml) and a little hyperandrogenaemia. At the 21st day she had hypoprogesteronaemia (0,92 ng/ml) typical of an anovulatory cycle. Ultrasounds showed a normal uterus but both of the ovaries were polycystic, with multiple little follicles under the cortical part of the ovaries placed like crown rosary an hyperechogenicity of the medullary part. This ultrasonographyc data and the results of the hormonal exams were typical of the PCOD. Hysteroscopy showed a normal uterine cavity and sonography showed a regular passage of the contrast through the tubes to the Douglas. So, this women had an anovulatory sterility due to the PCOD. We started to treat this women with metformin (850 mg twice daily) but she stopped the treatment because of the diarrhea and abdominal discomfort. So, we tought to address the couple to IVF but before this we decided to perform laparoscopy as therapy for the PCOD. New studies have shown that although metformin results in a better attenuation of insulin resistance, laparoscopic ovarian drilling is associated with higher rates of ovulation and pregnancy. Laparoscopy is performed under general anesthesia with endotracheal intubation. 10 mm laparoscope is introduced through umbilical scar. We saw a normal uterus and normal fallopian tubes. There were a lot of adhesions between left ovary and salpynx. We made adhesiolysis. Both of the ovaries were enlarged with a smooth-thickened capsule, their main diameter was like the diameter of the fundus of the uterus, they were pearly white, typically like PCOD. We made ovarian drilling, making some hole to the face of the ovaries to let the liquor folliculi going out. The technique of ovarian drilling is to destroy (cauterize) the testosterone producing tissue of the ovary. Usually the small follicles visible on the surface of the ovary are chosen as the spots to direct the electrical or laser energy, because presumably this is where hormone production is maximal. From 4–20 "holes" can be made in each ovary, in the antimesenteric surface, usually 3 millimeters wide and 3 millimeters deep. The same procedure was applied to the other ovary. A monoplar electrocautery current at a 30-W power is used for 4 seconds. No coagulation was done within 10 mm of the hilum to avoid bleeding or permanent reduction of the ovarian supply. Many physicians try to make the areas of cautery as far away from the fallopian tube as possible to try to limit the chance of tubal scarring. Others will wrap the ovaries with dissolvable materials that inhibit scar formation. Despite these efforts, adhesions around the tubes and ovaries can occur, but tend to be milder than with the classic BOWR, and do not appear to effect pregnancy rates. Rarely the ovaries can undergo irreparable damage and cease to function (atrophy). After drilling we performed salpingocromoscopia and we saw the spreading of methylene blue from the fallopian tubes to the pouch of Douglas. The month after the drilling the women came back pregnant. The success rates for laparoscopic ovarian drilling appear to be better for patients at or near their ideal body weight, as opposed to those with obesity. Over a dozen studies have been published

with success rates for ovulation between 53% and 92%. Success rates may be slightly higher with electrical energy (which tends to destroy more tissue), but the laser may lead to fewer adhesions. Patients with decreases in hormone production (testosterone and luteinizing hormone) are more likely to ovulate and achieve pregnancy than those without hormonal improvement.

Results: Mechanism of action of this surgical procedure in PCOD is still mysterious. Stein Levental proposed bilateral wedge resection as a method of choice for the induction of ovulation in clomiphene resistant PCOD. He explained that it decreases the mechanical crowding of the cortex by cysts which can enable the process of normal graffian follicle movement to the surface of the ovary. Gjonness in his study postulated that ovulation is either by non specific stromal cause or extensive capsular destruction with the discharge of contents of a number of follicular cysts or the local capsule of one specific but unidentified capsule. Ammer J Banee followed the patient long time after LOD. They found lowered FSH/LH ratio, LH and androgen level. This endocrine changes seem to last for longer period up to 9 yrs. They confirmed that these changes are produced by LOD rather than advancing age. Since the concentration of LH and androgen were lower than those of comparison group at corresponding period of LH. They reported decreasing serum androgen levels with increasing number of years after LOD possibly due to advancing age .Similar trends were seen in the comparison group. This indicates the safety of the procedure. Hamed et al compare the hormonal-metabolic profiles and reproductive outcomes in clomiphene-resistant patients with polycystic ovary syndrome and insulin resistance between women receiving metformin and those undergoing laparoscopic ovarian drilling and they saw that although metformin results in a better attenuation of insulin resistance, laparoscopic ovarian drilling is associated with higher rates of ovulation and pregnancy.

Discussion: Laparoscopic ovarian drilling is a minimally invasive, safe procedure. It has significant advantages. A single treatment results in uni follicular ovulation. Women can lead normal life without intensive monitoring. It is free of risks of multiple pregnancy and ovarian hyper stimulation. The success rates for laparoscopic ovarian drilling appear to be better for patients at or near their ideal body weight, as opposed to those with obesity and it's fundamental for women who cannot use metformin or who are resistant to it. Over a dozen studies have been published with success rates for ovulation between 53% and 92%. Success rates may be slightly higher with electrical energy (which tends to destroy more tissue), but the laser may lead to fewer adhesions. Patients with decreases in hormone production (testosterone and luteinizing hormone) are more likely to ovulate and achieve pregnancy than those without hormonal improvement.

Key-words: laparoscopy, PCOD, sterility.

FC7_5

The role of acute inflammation at the peritoneal cavity-enhanced adhesion formation

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Summary: The strong correlation between adhesion score and acute inflammation in the peritoneal cavity suggests that acute inflammation is an important driving mechanism enhancing adhesion formation.

Objective: To investigate the relationship between adhesion formation and acute inflammation in the entire peritoneal cavity.

Design: Prospective randomized, controlled trial. In our laparoscopic mouse model acute inflammation of the peritoneal cavity and adhesion formation were evaluated in a control group in CO2 pneumoperitoneum (PP)-enhanced adhesions, in CO2 PP plus manipulation-enhanced adhesions and in the latter group + dexamethasone-reduced adhesions. Adhesions and acute inflammation was assessed by neoangiogenesis, diapedesis and leukocytes accumulation on the 2nd day after surgery.

Results: Adhesions were enhanced by the CO2 pneumoperitoneum ($p=0.007$), further enhanced by manipulation ($p<0.0001$ versus CO2 PP) and decreased by the administration of dexamethasone ($p<0.0001$ versus CO2 PP+ manipulation). Acute inflammation scores strongly correlated with total adhesion score whether assessed as total inflammation score ($p<0.0001$) or as neoangiogenesis ($p<0.0002$), diapedesis ($p<0.03$) or leukocyte accumulation ($p<0.0002$). Inflammation scores, moreover, were strikingly similar at the surgical lesion and at the parietal peritoneum.

Discussion: In the process of adhesion formation acute inflammation of the peritoneal cavity could be quantitatively the most important factor. Since it was demonstrated that dexamethasone produces its anti-inflammatory effect by inducing the expression of mitogen-activated protein kinase phosphatase-1, we postulate that this pathway could be involved in the adhesion formation process. These data strongly suggests that acute inflammation in the entire peritoneum cavity is the driving mechanism of adhesion formation at the lesion site. In addition, metalloproteasis may play an important role being a link between the two processes.

Key-words: adhesions, laparoscopy, acute inflammation.

FC7_6

Conservative surgery versus methotrexate® therapy in ectopic pregnancy: a randomized trial

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Objectives: Therapeutic options for women with ectopic pregnancy are radical surgery, conservative surgery and medical treatment. The previous studies which compared conservative treatments (methotrexate® therapy and salpingostomy) did not ended in consensual guidelines, likely because of too small sample sizes. The objective of the randomized trial Demeter was to compare their efficiency with an appropriate statistical power.
Materials and Methods: Ectopic pregnancies that may be treated medically (Fernandez's score lower than 13), were randomly allocated to surgery (salpingotomy with a postoperative injection of methotrexate®) or to medical therapy (methotrexate® injection and reinjection when needed). Immediate failure, defined as needing surgery in the medical group and as needing either reinjection of methotrexate® or second surgery (including initial salpingectomy) in the surgical group, was compared between the two groups.
Results: One hundred ninety patients were included: surgery (n=88) and medical therapy (n=102). Immediate failure rate was significantly higher with methotrexate® than with surgery (0.25 versus 0.09) ($p<0.01$).
Conclusions: Surgery is more effective than single dose methotrexate® in term of immediate treatment success. Medical therapy still got indications because of its greater acceptability to patients, its minimally invasive nature and its low cost. Moreover, indications of these two treatments have to be revisited with results on subsequent fertility.
Key-words: ectopic pregnancy, methotrexate therapy, conservative surgery.

FC7_7

The chance for a successful isthmo-neovagina anastomosis after Davidov's neovagina formation

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Aim of the study: To present the feasibility of isthmo-neovagina anastomosis in cases of rudimentary uterine horn, secondary to Davidov neovagina formation.
Patients and Methods: Seven women with Mayer-Rokitansky-Kuster-Hauser syndrome (MRKH) evaluated in the 1st department of Obs and Gynae, between 2006 and 2010. Their presenting symptoms were mainly, no menses (primary amenorrhea) and inability for vaginal sexual intercourse. Clinical investigation included a detailed medical history, hormonal profile, ultrasound pelvic exam, MRI, karyotyping and intravenous pyelography. Finally the diagnosis was set by clinical examination and laparoscopic exploration which revealed normal ovaries and uterine remnants. In one of them a rudimentary uterine horn with functional cavity was present. In this case, after the initial procedure leading to the neovagina formation, an isthmo-neovagina anastomosis was undertaken. Three weeks later, this woman experienced her first menses and she continued normally afterwards.
Results: All cases were successfully managed applying Davidov's technique, which is a combined laparoscopic-perineal method for neovagina formation using part of the pelvic peritoneum. Follow up in all patients revealed a fully functional neovagina of six to 10 cm in length, without any presence of fibrotic tissue. In one of our cases, a uterine rudimentary horn with the presence of a significant amount of endometrial tissue was recognized in the MRI. A successful anastomosis of this horn with the previous formed neovagina, by laparotomy, gave the opportunity to the patient to experience almost normal menses.
Conclusions: Davidov's technique accounts as a valuable solution for neovagina formation. In addition it gives the chance for isthmo-neovagina anastomosis in cases of uterine functional rudimentary horns and the opportunity for menstruation. These seem to contribute positively to patients self estimation and sexuality. An interesting question if this is enough for achieving a pregnancy still remains and has to be answered in the future.
Key-words: Davidov's technique, neovagina formation, isthmo-neovagina anastomosis.

FC7_8

Which protocol for which patient in IVF and reproduction

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Although a lot of effort (medical and commmercial) has been invested into the development of GnRH antagonists, the compairison to the GnRH agonists shows no substantial benefit to the newly developed antagonists. The higher

fresh pregnancy rate and more eggs for cryopreservation of so called "long agonost protocols", due to the synchronization of oocyte development, combined with a lower drug expense and convinience of use and lower rate of OHSS in the so called " short agonist protocols" are futher arguments for their usage. The lack of negative impact on the endometrium and implantation even in cycles pretryted by oral contraceptives are futher arguments in favor of agonists. In Germany more than 94% of all prescriptions in IVF-cycles are GnRH -agonist-prescriptions. Additionally,agonists offers advantage in the treatment of endometriosis in so called "draw back" regimens,this expending the estrogen " back-up" therapy and alleviating side effects of the estrogen deprivation. The same is valid to the treatment of fibroids by GnRH agonists.

Key-words: GnRH agonists/antagonists in IVF, short and long protocols, endometriosis.

FC7_9

In vitro fertilization after laparoscopic surgery of endometriosis

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Introduction: Endometriosis is nowadays probably the most frequent cause of female infertility and is diagnosed in nearly 40% of infertile patients. Treatment of choice is by all means laparoscopic surgery which leads to 60 % pregnancy rate, regardless the extent of the disease. For the rest of the patients in vitro fertilization (IVF) is the most appropriate treatment of choice. The present study was designed to clarify if endometriosis impairs IVF outcome.
Materials and Methods: In 96 patients (group A), underwent IVF program, the only known cause of infertility was endometriosis which had been previously surgically treated. Sixty two (64.6%) patients had minimal or mild stage of endometriosis according to the revised American Fertility Society classification, whereas 34 (35.4%) had moderate or severe disease. The control group (group B) represents 305 patients who underwent IVF procedure due to tubo-peritoneal or idiopatic cause of infertility. The inclusion criteria for the study were age less than 37 years, regular ovulatory cycles, normal basal gonadotrophin level and normal partner's semen finding. Among other parameters pregnancy rate per cycle and per ET were analyzed.
Results: In none of the compared parameters statistically significance was reached. In the group "A" pregnancy rate per cycle and per ET was 41.7% and 50.1% compared to the group "B" where was 36.4% and 40.5% respectively. Pregnancy rate per cycle in patients with stage I and II endometriosis was 40.3% and in patients with stage III and IV 44.1%.
Discussion: Endometriosis does not impair IVF outcome. Pregnancy rate is even higher, though not statistically significant, than in patients with tubo-peritoneal or unknown cause of infertility.

Key-words: endometriosis, surgery, IVF.

FC7_10

Analysis of reproductive outcome on 229 cases of myoma with infertility treated by hysteroscopy and laparoscopy

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Summary: For infertile women with submucous myoma it should be receive TCRM regardless of size, location and type of myoma. For infertile women with subserosal and/or intramural myoma TLM can be done if infertility had proceed for 2~3 years or had the history of spontaneous abortion, miscarriage and premature delivery.
Introduction: This article is to discuss the influence factors of improvement the pregnancy rate for infertile women with myoma treated by hysteroscopy and laparoscopy.
Material and Methods: Retrospective analysis of 229 cases infertile women with myoma treated endoscopically. Patients age was<40 yrs and suffered from infertility< 1 year. Other factors of infertility had excepted. After surgery follow-up proceed for 2 years.
Results: There were 131 cases of TCRM, 96 cases of TLM, 2 cases of TCRM + TLM. After TCRM the pregnancy rate was improved and spontaneous abortion rate decreased significantly. The reproductive prognosis improved significantly after TCRM of single myoma. Pregnancy rate after TLM increased and spontaneous abortion rate decreased, but no statistical differences. The reproductive prognosis improved significantly after TLM of large intramural myoma (≥7 cm) compared with smaller intramural myoma.
Discussion: Submucous myoma reduces the pregnancy rates and increased the abortion rate. For infertile women with submucous myoma it should be receive TCRM surgery to improve their fertility ability. For infertile women with subserosal and/or intramural myoma TLM can be done if infertility had proceed for 2~3 years or had

the history of spontaneous abortion, miscarriage and premature delivery.

Key-words: infertile women, myoma, hysteroscopy and laparoscopy.

Free Communications 8_Innovation in Surgery

FC8_1

Laparoscopic management of large ovarian cysts

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Aim: The aim of our study was to describe a new technique for laparoscopic removal of large ovarian cystic masses.

Materials and Methods: We performed a retrospective study during the period from January 2008 to December 2009 in the Second Department of Obstetrics and Gynecology of Aretaieion University Hospital of Athens. Nineteen women with large ovarian cysts were included in the study. The surgical technique and the clinicopathological findings are reported.

Results: During our study period 53 women underwent laparoscopic excision of ovarian cysts. Among those women 19 had very large complex ovarian cysts with a mean diameter of 8.4 cm (range 7–15 cm). Mean age of the patients was 32.1 years (range 16–47 years). Ultrasound examination revealed findings suggestive of benign disease in all patients. In 8 out of 19 patients CA-125 levels were elevated ranging from 40.5 IU/ml to 194.7 IU/ml. The procedure included a direct insertion of a 5 mm supra-pubic trocar, directly within the cyst, and aspiration of the fluid contents so the remaining of the cyst could fit in a 5 cm laparoscopic bag. The cyst wall was carefully detached from the healthy ovarian tissue and placed in the bag with out any spillage. The remaining of the cyst wall was removed from the peritoneal cavity with the laparoscopic bag. Mean operative time was 45 min (range 35–60 min). No operative or post-operative complications were described. None of those patients converted to laparotomy. Mean hospital stay was 1 day. Pathology revealed 7 endometriomas, 3 mucinous cystadenomas, 3 serous cystadenomas, 3 serous cysts and 3 teratomas.

Conclusions: Direct trocar insertion within the ovarian cyst followed by aspiration is a safe and feasible method for the laparoscopic management of large ovarian cysts (>7 cm in diameter).

Key-words: ovarian masses, trocar, direct insertion.

FC8_2

Novasure impedance controlled system for endometrial ablation: the experience of the first Greek centre

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Introduction: To assess the efficacy and safety of the NovaSure endometrial ablation system in women with severe dysfunctional uterine bleeding (DUB).

Materials and Methods: Twenty-three premenopausal women, aged from 36 to 49 years old (mean age 44.7), with severe menorrhagia due to DUB, unresponsive to medical therapy, were subjected to endometrial ablation with Novasure impendence-controlled system. Endometrial pretreatment, although not necessary, was performed with administration of GnRH-a for 3 months. All women completed 12 months of follow-up.

Results: No intra-operative adverse events reported. Novasure system was effective in reducing excessive blood loss in all women. Amenorrhoea rates reported to be 78%, while only one woman presented with menorrhagia in her annual follow-up, although her menstrual blood loss measured significantly reduced. All women were satisfied with the procedure.

Discussion: Novasure system is effective and safe in treating women with DUB. Pretreatment with GnRH-a seems to improve significantly amenorrhoea rates.

Key-words: dysfunctional uterine bleeding, menorrhagia, novasure

FC8_3

Post-operative recovery after NOTES (transgastric, transcolonic and transvaginal) versus laparoscopy. A prospective and comparative study in a survival porcine model

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Introduction: Although early reports of NOTES used transgastric access, other potential accesses to the abdominal cavity have been explored. This study evaluates the post-operative recovery after transgastric NOTES (TG),

transcolonic NOTES (TC), transvaginal NOTES (TV) and laparoscopy (Lap).

Methods: 40 adult Yorkshire pigs were assigned to one of four arms: TG, TC, TV and Lap. Animals were kept NPO for 24 hours prior to procedure and pre and post-op antibiotics administered. Anti-septic technique was utilized in TG, TC and TV access whereas Lap was performed in sterile conditions. Timed abdominal exploration was performed (30 min) with identification of pre-determined organs. Blood samples were drawn pre and post-operatively for IL-6, IL-1beta, alfaTNF (6 h, 8 h, 24 h, 48 h, 72 h and 7 days) and microbiological analysis (inmediately after surgery and 72 h). Peritoneal fluid was collected during surgery if present. Animals were survived for 14 days. Animals were checked daily and respiratory rate was monitored during 2 days. Upon necropsy animals were weighted, adequacy of closure and degree of adhesions were evaluated and interleukin analysis and cultures were performed.

Results: At the time of the analysis, 36 animals were included: 10 TG, 10 TC, 7 TV and 9 Lap. Mean time for procedure was larger in all NOTES groups (64 min, 50, 57) than in Lap (33, $p<0.001$) and it was related to larger incision and closure times. 35 animals completed follow-up but one had to be sacrificed after the surgery due to bleeding. Mean number of organs identified was no different (5.9, 5.7, 6.7 and 6.3; p=ns). 32/35 animals gained weight (3.2 kg, 2.7, 4.4, 3.1; p=ns) and 34/35 had a good recovery. The mean number of complications (including surgical and post-op) were 7, 2, 3 and 3 (p=ns). Despite, the anti-septic or sterile technique, almost all animals had positive cultures at any time (10, 9, 7, 9; p=ns) but they had no clinical signs of infection. At necropsy, adhesions were seen in 3, 5, 1 and 1 (p=ns). Interleukin analysis in blood and peritoneal fluid showed no statistical significance between access techniques at any time. Interleukin levels were not related with the presence of adhesions nor positive cultures.

Conclusions: NOTES peritoneal exploration is comparable to laparoscopy in terms of recovery, infectious complications and inflammatory impact.

Key-words: NOTES, pigs, post-operative.

FC8_4

Impact of intraperitoneal pressure and duration of surgery on peritoneal fibrinolytic system during laparoscopic surgery

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Introduction: This study investigated the impact of intraperitoneal pressure (IPP) and duration of a CO2 pneumoperitoneum on peritoneal fibrynolytic system.

Materials and Methods: Human study: Patients were divided into two groups: low (8 mmHg) or high (12 mmHg) IPP. Macroscopically normal peritoneum was collected at the beginning and each 60 min afterward. Mouse study: Mice were divided into three groups: low (2 mmHg) or high (8 mmHg) IPP, or laparotomy. A laparotomy was performed to collect peritoneal tissue at 0, 4, 8, 24, 48, 72 hours, 5 and 7 days after surgery. Real-time RT-PCR was performed to measure expression levels of tissue plasminogen activator (tPA) and plasminogen activator inhibitor-1 (PAI-1) mRNA in peritoneal tissues.

Results: Human study: tPA/PAI-1 mRNA ratio at 1 hour was significantly decreased in the 12 mmHg group, whereas no significant decrease was detected in the 8 mmHg group. tPA/PAI-1 mRNA ratio was significantly decreased in both groups at 2 hour. tPA/PAI-1 mRNA ratio was significantly lower in the 12 mmHg group compared to that of the 8 mmHg group. Mouse study: tPA/PAI-1 ratio after CO2 pneumoperitoneum at a high IPP was significantly decreased up to 24 hours. There was no significant difference in the low IPP group during the first 7 days after surgery.

Conclusions: A low intraperitoneal pressure might have minimal impact on fibrinolytic system during a CO2 pneumoperitoneum.

Key-words: peritoneum, CO2 pneumoperitoneum, intraperitoneal pressure.

FC8_5

Total hysterectomy by mini-laparotomy (using Vacuum Extractor)

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After our 5 year experience in using vacuum extractor as atraumatic manipulator of the uterus body we think that this is an expensive safe and easy Minimally invasive method to perform Hysterectomy by mini-laparotomy. The patients needed less postoperative analgesia in cases we used Alexis retractor. We also found that we could use it as an laparoscopic port.

Introduction: The object of this study is to assess the feasibility and surgical outcome of total Hysterectomy by mini-laparotomy.

Materials and Methods: During the last 5 years 213 patients age 51 (43–68), without any suspicious of malignancy, underwent Hysterectomy with or without oophorectomy by mini-laparotomy. We made a 4–6 cm lower transverse incision using Alexis retractor. In order to manipulate atraumatic the uterus we used a Ventouse (vacuum extractor) Kiwi. In cases

of ovarian cysts we used a 10 mm laparoscope and we rotate the Alexis retractor so that be enclosed a 11 mm trocar. Retaining the abdominal gas pressure we had the opportunity to examine the rest of the pelvis- abdomen. In 14 cases we had to enlarge the incision at once.

Results: The average operative time was 73 (38–117) min and the estimated blood loss was 240 ml. There was no major complication, no vaginal cuff seroma or hematoma and the average hospitalization was 2.8 days after the operation. The catheter was removed 24 hours after the operation.

Discussion: This method seems to be an easy, inexpensive Minimally invasive method. The vacuum extractor gives us the advantage to extract the most of the uterus out of the surgical wound and that makes the operation safer (better knots, avoidance of ureter-bowel-bladder trauma).The "trick" to transform the Alexis retractor in a laparoscopic port gives the opportunity to laparoscopically inspect the whole pelvis.

Key-words: mini laparotomy, hysterectomy, ventouse (Vavuum Extractor).

FC8_6

Sprayshield System, results from a Usa Ide Pilot Study for the reduction of postoperative adhesions at laparoscopy

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Objective: The SprayShieldTM adhesion barrier system consists of two solutions, a polyethylene glycol (PEG) ester amine solution and a buffer solution that, when sprayed together on the tissue, polymerize to form an absorbable hydrogel *in situ*. This flexible barrier adheres to tissue and keeps raw surfaces separate from each other for 2-7 days, which may allow tissues to heal independently and with less adhesions. In this pilot study we assessed the safety and efficacy of the SprayShield system in reducing postoperative adhesion formation after initial laparoscopic adhesiolysis.

Design: Multicenter, prospectively, randomized, reviewer-blinded study, approved by IRB *Materials and Methods*: Women undergoing laparoscopic surgery for adnexal adhesiolysis (FLL) were randomized at the end of the procedure to either the treatment (n = 14) or to the control group (n = 7). Patients from both groups returned for second look laparoscopy (SLL) 2-4 weeks later. Adhesions were scored using the revised AFS system by a blinded reviewer at first (FLL) and second (SLL) look laparoscopy and compared.

Results: Participants were similar for age, parity, BMI and pelvic pathology at FLL. No adverse events were associated with the SprayShield system and the postoperative course was uneventful for both groups. The percentage changes in mean adhesion scores for all peritoneal sites were significantly lower in the study (- 6.7%) than the control group (9.3%); p-value = 0.009 (general estimating equations analysis testing for differences in means).

Conclusion: The laparoscopic application of SprayShield following adhesiolysis was associated with statistically significant reduction in postoperative adhesion re-formation and an encouraging safety profile. Further evaluation is warranted.

Key-words: adhesions, second look laparoscopy, SprayShield.

Free Communications 9_Myomectomy

FC9_1

Presurgical evaluation of hysteroscopic myomectomy: which classification shall we use?

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Introduction: Hysteroscopic resection is the gold standard for the treatment of submucous myomas especially when an adequate selection of patients is made. These concerns have led to the development of several presurgical classification systems of submucous myomas, in order to predict the degree of technical difficulty in carrying out the myomectomy.

Materials and Methods: A retrospective study was performed of all the hysteroscopic myomectomies realized in our outpatient clinic during a 7-year period. Presurgical data of the myomas were recorded and they were classified according to Wamsteker's (WaC) and Lasmar's (LC) classifications. Post-operative results were analysed according to each classification.

Results: 114 patients were submitted to hysteroscopic myomectomy in our outpatient department during this 7-year period. According to WaC 80.7% were type 0 myomas and 19.3% were type 1; myoma's mean size was 17.8 mm (6–41 mm). According to LC 73.7% were group I myomas (score 0–4), 25.4% were group II (score 5–6) and 0.9% was group III (score≥7). One-step excision was achieved in 88.6% of patients, with a false positive rate of 13.2% for WaC and 14.9% for LC. Due to persistence of symptoms 8 patients needed a second hysteroscopic myomectomy (100% of the myomas were group II or III according to LC, while only 62.5% were type I according to WaC) and 5 were posteriorly submitted to hysterectomy (100% of the myomas were group II according to LC, while only 40% were type I according to WaC).

Discussion: Our data suggests that even if Lasmar's classification yields a higher rate of false positives (myomectomies thought to be more difficult than they eventually turn out), it is more efficient to predict high-difficulty myomectomies.

Key-words: myomectomy, classification, Lasmar.

FC9_3

Laparoscopic myomectomy: how to improve functional results?

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Myomectomy often performed in women of reproductive age to save their reproductive function.The most important criteria of functional results—to save uterus as an organ.
Objective: 5-year retrospective analysis of conservative myomectomy to improve functional results of the operations.
Materials and Methods: During 2005–2009 years we performed 532 conservative myomectomy operations. Abdominal approach were used in 37 cases, laparoscopic—in 390, hysteroscopic—in 69, vaginal—in 13, combined (with the application of a laparoscopic of some other access)—in 23 cases.
Results: We used electrosurgical instruments (monopolar and bipolar), harmonic scalpel, anti-adhesions barriers. Intra- and extracorporal knots application technique we applied in 70 % of cases. The maximum number of myomas ablated at a time was 14, while the f a myoma was 15 cm. In 43 cases, before the surgery, agonists of gonadotropin releasing hormone were administrated to decrease a myoma size. The surgeries lasted from 45 to 120 minutes. Myomas be evacuated through the posterior colpotomic aperture or by transabdominal morcellation. The main complications include 2 cases of haematoma, 1 case of pelvic inflammatory disease. The pregnancy rate was 34% from all patients and 83% from patients who desire pregnancy.
Conclusion: For best results myomectomy should be performed by high volume surgeons with precise operative technique. Preoperational diagnostic of myoma type, number, size and localization may be very useful for improving functional results of myomectomy.
Key-words: laparoscopic myomectomy, functional results.

FC9_4

Postoperative outcome after abdominal and laparoscopic myomectomy

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Introduction: Uterine fibroids are the most common benign tumor in women, and the treatment is mainly surgical with myomectomy or hysterectomy. Previous studies have not focused on relief of symptoms postoperatively. Thus, the aims of this retrospective study were to analyze the clinical outcome after myomectomy, in terms of improvement in abnormal vaginal bleeding, periodic blood loss, pelvic pain and fertility.
Material & Methods: All women who were treated by myomectomy at the Department of Gynaecology, Oslo University Hospital Ullevål, in the period from 01.01.2003 till 31.12.2006, were sent a questionnaire.
Results: A total of 233 women were identified as having had a myomectomy in this period, with a 70% response rate. 82% reported to suffer from pain scored on a 10-point visual analog scale (VAS) preoperatively, with a mean score of 5.0 (SD 2.9). Postoperatively this was significantly reduced with mean score 3.0 (2.8) (mean difference 2.0 (SD 3.0), 95% CI: 1.5, 2.5 $p<0.001$). There was also significantly reduced amount of days with bleeding (preoperatively 5.9 (SD2.2) and postoperatively 4.9 (SD1.8), with mean difference 1.1 (SD 2.2) 95% CI: 0.7,1.5 $p<0.001$), and degree of bother due to bleeding (preoperatively score on VAS scale 5.3 (SD 2.6), postoperatively score 3.3 (SD 2.6), mean difference 1.9 (SD 3.2) 95% CI: 1.3,2.5 $p<0.001$). 31 % stated infertility as reason for the myomectomy. In this group there was a postoperatively pregnancy rate of 52% in the observational period.
Discussion: This is the first retrospective study to report long-term outcomes after laparoscopic and abdominal myomectomy. The results imply significant improvements regarding periodic pain and bleeding. The data was collected retrospectively, and there is a need for comparative studies with a control group to provide more certain data of the clinical outcome of this common gynaecological surgical procedure.
Key-words: myomectomy, pain, bleeding.

FC9_5

Laparoscopic morcellation made safe and easy—the 'disco ball technique'

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Introduction: Our aim is to demonstrate a new technique for laparoscopic morcellation that is ergonomic, safe and time efficient.
Materials and Methods: The technique was developed in a laparoscopic skills wet lab using lamb's kidneys and a standard electromechanical morcellator before being applied in vivo.
Results: The technique is based on the principles of sphere physics. The specimen to be morcellated is suspended from the anterior abdominal wall in the midline, at a level slightly caudal to the lateral ports, using a suture on a straight needle. The specimen is then fixed with the needle, which is inserted through the anterior abdominal wall and the suspended specimen to form its axis of rotation. A heavy toothed

grasper introduced from the morcellation port is used to hold the specimen and steady traction is applied, in a direction tangential to the surface of the specimen whilst morcellation is being performed. This makes the specimen spin around its central axis, towards the blade of the morcellator, like a disco ball, as demonstrated in our video.
Discussion: This technique results in controlled, ergonomic, fast and safe morcellation. It eliminates the need of an assistant to manipulate the specimen. As the mass is fixed and at a constant distance from the camera and surrounding organs the risk of inadvertent injury is minimised. Coring is avoided as morcellation is limited to the surface of the specimen. The generation of small fragments that could fall and get lost in the abdomen is minimized as the mass is removed in long strips, in a symmetrical and uniform fashion, thereby reducing operating times.
Conclusions: The described "disco ball" technique is a simple, reproducible technique for laparoscopic morcellation that is safe, ergonomic and time efficient.
Key-words: laparoscopic, morcellation, technique.

FC9_6

Pregnancy and delivery outcome after laparoscopic myomectomy with a 6 years-FU

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Summary: Laparoscopic myomectomy (LM) has become an established therapy in the treatment of infertility. LM significantly improved the pregnancy rate in infertile patients. Most pregnancies are achieved spontaneously. The abortion rate was decreased and delivery rate increased. The majority of deliveries was at term, however, the rate of uterine rupture was higher than expected.
Patients and Methods: The study was performed on 65 patients with the finding of uterine myoma. All patients underwent LM from January 2001 through December 2006. Information and results from 59 patients after LM were analysed with a mean follow-up of 73.55 months after surgery. All women received obstetric care and gave birth at our hospital.
Results: Conception rate after LM was 68%, whereas before surgery 34% patients reported a pregnancy with an abortion rate as high as 43%. After LM we observed an abortion rate of 24%. Preterm delivery occurred in 3 cases. 46% had a primary caesarean section. In 62% the trial of vaginal birth was completed successfully. Uterine rupture was discovered in 10% of all deliveries. Placentation disorders occurred in 13% of all deliveries.
Discussion: Pregnancies following myomectomy are risk pregnancies. Consequently, obstetric care and delivery management of women after laparoscopic myomectomy should be the same as of women after caesarean section with special regard to placenta localization and uterine rupture. Patients for vaginal delivery should be chosen carefully and the mode of delivery should be discussed in detail with affected women.
Key-words: laparoscopic myomectomy, uterine rupture, infertility.

FC9_7

What are women´s preferences regarding open and laparoscopic myomectomy, and why?

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Introduction: Myomectomy remains the best treatment for fibroids in women desiring to preserve their uterus and/or their fertility. There is still argument about the superiority of laparoscopic or laparotomy for myomectomy in suitable cases for either route of surgery. As far as we are aware, there is no data on regarding patient preference for these two routes of surgery to excise uterine fibroids.
Materials and Methods: We carried out a questionnaire-based observational study. Our subjects were patients treated in the gynaecology department or staff working at the Royal Free Hospital. The questionnaire includes an explanation in lay terms about what fibroids are, the differences between laparotomy and laparoscopy, and a table highlighting the relative advantages and disadvantages of the two routes of surgery based on our current knowledge. Women were asked to state their preferred route of surgery and give up to three reasons for their choice.
Results: We have analysed 50 questionnaires. Our preliminary results show a tendency in favour of laparotomy (63% vs 37%). Questions concerning the strength of the uterine repair and fibroid recurrence were the most important reasons favouring open myomectomy. Where laparoscopy was preferred, the most important reasons stated were mainly those related with a shorter hospital stay and faster return to normal activities.
Discussion: Preliminary analysis of our survey shows that gynaecologists should not assume automatically that all

patients prefer laparoscopic surgery for uterine fibroids. Patients should be provided with information about the advantages and disadvantages of open and laparoscopic surgery and given the opportunity to make an informed choice between the two routes of surgery.

Key-words: abdominal myomectomy, laparoscopy, women's preferences.

FC9_8

Clinical and instrumental recurrence after laparoscopic myomectomy: four years follow-up

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Objective: To evaluate clinical and instrumental recurrence rate 48 months after laparoscopic myomectomy.

Materials and Methods: 529 patients submitted to laparoscopic myomectomy at the Gynecological and Obstetric Clinic of Padua University. Surgical interventions were performed by same surgeon using ultrasonic scalpel for hysterotomy and myoma enucleation. Suture of the myometrial fovea was made with intracorporal stitches, and myoma was extract by morcellement. We evaluated patients 48 months after surgery by questionnaire and pelvic transvaginal ultrasound. We recorded the recurrence of symptoms, the necessity of hospedalization and the re-interventions, and the ultrasound recurrence of myoma.

Results: Above 529 patients submitted to laparoscopic myomectomy, 337 answered at 48 month follow-up, 305 (90.5%) women were asymptomatic, 13 (3.8%) presented menorrhagia, 14 (4.1%) pelvic pain. Four patients needed a second surgical approach (1.2%) for persistent menorrhagia: 2 (0.58%) were submitted to total hysterectomy, 1 (0.29%) to subtotal hysterectomy, and 1 (0.29%) patient was submitted to a new laparoscopic myomectomy. At pelvic transvaginal ultrasound, 48 months after surgery, 130 patients (38.6%) presented uterine myomas with a mean of 1.8±0.7 myomas for patients, and average diameter 1.8±0.9 cm. Eight (6,1%) of patients with recurrence of myoma at ultrasound follow-up presented menorrhagia.

Conclusion: Laparoscopic myomectomy by ultrasonic scalpel is long term effective for control of symptoms, even if with a sensible instrumental recurrence, with a low clinical recurrence needing of medical or surgical reintervention.

Key-words: laparoscopic myomectomy, menorrhagia, transvaginal ultrasound.

FC9_9

An open-label, randomized, comparative study of the efficacy and safety of preoperative GNRH agonist therapy for laparoscopic myomectomy

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Design: Randomized Control Trial.

Objective: The efficacy of GnRH agonist (GnRHa) administered before laparoscopic myomectomy (LM) was evaluated in a randomized controlled trial (RCT).

Materials and Methods: Patient registration with UMIN-CTR was started under authorization of the Clinical Trial Committee of our hospital. 107 patients enrolled in this study were stratified according to age, maximum myoma size, and number of myomas. They were randomized either to preoperative treatment with leuprorelin acetate (1.88 mg) for 6 month (Group A) or to direct surgery (Group B). In each group, LM was performed 6 months after enrollment. Four patients dropped out of the study before surgery (2 patients with increasing of myoma size and severe anemia), or during surgery (2 patients complicated by severe pelvic adhesion and adenomyosis). Finaly, the outcome of surgery were compared between 51 patients in Group A and 52 patients in Group B.

Results: The operative time was 65.4±22.9(min) in Group A and 85.2±29.2 (min) in Group B, estimated blood loss was 90.0±67.4 and 148.2±122 (ml), and fluid volume discharged through the drain postoperatively was 89.2±63.8 and 155.5±134.6 (ml), respectively. All of these parameters differed significantly between the 2 groups ($p<0.01$), suggesting that preoperative GnRHa treatment is advantageous in improving operative outcome and reducing postoperative bleeding.

Conclusion: The results from this RCT revealed the effectiveness of preoperative GnRH agonist therapy for LM.

Free Communications 10_Office & Diagnostic Hysteroscopy

FC10_1

Best practice in outpatient hysteroscopy: seven systematic reviews and meta-analyses

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Aim: To present the results of a series of systematic reviews concerning pain experience during outpatient hysteroscopy.

Materials and Methods: Seven systematic reviews were conducted to assess factors that contribute to the pain

experienced during hysteroscopy. These factors were the use of local anaesthesia, the vaginoscopic approach, type of distension medium, analgesia, conscious sedation, type of hysteroscope and cervical preparation. For each of the reviews EMBASE, Medline, CINAHL and the Cochrane library were searched for relevant studies. The abstracts of the studies were read by two doctors independently and studies that met the inclusion criteria selected. The full articles were then obtained and further studies were excluded. Where possible meta-analysis was performed.
Results: Paracervical and intracervical injection of local anaesthesia both reduced pain (SMD=−1.28, 95% CI −2.22 to −0.38, and SMD=−0.36, 95% CI −0.61 to −0.10, respectively), as did use of the vaginoscopic approach (SMD −0.35, 95% CI −0.59 to −0.10).
Results: from the other reviews will be discussed in the presentation.
Conclusions: The use of injectable anaesthetics and the vaginoscopic approach are key factors in pain reduction during outpatient hysteroscopy. These results, along with those from the other reviews have been used to formulate a best practice guideline.
Key-words: hysteroscopy, guideline, pain.

FC10_2

Embrioscopy: new clinical and diagnostic prospectives of the office hysteroscopy in the embrio diseases

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The embrioscopy represents a new technique for the study of the embrio disease diagnosticated by prenatal diagnosis center. The office hysteroscopy can help to define and study the pathologies diagnosticated by ecographic images or invasive procedures (cvs) of the baby in first thrimester of life.
Key-words: embrioscopy, office hysteroscopy, new techniques.

FC10_3

Hysteroscopic findings in patients with breast cancer, with and without Tamoxifen therapy

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Objective: To evaluate hysteroscopic findings in women with breast cancer.
Materials and Methods: Retrospective analysis of data of the Centro de Endoscopía Ginecológica del Centro Hospitalario Pereira Rossell, de Uruguay, From 2005 to 2010. In this period, 5800 hysterocopies were performed. Of them, 220 were in patients with breast cancer. We analyzed too groups: the patients that were receiving prophylactic treatment, and those that were not.
Results: The 3, 79% of the hysteroscopies were made in patients with breast cancer. Of these patients, 110 were receiving Tamoxifen therapy, 18 were receiving aromatize inhibitors, 1 was treated with GnRh analogs and 1 with Megestrol, and no prophylactic treatment was performed in 90 patients. A high number of patients, 35% (both groups, prophylactic and no prophylactic therapies), had an endometrial thickness measured by transvaginal ultrasound higher than 4 mm. The most common hysteroscopic and histological findings were endometrial polyps 30% and atrophic endometrial in 42%. No cancer was found in patients with Tamoxifen or aromatizes inhibitors treatment. Only 2 endometrial cancers were found in 2 patients with no prophylactic treatment.
Conclusions: Women with breast cancer have more often endometrial polyps independently of the therapies received. The hysteroscopic approach is a safe and accuracy method to evaluate these patients. We didn't find any endometrial cancer due to Tamoxifen Therapy, and the findings in patients with Anastrazol Therapy were similar to Tamoxifen findings.
Key-words: tamoxifen, anastrazol, hysteroscopy.

FC10_4

Comparison of patient outcome in second generation ablation techniques. Microwave ablation and Mirena intrauterine system (IUS): who wins and at what cost!

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Introduction: To compare outcomes of endometrial ablation techniques; Novosure, Thermoblate, Microwave Endometrial Ablation (MEA) and Mirena intrauterine system (IUS).
Materials and Methods: Retrospective review of 200 patients with menorrhagia underwent either Novosure, Thermablate, MEA or Mirena insertion. Study period 24 months (1/1/09 to 31/12/09). Reviewed at least 4 months post procedure.
Results: Novosure (n=50), Thermablate (n=50), MEA (n=50) or Mirena (n=50) insertion. Data collected by telephone questionnaire and chart review. Subjective menstrual loss and pain were rated pre and post procedure. Amenorrhoea, subsequent hysterectomy, satisfaction, recommendation rates and complications were recorded. Menstrual loss improved in 90% (45/50) of Novosure group, 90% (45/50) of Thermablate group, 72% of MEA (36/50) group and 86% of (43/50) Mirena group. Dysmenorrhoea improved in

74% of Novosure group, 69% Thermablate group, 57% (25/44) MEA group and 71% (32/45) Mirena group. Amenorrhoea rate was 36% (18/50) Novosure group, 28% (14/50) Thermablate group, 10% (5/50) MEA group and 34% (17/50) in Mirena group. Post procedure hysterectomy rates where 6%, 4%, 16%, 2% respectively for the Novasure, Thermablate, MEA and mirena group. No major complications occurred.

Discussion: Thermablate and Novosure patients report equal improvements in menorrhagia (90%). Greatest improvement in dysmenorrhoea occurred with Novosure (74%), followed by Mirena patients (71%). Amenorrhoea was reported in approximately 1/3 of patients after Novosure, Thermablate or Mirena. MEA has a comparatively inferior clinical outcome with 16% of patients going on to have a hysterectomy. Cost per procedure range from €89 for Mirena to €469, €484, €558 for Thermablate, MEA and Novosure respectively. Overall Mirena appears the most cost efficient and MEA the least.

Key-words: emorrhagia, endometrial ablation, cost.

FC10_6

Complications associated with Essure device: analysis after 4000 procedures

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Objectives: To analyse the complications at short, medium and long term, registered in patients that underwent hysteroscopic tubal sterilization with Essure device.

Materials and Methods: Retrospective cohort study of 4000 consecutive patients with the procedure performed between 2003 till 2010. All data are registered in the database of the Office Hysteroscopy Unit of our hospital. The telephone number is given to all patients to communicate all kind of problems. Follow up of patients includes from 3 months till 8 years.

Results: The global rate of complications is 1,8% (73 cases). The most frequent complication is the vasovagal syncope after procedure (1,07%, 43 cases), follows by the expulsion of one of the devices (0,47%, 19 cases). None syncope required hospitalization and they cured with recovery. The expulsions were most of them in the three months after placement; 2 were after 5 months, 1 was after 1 year, and 2 after 2 years. Other complications are rare: 2 migrations to cavity that didn't required surgery; 3 intramyometrial placement, and 2 IPD that cured with antibiotics; 1 tubal perforation that required a laparoscopic salpinguectomy; 1 abdominal pain that hasn't improved after laparoscopic salpinguectomy and apendicectomy; and 2 nickel allergy without previous diagnosed that required a laparoscopic salpinguectomy after essay an hysteroscopic approach. The devices have been placed in 25 known nickel allergies without side effects.

Conclusions: The permanent birth control with Essure device has demonstrated to be a safe method, with a low rate of complications, which its security persist after 8 years follow up. That means that Essure method should be the reference method in what is to do with definitive contraception.

Key-words: complications, office hysteroscopy, Essure.

FC10_7

Success rate of a novel hysteroscopic sterilization technique

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Study Objective: Prospectively evaluate successful hysteroscopic sterilization procedures and report the percentage of tubal occlusion at 3 and 6 months after the procedure.

Design: Observational trial of consecutive 114 patients undergoing hysteroscopic sterilization with the Adiana® system between January 2009 and June 2010. Bilateral placement success, operative time, tubal occlusion and adverse events were documented.

Setting: The Adiana® procedure was performed in six teaching hospitals in the Netherlands. All surgeries were performed as an outpatient procedure without anesthesia.

Patients or Participants: 114 consecutive patients scheduled for hysteroscopic sterilization.

Interventions: Bilateral placement of silicone matrix implants in the fallopian tubes using a hysteroscopic transcervical approach. The same procedure protocol was applied for all cases. Three months after the procedure, a hysterosalpingography (HSG) was conducted to evaluate tubal occlusion. A six month HSG was conducted in patients judged patent or inconclusive.

Measurements and Preliminary Results: Preliminary results include data of 114 patients. Mean operative time was 9.5 min (range, 3–45). Bilateral placement was achieved in 90% (In 10 patients the implants could not be placed in both fallopian tubes). 95 % of the patients (116/122 tubes) had a successful sterilization, confirmed with a HSG three months after the procedure. 43 patients are pending 3 month HSG. In 4 patients one fallopian tube did not appear to be occluded according to the HSG after 3 or 6 months. Only 1 patient had no occluded fallopian tubes 3 months after the procedure. Two patients complained of nausea during the procedure. No uterine or other injuries (perforation, thermal injury, or excessive bleeding) occurred and no fluid management or neurological complications were encountered.

Conclusions: The results of this study show that hysteroscopic sterilization using the Adiana® is a safe method that

can be performed in an outpatient setting. According to the preliminary results this procedure provides hysteroscopic sterilization, with a tubal occlusion rate of 95% (116/122 tubes).

Key-words: hysteroscopy, sterilization.

FC10_8

International opinion on the septate uterus at office hysteroscopy

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Objective: Hysteroscopy is known as the most accurate test for diagnosing intrauterine pathology. However, clearly defined standards for which hysteroscopy findings are seen as an abnormality are absent. Therefore, the aim of this study was to assess the international agreement in the diagnosis ‘septate uterus’, making use of recordings of hysteroscopies of infertile patients.

Materials and Methods: Video recordings of hysteroscopies in asymptomatic, infertile women were assessed by 4 experienced gynaecologists. 7 recordings, diagnosed as arcuate or septate uterus, together with 1 recording, judged as a normal uterine cavity, were put on the internet. International gynaecologists were asked to assess the recordings, with specific emphasis on the shape of the uterus (normal, arcuate, sepatate). Also, their opinion on the characteristic(s) of a septate uterus was asked.

Results: 80 gynaecologists assessed the recordings, of whom 40 with a particular interest in hysteroscopy. Agreement in the diagnosis ‘septum’ for recording 1–8 varied from 14–98%. Among the experts this variation in the agreement ranged from 15–95%, and was not obviously different. Gynaecologists from the same country overall reached a higher level of agreement, up to an average of 69% on all recordings (Portugal, range 50–100%). The main characteristic associated with a septum appeared to be the angle of the bulging feature pointing into the uterine cavity (sharp (septate) vs. shallow (arcuate).

Conclusion: The international reproducibility in diagnosing a septate uterus is rather disappointing. This may affect the diagnostic accuracy of screening hysteroscopy in infertile patients, as well as the significance of the role for uterine septa in recurrent miscarriage.

Key-words: septum, hysteroscopy, international observer agreement.

FC10_9

Hysteroscopic tubal sterilization in intrauterine device users

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Objectives: To evaluate the results in terms of feasibility, tolerance and satisfaction of hysteroscopy placement of Essure micro inserts in patients IUD users in comparison with IUD non users, all of them performed in an outpatient setting. We also evaluate the differences in success rate, level of difficulties and tolerance when removing or not removing the IUD one month before procedure.

Materials and Methods: Retrospective cohort study of 4266 women between January 2003 and June 2010. 3777 women were non IUD users (GROUP I) for 489 women IUD users (GROUP II). In Group II we have 214 patients with IUD removed one month before procedure (IIA) and 275 where it was not removed before procedure (IIB).

Results: The failure placement rate for Group I is 0,9% and 2,4% for Group II, with an incidence of tube obstruction of 66% and 75% of cases of failure placement. For the difficulties perceived by operator we have 21% vs. 38% for medium or high difficulty, mostly because of anatomic anomalies in both groups but with an increased of difficulties in seen ostium and tube obstruction for Group II. 15% of women of GroupI vs. 20% in Group II perceived the procedure as medium or high painful. There are no differences in both groups in satisfaction and grade of recommendation. If we analyzed Group II, the success rate of Group IIA is 96,7 vs. 98,1% when the procedure is performed with IUD (with a 7,6% of cases of IUD removed during procedure), with no differences in pain perceived. In Group IIB there is an increased of cases with medium difficulty expense an increased of high difficulty in Group IIA.

Conclusions: The difficulties found in IUD users are linked to the use of this contraceptive method but not in the fact of have it in the moment of the procedure. Even the success rate decreased in IUD users and the difficulties increased, we have demonstrated that insertion is possible up to 97% of cases, and that allows the use of the same contraceptive method for the following three months until tube occlusion is confirmed.

Key-words: office hysteroscopy, tubal sterilization, intrauterine device.

FC10_10

Minihysteroscopy and the need for cervical block during passage of the cervical canal. Data from 150 procedures in a university clinic setup

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Introduction: Minihysteroscopy by the vaginoscopic approach is feasible. Due to the small size of the hysteroscope (3,2–4 mm diameter) cervical dilatation is seldom indicated—if so, a cervical block (local anaesthesia) might be necessary.
Materials and Methods: 150 patients referred for minihysteroscopy planned as no-touch technique by the vaginoscopic approach without cervical block. Given information: local anaesthesia is seldom needed. All patients received 1000 mg paracetamol and 400 mg ibuprofen 30 minutes before surgery.
Indications: diagnostic hysteroscopy, known intrauterine pathology (minor polyp/fibroid), foreign bodies or synechiae. If cervical dilatation was needed, intra cervical injection of felypressin (1.94—3.9 g) and prilocaine (108—216 mg) through a 27 G needle was applied before dilatation. Data were collected in a database.
Results: The need for a cervical block during passage/opening of the internal orificium/cervical canal occured in less than 10% of the procedures. The main indication for a cervical block was dilatation of a narrow cervical canal and/or a perioperative suspicion of a vasovagal reaction. The majority of cervical blocks were given to nulliparous and postmenopausal women.
Discussion: The low incidence of cervical block (<10%) indicates that it is feasible to plan minihysteroscopy with preoperative oral analgesics only and inform the patient accordingly. In case cervical block is needed no specific additional preperation of the patient is required.
Key-words: minihysteroscopy, cervical block, local anaesthesia.

FC10_11

Accuracy of office hysteroscopy in predicting histopathologic diagnosis

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Summary: All office hysteroscopies performed over a year in a tertiary care hospital, were reviewed. Hysteroscopic visual diagnosis was matched with histologic findings in order to estimate hysteroscopy accuracy in detecting abnormal findings, namely endometrial cancer.
Introduction: The aim of this study was to evaluate the accuracy of hysteroscopic visual interpretation in predicting histopathologic diagnosis.
Material and Methods: Review of all office hysteroscopies performed over a year in a tertiary care hospital, and comparison with histopathologic analysis when it was available. Three outcomes were considered: normal findings, benign disease (including endometrial hyperplasia, benign polyps, myomas, endometritis) and endometial cancer.
Results: Histopathology was available in 336 cases and showed normal endometrium in 54, benign disease in 263, and endometrial cancer in 19 cases. Hysteroscopy sensitivity, specificity, positive and negative predictive values for detecting endometrial cancer was 94.7%, 97.8%, 72.0% and 99.7%; for identifying benign conditions it was 95.1%, 68.1%, 91.6% and 79.0%, respectively. Accuracy (the proportion of correct results among the hysteroscopic examinations) was 88.6%; it raised to 97.6% if only two groups were considered: normal or benign findings vs endometrial cancer. Accuracy was also higher when considering only postmenopausal patients (n=173; 91.3%), and particularly if there was postmenopausal bleeding (n=50; 92.0%).
Discussions: Though the number of cases of endometrial cancer in this study was small, hysteroscopy seems to be highly accurate and thereby clinically useful in the diagnosis of this condition.
Key-words: accuracy, office hysteroscopy, histopathology.

FC10_12

Should we remove all endometrial polyps?

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Introduction: We analyzed the histopathology of endometrial polyps removed by hysteroscopy in our Center and try to assess whether different clinical parameters are associated with risk of malignancy.
Material and methods: Retrospective descriptive study of 578 hysteroscopic polypectomies performed in 407 patients from May 2008 to May 2010.

Results:

Population	Symptomatology	Number	Polyps	Age (mean)
Premenopausal n=216	Symptomatic	131	189	44,1
	Asymptomatic	60	81	41,8
Postmenopausal n=191	Symptomatic	103	138	58,8
	Asymptomatic	113	170	61,3
Total		407	578	

Hysteroscopy	Ultrasonography	Results	%
Symptomatic Premenopausal 131 polyps	67,1% Polyp	126 Polyps	96,18
	11,45% Myoma	2 Adenocarcinomas	1,52
	9,9%Increased endometrial thickness	1 Complex hyperplasia without atypia	0,76
	8,39% normal	2 Simple hyperplasia without atypia	1,52
Asymptomatic Premenopausal60 polyps	77% Polyp	59 Polyps	98,33
	10% Myoma	1 Simple hyperplasia without atypia	1,66
	2% Increased endometrial thickness	No malignant polyps	0
	10% Other		
Symptomatic Postmenopausal 103 polyps	43% Increased endometrial thickness	93 Polyps	90,29
	33% Polyp	6 Adenocarcinomas	5,82
	20% Atrophic endometrium	1 Complex hyperplasia without atypia	0,97
	2% Myoma	3 Simple hyperplasia without atypia	2,91
	2% Adenocarcinoma		
Asymptomatic Postmenopausal 113 polyps	67% Polyp	112 Polyps	99,11
	31% Increased endometrial thickness	1 Complex hyperplasia without atypia	0,88
	2% Myoma	No malignant polyps	0

Conclusions:

- In our serie the incidence of malignant polyps is low (1.96%) compared to published results (0–4,8 %)
- The incidence is increased in symptomatic patients, especially in postmenopausal (5.82%), but also in premenopausal women (1.52%)
- According to our results pre-or postmenopausal bleeding represent a risk factors for finding malignant polyps.

FC10_13

One-stop clinic in the management of post-menopausal PV bleeding (PMB)

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Summary: Women with PMB can be effectively managed in a one-stop clinic. Ultrasound and pipelle biopsy have a definitive role in diagnosis of EC. The role of hysteroscopy and polypectomy remain unclear. Introduction: To demonstrate efficiency of a one-stop clinic and to evaluate the role of ultrasound, office hysteroscopy and office hysteroscopic polypectomy in the diagnosis of endometrial cancer (EC).

Materials and Methods: Prospective study of 160 women with uterus presenting with PMB between 11.11.08 to 10.2.10. *Results*: 38.8% women with an endometrial thickness (ET) <5 mm on ultrasound were reassured and discharged without further investigations. In women with ET>5 mm, 82.3% had a hysteroscopy+/- endometrial biopsy (EB) at the same visit. In these women the incidence of benign polyps was 39.6%, endometrial hyperplasia (EH) 3.1% and EC was 9.4%. 68% had office hysteroscopic polypectomy at their first visit. Overall, 88% were discharged or had definitive investigations/treatment at the first visit. Pipelle biopsy was positive in all cases of atypical EH and EC. Peritoneal washings were negative in all women with EC who had surgery.

Discussion: Ultrasound allows a large number of women to be reassured and discharged without further tests. Hysteroscopy in diagnosis of EC is debated due to risk of dissemination of EC cells into the peritoneal cavity and because the sensitivity of a Pipelle biopsy alone in identifying EC is high (98%). Hysteroscopy did not help to increase our detection rates of EC over a Pipelle biopsy but did help to identify polyps, which would have otherwise been missed. The need for removing benign polyps needs further investigation.

Key-words: PMB, one-stop clinic, office hysteroscopy.

FC10_14

Endometritis: hysteroscopic findings

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Introduction: Subclinical endometrial infection can modify the endometrial receptivity and consequently interfere with the embryo implantation. Hysteroscopic findings of hyperemia and mucosal edema suggest the presence of endometritis. The purpose of this study was to evaluate the

hysteroscopic follow-up after antimicrobial therapy with doxiciclina 200 mg/day for 10 days repeted after one and two months. A new histeroscopic evaluation was performed after 3 months of diagnosis.
Materials and Methods: 100 infertily women undergoing hysteroscopic examination prior ivf-et procedure.
Results: We found 15 infertily women (15%) with hysteroscopic findings of endometritis. after 3 months of therapy we osserved a resolution of the endometrial inflammatory desease in 9 (60%) patientes, a improvement in 4 (26%) patientes and the same endometrial aspect was found in 2 (14%) patients.
Discussion: The presence of hyperemia and mucosal edema during histeroscopic procedure suggests an endometrial infection and an antimicrobial treatment can modify the endometrial inflammatory aspect in 86% of the cases. A better understanding of the role of the endometritis in infertily patients must be confirmed, but we presume the high importance of this desease in embryo implantation.
Key-words: endometritis, infertility, hysteroscopy.

FC10_15

Hysteroscopic bipolar resection and Essure micro-inserts placement

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Since 1998, it has been possible to conduct tubal occlusion using hysteroscopy, thanks to the Essure® system (Conceptus Inc, San Carlos, California). In France, this procedure is recommended for women around forty years old. However, during this time of life, women sometimes present menstrual cycle difficulties linked a fibroid, polyp or hypertrophy of the mucosal tissue. The aim of this study is to demonstrate the feasibility and innocuousness of conducting hysteroscopic bipolar resection at the same operating time. We conducted a group-controlled observational study between January 1st 2004 and February 28th 2009. 382 patients underwent Essure® insert placement in our Department. In 41 patients (Group A), one or several concomitant uterine procedures were conducted. 341 patients (Group B) underwent Essure® insert placement alone. The final success rate in Group A was 97.6% and 97.3% in Group B ($p=1$). OR=1 [0.61–1.63]. We observed one case of insert expulsion and one case of insert migration in group A; 4 cases of expulsion and 5 cases of migration/perforation of insert in group B. This results in a complication rate of 4.9% in Group A versus 2.6% in the control group ($p=0.34$). OR=1.8 [0.18–9.3]. No infection occurred. Bipolar resection during hysteroscopy for sterilisation is possible, without reducing placement success rate and without increasing the morbidity of the concomitant procedure. These results should be confirmed by subsequent studies.
Key-word: Essure.

FC10_16

Subclassification system for American Fertility Society Classes V and VI uterine anomalies: patients selection and choice of adequate hysteroscopic treatment

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Objective: To produce and validate a simple, systematic and reproducible subclassification system for uterine anomalies traditionally classified by the American Ferility Society (AFS) as Class V and VI in order to: achieve a precise definition of each uterine anomaly, determine the feasibility and safety of surgical correction, the type of hysteroscopic treatment, and provide a standard by which patient selection, management, and reproductive outcomes can be compared between Centers.
Materials and Methods: 151 patients underwent office hysteroscopy and transvaginal three-dimensional ultrasound (3D US) to assess partial or complete "double" uterine cavity. Data from hysteroscopy and sonography were combined to produce a geometric and reproducible model based on the evaluation of two parameters: the endocavitary development of the septum (Z variable) and the fundus thickness (Y variable) through which a new subclassification of the uterine anomalies was elaborated. A total of 12 subclasses of uterine malformations was identified.
Results: Two patient who was/were sonographically diagnosed as having a bicornuate uterus was excluded from the study. The remaining 149 patients were classified according to our subclassification system. 123 patients categorized as A2 to B3, (normal or straight uterine fundus and septum involving one-third of the uterine cavity or more) underwent resectoscopic metroplasty without laparoscopic control. 20 patients categorized as A1 (normal uterine fundus and septum$\leq$ 0.5 cm) underwent office metroplasty. Four patients categorized as B1 (straight fundus and septum$\leq$0.5 cm) and 2 categorized as C1 (concave fundus and septum$\leq$ 0.5 cm) were considered unsuitable for surgery. Second-look hysteroscopy confirmed complete removal of the

septum in the 100% of patients who underwent office metroplasty and in 96% of patients who underwent resectoscopic metroplasty. Comparison of these data with data retrospectively obtained by 596 women who had undergone traditional resectoscopic metroplasty under laparoscopic control did not demonstrate any significant difference in terms of success and complication rates.

Conclusions: Our outpatient subclassification system categorizes uterine anomalies on the basis of a geometric schema, comprising uterine septum length and fundus depth as defined by integrating both hysteroscopic and 3D US data. This allowed us to select adequately patients for intervention, to choose the type of hysteroscopic treatment, and to performe a safe and effective metroplasty without laparoscopic control, customizing and modulating the intervention on the basis of the uterine morphology of each patient.

Furthermore, this system may allow a clinical comparison of patients selection, results analysis and reproductive follow-up.

Free Communications 11_Oncology

FC11_1

Laparoscopic retroperitoneal lymphadenectomy in gynaecological cancer

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The endoscopic retroperitoneal approach is a minimally invasive method for surgical staging of gynaecological cancer.

Introduction: To evaluate the feasibility and effectiveness of laparoscopic retroperitoneal lymphadenectomy in gynaecological cancer.

Materials and Methods: 13 retroperitoneal lymphadenectomies were performed in Institut Universitari Dexeus from 2007 to 2010. The following data were reviewed: pathological data and postoperative follow-up (length of hospital stay, blood loss).

Results: The mean age was 56.5 years (+/−13.2). 61.54% of tumors were endometrioid type endometrial carcinoma, 15.38% papillary serous endometrial carcinoma, 15.38% cervical carcinoma, 7.69% carcinosarcoma. In 2 cases ovarian cancer was observed concomitant. 70% of cases were classified as stage II. The number of aortic lymph nodes analyzed varied from 8 to 20 (mean 11 +/−4.8) and 7.69% showed node involvement. A single retroperitoneal aortic lymphadenectomy was performed in 15.38% and an hysterectomy with both pelvic and aortic lymphadenectomy in 84.61%. Operating time was 165 minutes in a single retroperitoneal aortic lymphadenectomy and 279.5 minutes when hysterectomy and pelvic/aortic lymphadenectomy were performed. The mean drop in haemoglobin in single aortic lymphadenectomy was 1.05 compared to 3.18 in the hysterectomy group. The mean length of hospital stay was 3.69 (+/−1.6 days). Blood transfusion was not required. There were no intraoperative complications but 2 cases presented minor postoperative complications: deep vein thrombosis in lower extremity and lymphocele.

Conclusions: Lower rate of intestinal adhesions and complications. Reduced hospital stay and shorter recovery time. Do not delay the onset of adjuvant radiotherapy or chemotherapy. It requires a learning curve for the surgeon and the standardization of the technique.

Key-words: gynaecological cancer, retroperitoneal lymphadenectomy, laparoscopy.

FC11_2

Assessment of risk factors of lymph node metastasis in endometrial cancer

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Node involvement is more commonly observed in high risk patients. Paraaortic involvement is risk factor for metastasis. These knowledge permits establish a better adjuvant treatment.

Introduction: To assess the risk factors associated with node involvement.

Materials and Methods: In the period 1990–2008 a total of 265 endometrial cancers were treated in the Institut Universitari Dexeus. The rate of myometrial invasion, tumour grade, node involvement are analyzed.

Results: 86% of tumours were endometrioid. Among those with endometrioid histology, lymphadenectomy was not performed (NL) in 85 cases (37.2%), whereas pelvic lymphadenectomy (PL) or pelvic and aortic lymphadenectomy (PAL) was carried out in 84 (36.84%) and 59 patients (25.87%), respectively. In NL patients the overall disease-free survival (DFS) rate at five years was 92.8%. In the PL group, node involvement was observed in 2.4% of cases and the five-year DFS rate was 92.3%. Among PAL patients, 18.6% showed node involvement (72.7% positive pelvic nodes and 63.6% aortic). Aortic involvement was present in 5.9% of cases when there was no pelvic disease, whereas in the presence of positive pelvic nodes the rate of aortic involvement was 50%. The DFS rate at five years was 93.6%. Referring to the risk factors, when infiltration

was >50% of the myometrium, lymph node involvement occurred in 37% of cases and G3 tumors in 45.5%.
Conclusions: Node involvement is more commonly observed in cases with >50% myometrial invasion and G3, accounting for 25% of cases that can be considered as at-risk patients. When node involvement is present it is equally distributed between the pelvic and aortic levels. As node involvement is a predictive factor for distant metastasis, the 25% of patients considered to be at risk should undergo pelvic and aortic lymphadenectomy.
Key-words: endometrial carcinoma, lymphadenectomy, node involvement.

FC11_3

Comparative analysis of the robot-assisted radical hysterectomy, laparoscopic-assisted radical vaginal hysterectomy, and abdominal radical hysterectomy

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The aim of the authors is to evaluate the perioperative and the oncological outcomes of women with cervical carcinoma, who have undergone radical hysterectomy using three different surgical methods—robotic assistance, laparoscopy and laparotomy.
Materials and Methods: From January 2006 to May 2010 at the Gynecologic Oncology Clinic, Medical University Pleven, Bulgaria 294 women with T1b1 cervical cancer have been operated. 73 of them have undergone Robot-assisted Radical Hysterectomy (RARH), 46—Laparoscopic-assisted Radical Vaginal Hysterectomy (LARVH) and 175—Abdominal Radical Hysterectomy (ARH).
Results: The average operative time (incision time—skin closed time) and the average hospital stay (days) are significantly less in female patients who have undergone RARH (152±26.50 min and 4.07±0.65 days resp.) in comparison with those who have undergone LARVH (232±61.66 min and 4.8±0.54 days resp.) and those with performed ARH (168±31.05 min and 9.6±1.03 days resp.) (p=0.001). From the indices, which have been examined, of significant importance for the overall survival are the FIGO stage, metastases in the regional lymph nodes, the type of surgery and the appearance of recurrences. With the application of multivariate analysis, however, only the lymph-node metastases and the presence of recurrences have kept their significant importance.
Conclusion: The preliminary results showed that Robot-assisted and laparoscopic radical hysterectomies do not affect the overall survival and disease-free survival in women with T1b1 cervical cancer. The therapeutic results are compatible with those of the abdominal radical surgery.
Key-words: robot-assisted radical hysterectomy, laparoscopic-assisted radical vaginal hysterectomy, abdominal radical hysterectomy.

FC11_4

Unexpected malignancy in management of adnexal tumours by laparoscopy

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Objective: To assess the efficacy and safety of laparoscopy sugery in the management of adnexal tumors with no sings of malignancy.
Design: Retrospective study.
Materials and Methods: A total of 2.646 adnexal tumors were removed by laparoscopy from 2.345 women. The mean age was 39.1 years (range: 17–79 yrs.).
Results: The procedures performed were total cystectomy, and ovariectomy or adnexectomy in those beyond menopause. Preoperative assessment was the same as for as conventional surgery. Transvaginal ultrasonography was performed to evaluate the size and internal characteristics of masses to exclude malignancy, also was evaluate the IR by Doppler-colour. Serum CA 125 and CA 19.9 level was measured in all women at disagnóstic laparoscopy, visual inspection, cytologic examination, and if necessary, biopsy and frozen section were performed. If cytology of the frozen section indicated malignancy, the procedure was converted to laparotomy. Fiveten patiens (0.64 %) required conversion to laparotomy because of unexpected malignancy, and from seventen patiens (0.72 %) that had a Borderline tumors, six were stadificated by laparoscopic because of the results of patology study one weck later.
Conclusions: Laparoscopic management of adnexal tumors is a safe and beneficial method in selected patiens when are performed by experienced laparoscopic surgeons. The approach to complex ovarian masses is posible in most patiens, however, it should be performed only in centers where an oncologic back-up is immediately available.
Key-words: adnexal tumours, borderline tumours.

FC11_5

Standardized technique of laparoscopic pelvic and para-aortic lymphadenectomy in gynecologic cancer optimizes the perioperative outcomes

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Introduction: The main objective of this study is to illustrate the effectiveness and the safety of standardized technique of laparoscopic lymphadenectomy (LNE), newly

introduced in a University Hospital, in patients with gynecologic malignancy.
Materials and Methods: A cohort of 104 patients with gynaecologic malignancies (71 with endometrial and 33 with cervical cancer), who underwent laparoscopic pelvic with or without para-aortic LNE between September 2008 and March 2010, were analyzed. Total laparoscopic hysterectomy with bilateral salpingo-oophorectomy (TLH & BSO) was the standard approach for patients with endometrial cancer (n=71), while laparoscopic (nerve-sparing) radical hysterectomy (LRH) (n=31), laparoscopic-assisted radical vaginal hysterectomy (LARVH) (n=2) and radical trachelectomy (RT) was the treatment for patients with cervical cancer. All LNE were performed by a learning team under the supervision of expert surgeon, familiar with the method.
Results: The median number of yielded pelvic lymph nodes was 22 (range 16–34) and of para-aortic nodes 14 (range 12–24). The mean time±standard deviation (SD) for pelvic LNE for each side was 29±17 minutes and 64±29 minutes for para-aortic LNE. The overall complication rate was 7.6 % (n=8). Two patients were re-operated laparoscopically, one because of postoperative haemorrhage and the other because of lymphocyst creation. No need of laparo-conversion was necessary.
Discussion: Laparoscopic lymphadenectomy performed by a learning team with standardised technique is effective with adequate harvested number of nodes, in acceptable operative time and with low rate of perioperative complications.
Key-words: laparoscopic lymphadenectomy, pelvic lymphadenectomy, para-aortic lymphadenectomy.

FC11_6

Laparoscopic nerve-sparing radical hysterectomy; description of the technique and patients' outcome

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Introduction: The radical hysterectomy type III can be accompanied by postoperative morbidity, such as dysfunction of the lower urinary tract with loss of bladder or rectum sensation. We describe the technique of laparoscopic nerve-sparing radical hysterectomy and patient's outcome.
Materials and Methods: 32 patients underwent laparoscopic nerve-sparing radical hysterectomy with pelvic lymphadenectomy. Both the hypogastric and the splanchnic nerves were searched and identified bilaterally during pelvic lymphadenectomy.
Results: The median age of the patients was 52 years and the average operating time was 221 min. There were no intra- or postoperative complications considering the nerve-spring radical hysterectomy. Postoperatively, in all patients spontaneous voiding was possible on the third postoperative day with a median residual urine volume of <50 ml.
Discussion: Laparoscopic identification (neurolysis) of the inferior hypogastric nerve and inferior hypogastric plexus is a feasible procedure for trained laparoscopic surgeons who have a good knowledge not only of the retroperitoneal anatomy but also of the pelvic neuro-anatomy as this qualification could prohibit long-term bladder and voiding dysfunction during nerve-sparing radical hysterectomy. ing radical hysterectomy; description of the technique and patients' outcome
Key-words: nerve sparing surgery, radical hysterectomy, laparoscopy.

FC11_7

Pretreatment laparoscopic surgical staging in locally advanced cervical cancer treated with 3D image guided radiotherapy

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Introduction: 3-D MRI based brachytherapy improves local treatment results in advanced cervical cancer. Pretreatment laparoscopic staging and resection of bulky pelvic or para-aortic lymph nodes might influence treatment decisions and contribute to better distant control.
Materials and Methods: Twelve patients with stage IIA—IIIB cervical cancer, scheduled for radical radio-chemotherapy had pretreatment MRI to identify pathological lymph nodes, followed by laparoscopic surgical staging and debulking of pelvic and subaortic lymph nodes. To evaluate the feasibility of laparoscopic procedure, the completeness of lymph node resection, intraoperative complications and recovery lenght, as well as start of radiotherapy were analized.
Results: In seven patients, suspicious lymph nodes, measuring from 17 to 85 mm, were identified on MRI, located mainly at common iliac and subaortic region. Bulky lymph nodes were removed in all but one case where the removal was incomplete, with no intraoperative complications. Hystologically, metastatic spread was confirmed in seven cases. The mean postoperative stay was 4,8 and the radiotherapy started after mean 11.6 days. Radiotherapy technique was adapted according to the histologic results in all cases.
Discussion: Pretreatment laparoscopic staging and debulking of suspect pelvic or paraaortic lymphnodes is feasible in advanced cervical cancer, not delaying the standard radiotherapy. Histological results obtained at surgery can influence the radiotherapy technique.
Key-words: advanced cervical cancer, 3D image guided radiotherapy, laparoscopic lymphadenectomy.

FC11_8

Laparoscopic radical parametrectomy for occult invasive cervical cancer after simple hysterectomy

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Objective: To investigate the feasibility and effectiveness of laparoscopic radical parametrectomy and upper vaginal resection and lymphadenectomy for treatment of invasive cervical cancer found unexpectedly after simple hysterectomy.
Materials and Methods: From 2004 to 2008, 27 patients who were unexpectedly found to have invasive cervical cancer after simple hysterectomy for CIN III or benign disease underwent laparoscopic radical parametrectomy and upper vaginal resection and pelvic lymphadenectomy. A retrospective analysis of these cases was performed.
Results: The 27 cases were staged as follow: stage Ia2 in 12 cases, stage Ib1 in 7 cases and stage Ib2 in 8 cases. Squamous cell carcinoma was diagnosed in 24 cases, adenocarcinoma in 2 cases and adenosquamous carcinoma was noted in a single case. The mean age was 49.85 (28–68) years at the time of diagnosis. 19 patients underwent extrafascia hysterectomy for CINIII or in situ carcinoma, 5 for myoma and 3 for other benign diseases. Following laparoscopic radical surgery, 3 cases were found with residual lesions and 2 cases with lymph node metastasis. During surgery, bladder injury occurred in 1 case, and none of the patients needed a blood transfusion. Five patients were found with paracervical invasion and lymph node metastasis, and they underwent chemotherapy or radiotherapy post-operatively. Follow-up lasted 8–71 months, during which 2 patients developed relapses and 1 died. Post-operative urinary retention occurred in 2 cases and defecation dysfunction was noted in 1 case. The overall disease-free survival rate was 92.6%, and the overall survival rate was 96.3%.
Key-words: laparoscopic, radical parametrectomy, occult cervical cancer.

FC11_9

Hysterectomy with double laparoscopic anexectomy without manipulator in the endometrium adenocarcinoma. Learning curve and complications incidence

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Introduction: The literature has report more incidence of vaginal recurrence by the use of uterine manipulator into laparoscopic hysterectomy in endometrium carcinoma. That is why, we are trying not to use it, and analyzed the results and any complication.
Materials and Methods: Retrospective study included 42 endometrium adenocarcinoma. Analyzing any complication; conversions surgeries, surgical time and its relationship with BMI as independent factor.
Results: Between April 2009 and May 2010 were made 42 hysterectomies with double anexectomy by endometrium adenocarcinoma; 24 laparoscopic, 16 Laparotomic and 2 vaginal via. In 8 were made pelvic lymphadenectomy and in 5 para- aortic lymphadenectomy both by laparoscopy. We had 3 complications: 1 vesical, detected and fixed during the procedure and 2 patiens who were bleeding by vagina post procedure. In 2 patients the surgery was converted to laparotomic and in 6 was ending by vaginal via, The highest surgical time in the laparoscopic was 5:50 hours, this coincided with patients with pelvic and aortic lymphadenectomy. If we compare with the maxim time in the same procedure of laparotomic access were 50 minutes of difference. The minimun surgical time in the histerectomy and double anexectomy laparoscopic was 1:15 hours , only 15 minutes more than laparotomy.
Discussion: The practice of hysterectomy with double anexectomy without an uterine manipulator in the endometrium Adenocarcinoma obtains good results in our centre, with a low incidence of complications and with a surgical time that, at the same time of the learning curve goes on, practically equates to the procedure with laparotomic. Follow-up long-term to assess the vaginal incidences of the relapse in this patients will be needed.
Key-words: endometrium adenocarcinoma, uterine manipulator, hysterectomy and double anexectomy.

FC11_10

Prophylactic laparoscopic bilateral anexectomy in BRCA-1 and 2 mutation carriers. Preliminar outcomes analysis

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Introduction: Between 5 and 10% of the ovarian epithelial cancer are familiar and associated to a predisposition gene. From familiar cancer 90% are associated to BRCA-1 and 2 genes. The accumulated risk from ovarian cancer at 70 years old is 16–63% for BRCA-1 and 2–30% for BRCA-2. These genes are in the germinal line and affect on all the cells and go to the descent.
Objectives: To analyze preliminary results from patients with BRCA-1 and 2 genetic mutation and bilateral anexectomy.

Materials and Methods: In our hospital, we have a protocol to take patients from 3 years ago in the gynaecological oncological unit. We include patients with 3 or more first or second grade familiar person affected of breast or ovarian cancer, two cases between first and second grade, breast cancer before 30 years old, breast and ovarian cancer before 40 years old. We started the genetic study in patients with highest risk (the youngest, more than one cancer in the same patient or bilateral cancer). With this technique we detect carrier patients: healthy and sick. We offer laparoscopic bilateral anexectomy because is demonstrated that the ovarian cancer risk reduces from 6,9% to 1% and breast cancer risk reduces from 12,9% to 4,3%. In case of turn down the surgery, we control them each 6 months with mammography and transvaginal ultrasound from 35 years old. We don´t usually use tamoxifeno as chimioprophylactic.
Conclusions: We consider a valid and reliable method for the hereditary-familiar cancer. Although bibliography support our hypothesis, we need a bigger sample and a longer evolution control for make an evaluation and take conclusions for a long time.
Key-words: BRCA-1 and 2, carrier patient, hereditary-familiar cancer.

FC11_11

Laparoscopic hysterectomy for endometrial cancer
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Introduction: Patient selection criteria and operative outcomes of laparoscopic assisted vaginal hysterectomy were compared with conventional treatment in 159 women who received primary surgical treatment for endometrial cancer in a tertiary cancer Center in England over two years.
Materials and Methods: Data was analyzed from a prospectively collated database. Surgical treatment comprised of *1.* Laparoscopic Assisted Vaginal Hysterectomy (LAVH) N=37 *2.* Abdominal Hysterectomy via a transverse incision (TTAH) N=62 *3.* Abdominal Hysterectomy via a vertical midline incision (VTAH) N=55 Standard surgical staging included total hysterectomy with bilateral salpingo-oopherectomy with peritoneal washings and selective sampling of abnormal lymphnodes. *4.* Vaginal Hysterectomy (VH) N=5.
Results: Median age and ASA grading of patients were similar in all three groups, and the age of patients in the LAVH group ranged from 47 to 86. Mean Body Mass Index (BMI) were similar in all three groups LAVH (31), TTAH (34.4), VTAH (32). Patients in the LAVH group ranged in BMI from 19.8 to 41. Mean operating time (mins) was least for LAVH (85), followed by TTAH (110) and then VTAH (121). Post operative stay (days) was also shorter in LAVH group (3.26), when compared to (6.5) in those with a transverse incision while those with a vertical incision stayed an average of 7.74 days. Blood loss measured by mean drop in hemoglobin (g/dl) was similar in the laparotomy group but significantly less in the LAVH group. LAVH (1.84), Transverse incision (3.17), vertical incision (3.22).
Discussion: LAVH is a safe alternative when compared to conventional surgical approaches to endometrial cancer with reduced operating time, lower blood loss and faster post operative recovery.
Key-words: laparoscopic hysterectomy, endometrial cancer.

Free Communications 12_Operative Hysteroscopy

FC12_1

The usefulness and efficacy of vaginal danazol administration for endometrial preparation before operative hysteroscopy
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Objective: To compare the usefulness of a dose of 400 mg of vaginal versus 600 mg orally administered Danazol dosage in women undergoing endometrial preoperative preparation for hysteroscopic surgery. Design: randomized, double-blind, placebo controlled study.
Setting: Tertiary referral centers for gynaecological care. *Patients:* 91 fertile women randomly allocated to Group A (46 patients received 400 mg Danazol placed into the posterior vaginal fornix, and as placebo three oral tablets of commercially available folic acid) and; Group B [45 women received 600 mg of Danazol orally (200 mg three times daily) and received as placebo two vaginal tablets of LGG].
Interventions: office and operative hysteroscopy; transvaginal sonography (TVS); blood testing; histophatological

assay; visual analogue scale (VAS) for computing degree of surgeon's satisfaction.
Main outcome measures: changes of endometrial thickness; endometrial atrophy; blood testing; incidence of collateral effects; degree of difficulty and view;duration of surgical procedure, complications during operative hysteroscopy and, associated side effects; surgeon's satisfaction with the endometrial preparation.
Results: vaginal administration was more efficient that the oral one on endometrial thickness and, the number of patients with hypotrophic endometrium after danazol was significantly (P<0.01) higher in the vaginal (45/46) than oral (37/45) group. Vaginal administration was associated with lower length of operating time, volume for infusion and side effects incidence; higher surgeon satisfaction and; no changes of metabolic parameters.
Conclusions: Vaginal Danazol administration is preferable to the oral one in preparing the endometrium for operative hysteroscopy
Key-words: hysteroscopy, endometrial preparation, Danazol.

FC12_2

Hysteroscopic removal of placental cotyledons in postpartum: a prospective analysis

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Objective: To evaluate the clinical usefulness of the selective removal of residual intrauterine trophoblastic tissue by using a hysteroscopic procedure.
Materials and Methods: The study included consecutive patients presenting with symptoms related to retained trophoblastic tissue after vaginal or caesarean section delivery. Complete physical examination, transvaginal ultrasonography, measurement of serum hCG and operative hysteroscopy was offered as first treatment to all patients.
Results: Retained products of conception complicated the post-partum of 135 women, of whom 61 (45.2%) accepted to be treated by hysteroscopy: 42 patients (68.8%) had a vaginal delivery, whilst the remaining (n=19; 31.2%) had a caesarean section delivery. The removal of placental cotyledons by hysteroscopy was successfully completed in all patients with no need of curettage. The time needed for the procedure was significantly (P<0.01) shorted in the vaginal (5.4±1.8 minutes) than caesarean section group (8.4 ± 1.9 minutes) and, no complications were reported during or immediately after the procedure.
Conclusions: The selective removal of residual trophoblastic tissue via operative hysteroscopy is a rapid, safe and efficient procedure. This can be an alternative to conventional, non selective, blind curettage for patients in whom the condition is diagnosed clinically and verified by transavaginal ultrasonography.
Key-words: placenta, post-partum bleeding, operative hysteroscopy.

FC12_3

Clinical implementation of the hysteroscopic morcellator for removal of intrauterine myomas, polyps and residual placental tissue. A retrospective descriptive study

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Summary: Clinical implementation of the Hysteroscopic Morcellator (HM) for removal of intrauterine tissue appears to be safe and effective. Future perspective is on the ambulant setting.
Introduction: The HM has been reported as a safe and effective new technique to remove intrauterine tissue. Results in clinical practice have hardly been documented.
Materials and Methods: We retrospectively report our data on removal of myomas, polyps and residual placental tissue with the HM in 364 patients over a period of 4 years. All procedures were performed under spinal or general anesthesia.
Results: For myomectomy with the HM mean installation time was 8.7 minutes, mean operating time 18.2 minutes, and mean fluid loss 430 mL. Three out of 37 HM procedures were converted to resectoscopy related to a type 2 myoma. Mean installation and operating times for polypectomy with the HM were 7.3 and 6.6 minutes, respectively. No major differences were seen between HM polypectomy performed by either staff members or trainees. In 49 patients with residual placental tissue, mean procedure time was 23 minutes. A single case of perforation and 3 cases of postoperative infection were documented.
Discussion: Implementation of the HM for removal of smaller type 0 and 1 myomas, polyps and residual placental tissue appears to be safe and effective. Prospective comparative studies are needed to prove its cost effectiveness. If the HM device were available in a smaller diameter,

comparison with ambulant Versapoint treatment would be feasible for removal of smaller polyps.

Key-words: hysteroscopic morcellator, operative hysteroscopy, intrauterine tissue.

FC12_4

Cavaterm: literature, manufacturing process and own experience

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Introduction: Menorrhagia is common among premenopausal women. Treatment options are medical therapy, levonorgestrel IUD, hysterectomy and more recently hysteroscopic endometrial ablation using resectoscope, rollerball or Nd:YAG laser. Second generation endometrial ablation methods such as thermocoagulation and radioablation of the endometrium are easier to learn.
Materials and Methods: Cavaterm™plus, the newer version, consists of an adjustable silicone balloon with heating elements connected to a central unit providing vigorous fluid circulation so that the instilled glucose 5% solution maintains a constant temperature of 75 to 78°C with a pressure of 230–240 mm Hg in the balloon for 10 minutes. 5–8 mm endometrium and inner myometrium are coagulated. Temperature changes changes outside the uterus and in the cervix are minimal.
Results: Cavaterm™ is manufactured by Pnn Medical in Morges, Switzerland. I will show the movie I produced of the manufacture process. Cavaterm™ studies show a satisfaction rate of 72–93%. The amenorrhea rate is around 30% (11–74%) while only a few patients continue to bleed profusely. Hysterectomy rate is between 2 and 15.4% during follow up. A preoperative hysteroscopy and curettage are recommended to exclude uterine pathologies like submucous fibromas and to reduce the thickness of the endometrium. Secure contraception is mandatory. Up until 4 hours postoperatively sufficient analgesics should be used. In our clinic we performed 169 cavaterm procedures between January 2005 and June 2010. 19 cases (11.2 %) were followed by hysterectomies, 16 of these showed adenomyosis. The cause of these second procedures will be discussed.
Discussion: Cavaterm™, a Swiss product, is a safe and easy treatment for menorrhagia.

Key-words: Cavaterm™plus, satisfaction rate, hysterectomy rate.

FC12_5

The new submucous fibroids classification—STEPW classification

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The new submucous fibroids classification—STEPW classification
Objective: To evaluate the performance of the new submucous fibroid classification in predicting partial or complete fibroid removal on hysteroscopic myomectomy.
Design: Multicenter and Prospective study (Canadian Task Force classification II-2).
Setting: four hysteroscopy centers in Brazil, China, Italy and the United States of America Patients: four hundred fifty-four patients who underwent hysteroscopic resection of 465 submucous fibroids.
Intervention: Total or partial resection of the submucous fibroids on hysteroscopic myomectomy. The submucous fibroids were classified according to the Wamsteker and STEPW classifications, before the procedure. The validation of the two classifications was assessed using sensibility and specificity of each one with their best cut-off point. Positive and negative predictive values were also calculated. Test of equality of the two areas under ROC curves was performed for correlated samples. The agreement between the scales was measured by the kappa coefficient.
Measurements and Main Results: Of the 465 myomectomies studied, in 432 (92.9%) the removal of the myoma was complete, while in 33 (7.1%) the myomectomy was in complete. When we separate the submucosal myomas and to the two classifications and compare the results of the complete an incomplete myomectomies we have: all 320 (100%) fibroids with a score of less than or equal to four where are you completely removed and 112 (77.2%) of a 145 fibroids with a score greater than four were completely removed, signifying that all 33 (100%) cases of incomplete hysteroscopic myomectomy had a score greater than four, or in other words, were from Group II or III. When classified according to the Wamsteker classification we observe that myomas were completely

resected in 85 (98.9%) of 86 cases of level 0 fibroids, 257 (92.8%) of 277 level 1 fibroids and 57 (68.1%) of 69 level 2 fibroids.
Conclusion: Classifying submucous fibroids using the STEPW classification permits greater correlation with complete or incomplete removal of the myoma in hysteroscopic myomectomy.
Key-words: hysteroscopic myomectomy, submucous fibroid, classification.

FC12_6

Treatment of endometrial polyps. A systematic review

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Summary: A systematic review performed in order to explore the rationale of transcervical resection of endometrial polyps (TCRP).
Introduction: TCRP is usually performed in order to exclude malignant endometrial changes, to relieve abnormal uterine bleeding or to improve infertility.
Materials and Methods: Systematic review including electronic searches of MEDLINE, EMBASE and The Cochrane Library. Studies reporting the prevalence of premalignant/malignant tissue changes within endometrial polyps, as well as outcomes of endometrial polyp removal in terms of symptom relief and improved fertility were included.
Results: 46 studies met the criteria for inclusion (20 malignancy studies including 9266 women, 15 studies reporting symptom relief including 1034 women, 11 infertility studies including 935 women). Most studies were retrospective case series. Only two randomised controlled trials were identified. The prevalence of malignant tissue changes within endometrial polyps varied in the included studies between 0 and 12.9 %. Postmenopausal symptomatic women appeared to have the highest risk of premalignant and malignant tissue changes. The effect of TCRP on periodic blood loss seemed to be questionable, but all studies measuring the effect by general terms such as improved/not improved reported a favourable outcome (75–100 % success rate). Polypectomy appeared to have favourable outcome in infertile women.
Discussion: The evidence which substantiates the removal of endometrial polyps is limited and future research evaluating the outcome of this common procedure is required. Based on the available evidence, however, we provide recommendations for treatment of women with endometrial polyps.
Key-words: endometrial polyps, transcervical resection of endometrial polyps, hysteroscopic polypectomy.

FC12_7

Prognostic factors for the success of endometrial ablation in the treatment of menorrhagia

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Objective: To indentify prognostic factors that indentify success or failure of endometrial ablation in the treatment of menorrhagia.
Materials and Methods: We present a case-control study comparing patients with failed versus successful ablation. Failed ablation was defined as the need for hysterectomy due to persistent heavy menstrual bleeding after ablation. Successful ablation was defined as a satisfied patient after ablation for menorrhagie not needing hysterectomy. Both cases and controls were identified from the operation theatre registration in the Máxima Medical Centre between January 1999 and January 2009. From the medical files we collected for each patient data of the ablation technique, clinical history and follow-up status. We used univariable and multivariable logistic regression to estimate the risk of failure of endometrial ablation.
Results: We compared 76 cases to 76 controls. Potential prognostic factors that were indentified were dysmenorrhea (odds ratio 3.0 95% CI 1.5–6.1), having a submucous myoma (odds ratio 3.2 95% CI 1.5–6.8) and uterine dept (per cm odds ratio 1.3, 95% CI 1.0–1.6) were predictive for failure of ablation. Presence of intermenstrual bleeding, sterilization, a previous caesarean section and age did not predict failure of ablation.
Discussion: Dysmenorrhea, a submucous myoma and longer uterine depth are associated with failure of endometrial ablation. This information should be incorporated in the counseling of women considering endometrial ablation.
Key-words: menorrhagia, endometrial ablation, prediction.

FC12_8

The impact of uterine septum on implantation and live birth in infertile women undergoing IVF/ICSI

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Summary: Negative impact of untreated uterine anomalies on pregnancy and on live birth rates after embryo transfer (ET) in IVF/ICSI was confirmed by comparing the results of IVF/ICSI in infertile women with uterine anomalies to the results in infertile women with normal uterus.

Introduction: To test the results of self control studies showing negative impact of uterine anomalies on implantation and on pregnancy outcomes in IVF/ICSI.

Materials and Methods: The retrospective matched case–control included 2481 ETs in conventionally stimulated IVF/ICSI cycles The study groups included 289 ETs before and 538 ETs after hysteroscopic surgery. The results in the study groups were compared with two consecutive ETs in the control group. The groups were matched by age, body mass index, stimulation protocol, and quality of embryos, use of IVF or ICSI and infertility aetiologies.

Results: The number of embryos transferred, embryo quality and the absence of uterine anomalies significantly predicted the pregnancy rates: OR 1.7, 2.6, and 2.5 (P<0.001). The pregnancy and live birth rates before surgery were lower compared with controls, both in women with subseptate or septate uterus and in women with arcuate uterus. The differences in terms of pregnancy rate after ET were 12.4% versus 29.2%, OR 2.9 (P<0.001) and 13.6% versus 25.6%, OR 2.1 (P<0.002), respectively. The differences in terms of live birth rates after ET were 2.7% vs. 21.7% (P<0.001) and 2.8% vs. 21, 3% (P<0,001) respectively. After surgery the differences between study and control groups disappeared.

Discussion: The findings represent an important argument in favour of hysteroscopic resection of uterine septum in infertile women with septate, subseptate and importantly also with arcuate uterus.

Key-words: septate, subseptate, arcuate uterus, implantation and live birth in IVF/ICSI, hysteroscopic resection.

FC12_9

Removal of endometrial polyps by operative hysteroscopy and occurrence of malignancy.

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During a 3-year study period in our Department, we have found that the malignancy rate of endometrial polyps diagnosed and removed hysteroscopical ranges up to 2.9%, increasing in women with history of breast carcinoma.

Objective: To study the occurrence of endometrial polyps malignancy, after their excision by operative hysteroscopy.

Materials and Methods: This was a 3-year retrospective study in our Department, performed on 342 patients (35–79 y. mean age 64.5 years). They presented either for symptoms such as menstrual disorders/postmenopausal bleeding, or with ultrasound findings of endometrial polyps and/or increased postmenopausal thickness of the endometrium. In all these cases endometrial polyps were detected by diagnostic hysteroscopy (under local anesthesia or sedation and in special cases general anesthesia) and their removal was done by use of Polyp Snares under direct view. We used NCircle Nitinol Hysteroscopic Polyp Snare (COOK instrument, Fr 5.0 Length 35 cm), or Hysteroscopic Duckbill Polyp Snares (COOK instrument, d 15 mm, Fr 5.0 Length 50 cm).

Results: The mean diameter of polyps ranged from 0.4 to 3.5 cm. 147 patients (43%) were symptomatic, while 195 (57%) were asymptomatic. The hysteroscopic appearance of polyps was suggestive of malignancy in 14 cases (4.1%), because of the presence of multiple branching vessels. Histology established carcinomatous on their surface polyps in 10 cases (2.9%). All were classified as endometrioid endometrial adenocarcinomas Grade 1. Eight out of these ten patients diagnosed with malignancy were symptomatic, while seven were postmenopausal. Four of them had also history of breast adenocarcinoma (tamoxifen users). In 9 cases radical abdominal hysterectomy with bilateral salpingo-oophorectomy and bilateral pelvic lymphadenectomy was performed (st. Ia–Ib). A nulliparous 35y is under progesterone oral treatment for fertility reasons without any evidence of disease until now (six months after diagnosis).

Conclusion: During a 3-year study period in our Department, we have found that the malignancy rate of endometrial polyps diagnosed and removed by operative hysteroscopy ranges up to 2.9%, increasing in women with history of breast adenocarcinoma.
Key-words: operative hysteroscopy, endometrial polyps, endometrial cancer.

FC12_10

Incidence and hysteroscopic findings of osseous metaplasia: the experience of São Rafael Hospital and Instituto Diagnostico da Mulher, Bahia, Brasil
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Summary: Case series of 57 patients submitted to hysteroscopic surgery with anatomic findings of osseous metaplasia in two endoscopic gynecology centers in the major cities of Bahia, Brazil.
Introduction: Endometrial osseous metaplasia is a rare disease. Its etiology is not well defined, but it seems to result from fetal bone fragments which stimulate calcification after miscarriages and abortions, or by endometrial ostheogenesis. The metropolitan region of Salvador, capital of Bahia state, Brazil, has high levels of abortive procedures, even though it is prohibited by law in Brazil. Clandestine abortions are performed without proper conditions, which might enhance the risk of osseous metaplasia due to retention of bone fragments. The objective of the present study was to describe a case series of hysteroscopic procedures with osseous metaplasia findings.
Materials and Methods: Case series of hysteroscopic examinations performed at São Rafael Hospital and Women´s Diagnostic Institute, endoscopic units located in Salvador and Feira de Santana, the two major cities in Bahia State. All the 14,081 hysteroscopic examinations performed from 1987 to June, 2010 were included.
Results: The age of the patients varied from 20 to 56 years, most between 20 and 35. 57 cases (0.4%) were found, with hysteroscopic aspects of bony plates, fine spikes, coraliform bodies and osseous metaplasia associated to endometritis, Asherman´s syndrome, and polyps. 75% had been submitted to uterine curettage. The most frequent symptons were infertility, abnormal uterine bleeding and dysmenorrhea.
Discussion: Hysteroscopic examination is a very efficient method to diagnose and treat endometrial osseous metaplasia.
Key-words: osseous metaplasia, endometrial calcification, hysteroscopy.

FC12_11

The qualification of myomas to hysteroscopic myomectomy by using the sonohysterography with constant inusion pressure (SHG-CP)
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58 women underwent preoperative evaluation of myomas according to ESH classification and STEP-W classification by TVS, SHG, SHG-CP, DH and in all cases the free margin of myometrium over the myoma was measured using TVS, SHG and SHG-CP and this results were compared with intraoperative assessment by transrectal intraoperative ultrasonography (TRUS) during hysteroscopy. Electronically controlled constant infusion pressure of saline solution during SHG-CP (120 mmHg) was used.
Statistical analysis: Tau-b Kendall tests and comparison of correlation R and determination R2 indices.
Results: The group appartenance of myomas by ESH classification and STEP-W system was completely consistent with intraoperative results of assessment if to diagnostics the SHG was used. (tau-b=1). High conformity was obtained by using traditional SHG (tau-b=0.96 and 0.94) and DH (tau-b=0.84 and 0.85). The TVS showed the lowest conformity (tau-b=0.71 and 0.7). The median free margin of myometrium over the myoma in assessing by TVS was 8.91 mm, by SHG 6,9 mm, and by SHG-CP 6,7 mm however intraoperative assessment by TRUS was 6,84 mm. The highest correlation with intraoperative result has SHG-CP (R=0.99), high has SHG (R=0.95), and the lowest TVS (0.67).
Conclusions: SHG-CP allows the most precise assessment of group appurtenance in ESH and STEP-W, and evaluation of free margin of myometrium. Results of myoma evaluation and free myometrial margin assessment were most similar to intraoperative anatomy and prevents qualification to operation the myomas that in reality

during action of intrauterine pressure are in contact with perimetrium. There is the reason why SHG-Cp should be the method of choice in preoperative assessment of myomas qualified to hysteroscopic myomectomy. This especially concerns the myomas with deep penetration of myometrium.

Key-words: hysteroscopic myomectomy, sonohysterography, myomas.

FC12_12

Indications for surgery with office continuous flow mini-rectoscope size 16 Fr

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Objective: To evaluate efficacy and safety of a novel "Office Continuous Flow Mini-Resectoscope Line Gubbini". This revolutionary instrument combines the advantages of the modern mini-hysteroscopes with the versatility of traditional resectoscopic surgery. The small size of the instrument (16Fr) allows to perform operative procedures without the need of vaginal instrumentation (speculum and tenaculum) and cervical dilatation, reducing the risk of complications. The possibility of using different shape electrified and cold loops makes it possible to perform several operative procedures even including the treatment of endocervical pathologies and isthmocele which represent a great challenge for traditional resectoscopic surgery.

Materials and Methods: 144 patients diagnosed at office hysteroscopy as having endocervical and/or intrauterine pathologies were treated in operating room by means of "Office Continuous Flow Mini-Resectoscope. The cut-off for endometrial polyps was set at 3 cm for polyps and 2.5 cm for myomas.

Results: Three different operators (G.G, ADS and PC) successfully performed 25 endocervical polypectomies, 50 isthmoplasties, 12 metroplasties, 71 endometrial polypectomies, 14 myomectomies, 5 endometrial ablations and 3 synaechiolisis. All procedures were carried on without need of cervical dilatation under general anaesthesia. In no case the procedure required the need for the traditional 26 Fr resectoscope. No intraoperative complications occurred during surgery.

Conclusions: The hysteroscopic surgery with the 16 Fr-miniresectoscope based on a 2.9 mm 0° rod-lens optic allows an adequate treatment of many intrauterine pahologies traditionally reserved either to resectoscopic surgery or to office surgery using 5Fr bipolar electrodes or mechanical instruments. Polyps, uterine septa, synechiae and endocervical pathologies seem to represent ideal indications for using such novel instrument. The advantages of hysteroscopic surgery with miniresectoscope are mostly emphasised in those cases where the surgical space are reduced (endocervix, isthmic area, tubal recesses) or anatomical landmarks may be difficult to be identified (i.e. uterine malformations). Further studies are needed to evaluate its potentialities in office setting.

FC12_13

Limits of hysteroscopic myomectomy

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Hysteroscopic myomectomy currently represents the standard minimally invasive surgical procedure for treating submucous fibroids, with abnormal uterine bleeding and reproductive issues being the most common indications. The choice of the technique mostly depends on the intramural extension of the fibroid, as well as on personal experience and available equipment.

The purpose of such presentation is to provide a comprehensive survey of the available hysteroscopic techniques used to treat fibroids completely within the uterine cavity (G0) and those with intramural development (G1 and G2) mostly focusing on their feasibility and limits.

Free Communications 14_Robotics

FC14_1

Robotic hysterectomy versus conventional laparoscopic hysterectomy preliminary results of a randomized controlled trial

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Introduction: Safety and feasibility of robot-assisted procedures in Gynecology are well documented. So far no prospective trials comparing outcome, benefits and cost effectiveness of robotic and conventional laparoscopic procedures exist. In this randomized controlled trial we compare outcome of robotic with conventional total laparoscopic hysterectomy.

Materials and Methods: 50 Patients with benign gynecological disease were randomized to either robot-assisted (group1) or conventional total laparoscopic hysterectomy (group 2). Data on operating times, intra- and postoperative complications, hospitalization, quality of life and return to work were recorded.

Results: Results of the first 50 patients are given. There were no conversions to abdominal hysterectomy and no intra-operative complications in both groups; there was no conversion to conventional laparoscopy (group 1). In both groups age 46.3 (±3; group 1) vs. 44.2 (±5;) years and BMI 25 (±4) vs. 24.2 (±5; group 2) were similar. With 102.6 (± 26) min operating times for group 1 were significantly longer than for group 2 with 76.3 (±23) min (p<.001). There were no significant differences regarding blood loss 82.6 (±58) ml group 1 vs. 79.3 (±23) ml (p>.3), uterus weight 270 (±152)g vs. 260.4 (±213; group 2)g, hospitalization (3 days both), return to work (19 days group1 vs. 20 days) or quality of life index.
Discussion: Our preliminary results show comparable outcome for robotic and conventional laparoscopic hysterectomy except for significant longer operating times with the robot. These might be explained by the learning curve and could improve with more experience. For simple procedures like laparoscopic hysterectomy the robot does not seem to show any significant benefit.
Key-words: robotics, laparoscopic hysterectomy, randomized clinical trial.

FC14_2

Robot assisted laparoscopic transperitoneal para-aortic lymphadenectomy in the management of gynaecological cancers

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Objectives: Optimal cancer staging is essential. Imaging techniques sometimes underestimate tumours' extension. The presence of para–aortic lymph node metastases in locally advanced cervical cancer (LACC) identifies patients with poor prognosis. Occult para–aortic node metastases are found in 10% of stage 1 ovarian cancer. Laparoscopic para–aortic lymphadenectomy is one out of the diagnostic tools. We evaluated the feasibility and safety of a robot assisted laparoscopic para–aortic lymphadenectomy.
Study design: We prospectively followed up 15 patients who underwent robot assisted transperitoneal laparoscopic para–aortic lymphadenectomy, among which 13 had LACC, 1 a stage I epithelial ovarian cancer, 1 an advanced endometrial carcinoma.
Results: We isolated from 1 to 38 nodes per patient. 2 out of 13 patients with LACC had para–aortic node metastasis and were treated with adapted fields of radiotherapy. The patient with endometrial carcinoma had bulky para–aortic node metastases. The patient with ovarian cancer had negative nodes. One patient died at day 14 post operation from a necrotizing fasciitis. We encountered 1 intra operative arterial injury which was managed by laparotomy. One out of the 15 patients had chylous ascites that was spontaneously resolved and 2 patients had sub coetaneous lymphoedema which both spontaneously disappeared.
Conclusions: In this small prospective series, we observed that robot assisted laparoscopic para–aortic lymphadencetomy is feasible and provides the surgeon with great precision. The post operative mortality was probably independent of the use of robot surgery. Larger prospective trials are needed to validate the use of this technique.
Key-words: gynaecological cancer, para aortic lymphadenectomy, robot surgery.

FC14_3

Robotics in small: precision drive articulating instrument system

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Introduction: Over the last 30 years, laparoscopic surgery has gone through wonderful developments of techniques and instrumentations as a result of good cooperation between doctors, technical engineers and industrial companies. Endoscopic surgery arrived at HDTV cameras, the Cameleon optical system with 120 degrees peripheral vision, new haemostatic and cutting instruments, good suturing and finally robotics—at present best with the DaVinci. Do we still need other technologies?
Design: Yes. Let us have a look at the "Precision-Drive-Articulating Instrument System" from TERUMO. It consists of 3 components, a console, a handle and individual instruments. The console and handle are captial equipment with long use life. The instruments include a needle driver, monopolar L-hook cautery, monopolare scissors, Maryland dissector /grasper and are reusable with limited-usage. They serve for all surgical tasks and can be used in combination with conventional instruments.
Features and Benefits: As the instrument tip articulation is computer assisted, it allows the surgeon to control the movements through individual manipulations with yaw and roll controls on the handle's interface. The articulating instrument allows 2 more degrees of liberty to the conventional instruments with 4 degrees of liberty. Through articulation of the instrument tip, the system allows the surgeon to position the angles to the desired tissue planes easier. Fine dissection and cauterization is possible. The opening and closing of the jaws or blades are manually controlled through a trigger on the handle allowing the surgeon to have tactile feedback.
Results and Conclusion: First surgical experience has been gained in the LASTT training boxes and with animal

material and working on cadavers in the institute of anatomy. With this articulation and the resulting flexibility of the tip, after an initial learning curve, an easier dissection and suturing is possible. Compared to the present robotic systems these instruments are portable, will not cost very much and can be used in conjunction with conventional laparoscopic instruments. They facilitate easy and precise surgery.

Key-words: laparoscopy, robotics, articulation.

FC14_4

First animal trials using the alf-x telerobotic surgical system

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Introduction: The first animal trials using the ALF-X telerobotic surgical system are presented. Following the mainstream development of robotic systems that are able to aid surgeons perform complex tasks, a new development is emerging in the field involving a radically different concept oriented towards users' practical needs. This new telesurgical system is called 'ALF-X', standing for 'Advanced Laparoscopy through Force-reflection', and is the result of a fruitful research and development collaboration between SOFAR S.p.A. (Milan, Italy, and the EC-Joint Research Centre. The ALF-X system is a new robotic device with unique features such as tactile sensing, high degree of versatility and efficiency. Aim of the study: In order to assess the validity of the system, we conducted a series of experiments on female pigs in a veterinary facility.

Materials and Methods: The animal model was a female 45 Kg pig in which we replicated commonly performed laparoscopic operations like hysterectomy, salpingo ophorectomy, myomectomy, partial and radical nephrectomy, total pelvic exenteration and cholecystectomy. All cases were performed by a team of surgeons who helped to develop the clinical aspects of the system. Among the variables tested were: Use of a dedicated set of surgical instruments, Haptic force transmission (tactile feedback) and 3D Stereo vision, Definition of the appropriate multimodular set up for specific procedures (robotic arms positioning, angles, position of the assistant etc.), Ergonomic variables of the working station, safety, stability and reliability of the system, Ease of use for the surgeon, Implementation of an eye-tracking system for controlling the camera, Operating Room set up timing, Durability and of the re-usable instruments, Capability to perform complex reconstructive tasks (e.g. endo-suturing).

Results: Detailed reports on each one of these aspects as well as a movie will be presented together with the current status of its clinical applications. As a preliminary report, we can affirm that the ALF-X telerobotic system has proven to be an efficient, reliable and versatile aid to the surgeon who wants to expand his or her interests beyond the basic laparoscopic procedures. Its use promises to simplify the performance of complex surgical procedures and to establish a new standard in the field of robotic surgery.

Key-words: robotics, tele-surgery, tactile.

FC14_5

Robotic surgery in benign gynaecological pathology

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Summary: The aim of this study was to establish the feasibility, learning curve, complications, advantages and inconvenients of various robotic assisted laparoscopic surgery procedures in benign gynaecological diseases.

Introduction: Since fifteen years, robotic assisted laparoscopic procedures take an ingrowing place in surgical practice; mainly in urology. Oncological and non oncological gynaecologic surgeries are the second growing field of robotic surgery. The 3D view, the multi-articulated instruments and the ergonomic position of the surgeon allow easier complex procedures. In the department of Gynecology of C.H.R. Citadelle Hospital, University of Liège, we evaluated one and a half year of experience.

Materials and Methods: Between February 2009 and June 2010, 60 Robotic assisted laparoscopic procedures, for benign gynaecological indications, were performed. Robotic assisted hysterectomy was performed in 42 women, mainly for menorragia and adnexal mass. Robotic surgery was performed for conservative treatment of endometriosis in 9 patients, for tubal repermeabilisation in 7 patients and myomectomy in 2 patients.

Results: The mean operation room time, measured from induction of anesthaesia until recovery, was 226 min; 186 min for tubal reanastomosis, 215 min. for radical hysterectomy, 254 min for interannexial hysterectomy, 286 min. for myomectomy, 191 min for deep pelvic endometriosis of the recto-vaginal wall. The mean operation time was 197 min; 167 min. for tubal reanastomosis, 155 min. for endometriosis, 244 for myomectomy, 187 min for radical hysterectomy, 224 min for interannexial hysterectomy. The average BMI of our patients was 25.1. The average age was 40.36 years old. The median hospitalisation time was 4 days; 2 days for tubal reanastomosis,

4 days for radical hysterectomy, 4 days for interannexial hysterectomy, 3 days for myomectomy, 4 days for endometriosis. Intra-operative and post-operative complications were diagnosed only in patients who had undergone hysterectomy. In one case, vaginal laceration due to vaginal manipulation necessitated vaginal suture at the end of the procedure and in one case, post operative peritonitis required re-intervention for lavage of the abdominal cavity. Bacteroïdes Fragilis was identified and massive intravenous antibiotherapy was needed for more than 2 weeks. Two others patients were re-hospitalised for abdominal pain associated with inflammatory blood tests, antibiotics were administrated for 48 hours intravenously and for 10 days orally.

Discussion: These series represent a preliminary study of our learning curve evaluating the use of Robotic-Assisted laparoscopy in benign gynaecological pathology. Robotic surgery allows remote and comfortable surgery, minimally invasive techniques, precision, smaller incision, decreased blood loss, less pain and quicker healing time. Articulation beyond manipulators and 3D magnification result in improved ergonomic. However our learning curve is associated with longer operative procedure due in part to the setting of the robot, infection complication and in one vaginal laceration.

Conclusions: Critical evaluation of any new surgical approach requires a systematic recording of the advantages and complications.

Key-words: robotic surgery, gynaecological, benign.

Free Communications 15_Single Access Surgery

FC15_1

Monopolar electrosurgery through single port laparoscopy: a potential hidden hazard

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Background: Monopolar electrosurgery compared with other energy sources is associated with unique inherent risks and complications due to inadvertent direct and/or capacitive coupling or insulation failure of instruments. These dangers become particularly important with the re-emergence of single-port laparoscopy which requires close proximity and crossing of multiple intra-abdominal instruments.

Objectives: to determine the effects of monopolar electrosurgery on various tissues/organs during simulated single-port laparoscopic surgery in vitro and in vivo.

Design: Simulation in dry lab using liver from pigs and sheep and bowel and liver of anesthetized animals (one dog, one pig).

Setting: Two university affiliated teaching hospitals and animal facilities.

Measurements and Main Results: We used Valleylab Force 2 and FX electrosurgical generators (ESU) at power outputs of 40–60 watts and both high and low voltage (coag & cut) waveforms and 3 commercially available single port devices. The effect on tissue was recorded by pictures and video camera and graded visually and histologically using H&E. During activation of any standard monopolar laparoscopic instrument, capacitive coupled currents resulting in visible tissue burn (blanching) were noted by other adjacent instrument (graspers, etc) including metallic suction/irrigation cannulae and the laparoscope itself. Histopathology confirmed trans mural thermal damage reaching the mucosal surface of small bowel. *Conclusions:* During single port laparoscopy and use of monopolar RF, the proximity and crossing of instruments generates capacitive and/or direct coupled currents which may cause visceral burns.

Key-words: monopolar, single port, laparoscopy.

FC15_2

Laparoendoscopic Single Site Surgery (LESS) in gynaecology: a series of 60 cases

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Summary: Minimally invasive surgery has influenced the techniques used in gynaecology, with an overall minimisation of complications and increased patient satisfaction.

Introduction: To demonstrate the safety and feasibility of LESS Surgery in Gynaecology, a retrospective, descriptive, non randomized study.

Materials and Methods: 60 patients underwent LESS Surgery between October 2008 and February2010 , at Iaso Hospital and Attikon University Hospital, Athens, Greece. Indications included 64% Salpingo-oophorectomy, 15% Diagnostic Laparoscopy and treatment of Stage 1/3 Endometriosis, 16% cases for cystectomy, 5% of Total Hysterectomy.

Results: Duration of operation and of hospital stay, safety (morbidity and mortality), and patient satisfaction were assessed Estimated blood loss was 55 ml (range 10–300 ml) Intraoperative complications: 0% vascular injuries and 0% nerve or ureter injuries. Early postoperative morbidity included no major complications, 0.05% bladder infection and dysfunction and 0.1% of incision infection. 91% of patients were discharged to home the same day with an

average length of stay for these patients of 11 hours.
Discussion: Less Surgery seems to be a safe alternative to traditional Laparoscopy for the procedures performed in this study. Surgical time, safety and feasibility is similar, were as the cosmetic result and the post operative pain levels seem to be better accepted by the female patient. Further studies need to be performed and new instrumentation is necessary in order to perform more complicated cases.
Key-words: single access surgery, LESS surgery.

FC15_3

Laparoendoscopic Single-Site Surgery (LESS)—is it feasible in gynecological surgery?

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Introduction: The development of technical expertise in gynecological surgery and advances in surgical instrumentation allowed the gynecological laparoscopic surgeon to rethink the 'laparoscopic approach' to make minimal access surgery 'more minimal'. This led to the development of the laparoendoscopic single-site surgery (LESS).
Patients and Methods: Between March and September 2009 24 patients underwent adnexal surgery at our institution using the laparoendoscopic single-site surgery. The LESS technique was performed using the TriPortTM through an umbilical incision of 10 mm and bent laparoscopic instruments. We furthermore compared the LESS technique with a control group of 24 patients operated consecutively in the same period and for the same procedures with the conventional multiport laparoscopy.
Results: Comparing the LESS adnexal surgery with the conventional laparoscopic technique we found statistically differences between the operation time and mean hospital stay. The surgeon must master the use of novel bent instruments in close proximity to one another, but more importantly the surgeon and assistant need to work together in close proximity, and the technique requires a skilled camera driver and constant coordination. Overcoming these difficulties, the use of bents instruments enabled to perform operations such as cystectomy, salpingectomy and salpingoovarectomy.
Discussion: LESS technique for benign adnexal surgery was technically feasible and safe, representing a reproducible alternative to conventional multiport laparoscopic. Further prospective studies comparing the LESS technique and conventional multiport laparoscopic for a larger number of patients are required to confirm the current results and prove if the LESS technique improve clinical outcome compared with standard laparoscopy.
Key-words: LESS, TriPortTM, new technique.

FC15_4

Salpingectomy for ectopic pregnancy by transumbilical laparoscopic single site surgery with SILS system

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Summary: We report a serie of 25 patients treated for ectopic pregnancy by salpingectomy performed by single site laparoendoscopic surgery. This technic seems faesable for this indication.
Introduction: Aim of this study was to evaluate feasibility of salpingectomy for ectopic pregnancy by transumbilical laparoscopic single site surgery with SILS system (Covidien).
Materials and Methods: From January 2010 to July 2010, 25 patients who required salpingectomy for ectopic pregnancy were treated by laparoscopic single site surgery with SILS system (Covidien). Characteristics of patients, feasibility, per and postoperative complications and patient satisfaction were reported.
Results: Average age of patients was 28+/−6 years. Indication of salpingectomy was failure of medical treatment in 5 cases and suspicion of rupture of ectopic pregnancy for 20 patients. All patients were treated successfully by transumbilical laparoscopic single site surgery with SILS system (Covidien). Duration of procedure was 63+/−20 min. No per or post operative complication was reported. One patient was re hospitalised for one day for acute pelvic pain treated by antalgic without complication. All patients were satisfied by the transumbilical approach.
Discussion: Salpingectomy for ectopic pregnancy by transumbilical laparoscopic single site surgery with SILS system (Covidien).
Key-words: ectopic pregnancy, single site surgery, sils.

FC15_5

Single port access laparoscopic sacrocolpoxy with TriPort system

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Summary: Transumbilical single-port access total laparoscopic sacrocolpopexy (SPA-SP) was performed completely in 5 patients. SPA-SP with TriPort system seems feasible and need to be confirmed with larger series.
Introduction: Objective of the study was to evaluate the feasibility of SPA-SP with the TriPort system.
Materials and Methods: From 1 April 2009 through 1 July 2010, 5 patients who required sacrocolpopexy for genital prolapse underwent SPA-SP with the TriPort system at La

Conception Hospital, Marseille, France. Data about patient characteristics, feasibility of SPA-SP, per and postoperative complications, duration of procedure and follow up at one month were prospectively collected.
Results: SPA-SP with the Triport system was completed in 5 patients. The mean duration of the procedure was 140+/−23 min and the mean hospitalization 3.6+/−2.2 days. No per or postoperative complications were reported.
Discussion: SPA-SP with the TriPort system appears feasible. Larger series are necessary to confirm this study, and comparative studies with conventional laparoscopy are necessary to evaluate the benefits of this new procedure.
Key-words: sacrocolpopexy, single port access, TriPort system.

FC15_6

Total laparoscopic hysterectomy by single port access (TriPort System)

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Summary: Transumbilical single-port access total laparoscopic hysterectomy (SPA-TLH) was performed competely in 14/15 patients.Only one complication was reported.SPA-TLH with TriPort system seems faesable and need to be confirm with larger series.
Introduction: Objective of the study was to evaluate the feasibility of SPA-TLH with the TriPort system.
Materials and Methods: From 1 December 2009 through 1 July 2010, 15 patients who required hysterectomy for benign pathology underwent SPA-TLH with the TriPort system at La Conception Hospital, Marseille, France. Data about patient characteristics, feasibility of SPA-TLH, per and postoperative complications, duration of procedure and follow up at one month were prospectively collected.
Results: SPA-TLH with the Triport system was completed in 14/15 patients. Conversion to laparotomy was necessary for the tenth patient. Bladder injury was reported in one patient with a previous caesarean delivery. The mean duration of the procedure was 110+/−23 min and the mean hospitalization 3.6+/−2.2 days. Fibroma was the indication for hysterectomy for six patients, adenomyosis for three, and atypical endometrial hyperplasia for one. The mean weight of the uterus was 268+/−140 g.
Discussion: SPA-TLH with the TriPort system appears feasible. Larger series are necessary to confirm this study, and comparative studies with conventional laparoscopy are necessary to evaluate the benefits of this new procedure.
Key-words: total laparoscopic hysterectomy, single port access, TriPort system.

FC15_7

Single-port access laparoscopic-assisted vaginal hysterectomy: a pilot study with a new device

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Objective: To report the first series of single-port, transumbilical laparoscopic assisted vaginal hysterectomy (LAVH) using a novel operating device.
Materials and Methods: 10 patients affected by pelvic disease and uterine pathology indicating the laparoscopic assistance to vaginal hysterectomy. LAVH was perfomed using a laparoendoscopic single-site approach with a new multiport reusable trocar (S-Portal X-Cone Storz, Tuttlingen) and novel, specialized instruments, bowed in the shaft for triangulation.
Results: No conversion to multi-access standard laparoscopic technique or laparotomy and no intraoperative or postoperative complications were observed. Mean operative time was 90 minutes. The patients were discharged the second day after surgery and did not received any medication after 12 hours.
Discussion: Single port access for LAVH is feasible safe and effective, with good results in terms of cosmesis, postoperative pain and patients satisfaction.
Key-words: SPAL, LAVH, hysterectomy.

FC15_8

Laparoscopy single-port surgery in gynaecology: the analysis of an initial experience

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Objective: Laparoscopy single-port is one of the latest innovations in the field of minimally invasive surgery. We evaluated the feasibility of laparoscopy single-port in gynecology for benign conditions.
Design: The study was a case-series.
Setting: Tertiary Gynecology Endoscopy Center of University of Pisa.
Patients: Twenty-two patients who underwent surgeries for benign conditions
Interventions: All surgeries were performed using a market-available umbilical multiport trocar with curved and standard laparoscopical instruments
Measurements and Main Results: Patients with benign adnexal pathologies underwent salpingoophorectomy (n=14),

ovarian cyst enucleation (n=5), or salpingectomy (n=3). Conversion to a multi-access standard laparoscopic technique was not required in any patient and no intraoperative complications were observed. Mean operating time and postoperative pain were also evaluated.
Conclusions: One-trocar surgery is a feasible and safe technique. The improvement in cosmetic results associated with these minimal access techniques might be particularly desirable for young women in reproductive age.
Key-word: single-port surgery.

FC15_9

Laparoscopic port site closure: a randomized, double blind clinical trial comparing two topical SKIN adhesives

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Aims: To compare an Octyl/Butyl blended cyanoacrylate skin adhesive (LiquiBand® [LB] Laparoscopic, MedLogic Global Ltd.) and an Octyl based skin adhesive (Derma-Bond [DB] High Viscosity, Ethicon) for port site skin closure.
Materials and Methods: 460 patients requiring laparoscopic surgery were randomized to receive LiquiBand® Laparoscopic or Dermabond for wound closure. Wound characteristics, dermal apposition, suspected wound infection and wound dehiscence were assessed at 2 weeks, and cosmesis (modified Hollander score) at 3 months, post-procedure, by a masked evaluator. Secondary objectives were to assess speed of wound closure and user/patient satisfaction.
Results: 433 patients comprising a total of 1254 incisions (LB=618, DB=636), with wound length range 20–40 mm, completed follow up. There were no statistical demographic differences between groups. Primary outcome data was assessed using the Farrington-Manning (non-inferiority) statistical method. Dermal apposition (>50% apposition: LB 98.8%, DB 99%) and wound cosmesis scores (Modified Hollander cosmesis 6 of 6: LB 97.5%, DB 97.6%) were high for both skin adhesives. Both skin adhesives were found to be substantially equivalent in terms of wound dehiscence and rates of suspected infections. LiquiBand was found to be significantly (t-test) faster (LB 32.1 s, DB 50.3 s) and easier to use (LB 97.1%, DB 71.6%) than DermaBond. Masked evaluator and patient satisfaction with wound closure was equally high with both skin adhesives. Surgical users were significantly more satisfied with LiquiBand Laparoscopic when expressing, applying, delivering and using the adhesive.
Further analysis of covariants, including type of surgery performed (gynaecological, general surgical), location of incision (umbilical vs non umbilical), presence or not of deep tissue sutures, body mass index and incision length, shows a relationship effect on infection rates and wound dehiscence.
Conclusions: The two different formulations of skin adhesive are simple and quick to use and were highly effective for laparoscopic port site closure. They performed comparably in respect of the primary clinical outcomes (dehiscence, wound cosmesis and suspected wound infections). The effect of covarients with regard to port site complications is of relevance with the increased interest in single port site and robotic surgery and should not be disregarded.

Free Communications 16_Teaching & Training

FC16_1

Development of endoscopic surgery nursing in Turkey

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Diagnostic laparoscopy, begins with knowledge, technological developments and experience gained in this regard the growing number of physicians as a result of the rapid increase of applications operative today opened a new epoch in this matter has caused. Proliferation of studies in this field and be presented in the next Congress to provide a foundation study. Nursing in nursing school applications in 1961 were brought to the university level, descriptive, observational or experimental studies with the showing and conveyed. Studies are important to take care of individuals with all aspects (physical, psychological, sociological and economic) to enable reflection. First published in Turkey in this field of work that could be called the International Surgery Congress held in 1988, is located in the Section of Surgical Nursing; however, even wider in recent years has reached levels observed Nursing developments in laparoscopy is considered one of the first publication in 1996, the first National Theatre is a retrospective study published in Nursing Symposium. The part-operative study between the years 1979 to 1995, and diagnostic laparoscopy surgery (750 cases) and carried out between 1995–1996 because of infertility and the 240 benign masses adnexial videoscopic laparoscopic operative role in the team have been transferred. Turkey and the world's nursing study looked at key issues; laparoscopic procedure applied and the recipient organization, the initiative was carried bodies for the care of individuals in diagnostic and therapeutic interventions in the lives of stress and individual and family education and staff training was observed. Laparoscopy One of the important responsibilities of the nurses involved appli-

cations of the material is to be followed to the sterilization. Development of laparoscopic devices and applications are increasing in parallel with the open surgical field. Surgical team members as an important area for development of nurses in the perioperative period and maintenance of patient care by improving the search for evidence, the emphasis on standardization and accreditation activities are continuing. In Turkey, Gynecology and Obstetric Nursing, Pediatric Surgery, Nursing, Urology Nursing, Surgical Nursing, Theatre Nursing, mainly a lot of nursing practice in the areas of associations established, laparoscopy nursing for many conferences, symposia and courses organized and the practice field developments in a rapidly continues. A laparoscopy is the team work and an operating room nurse important part of this team who must also receive training required. Obstetrics and gynecology specialists and nurses in our clinic is currently held three times a year a monthly continuing education courses are laparoscopy. As nurses in 2009, "Endoscopic and Laparoscopic Surgery Nurses Association", founded this organization and we are engaged in a year.
Key-words: laparoscopic nursing, gynecology and obstetric nursing, nursing care and education.

FC16_3

Security aspects of modern endoscopic surgery- the 12 golden rules of operative laparoscopy

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Laparoscopy has become a common tool in modern gynaecological surgery. Almost thirty years have passed since the first laparoscopic appendectomy was performed by Semm in 1983. Basic standards are missing though laparoscopic interventions are performed worldwide. The objective of this paper was to report on our experience in laparoscopic surgery and education of young trainees. During sixteen years of laparoscopic surgery we have performed about fifteen thousand interventions (15000). Inspired by the possibility of videotaping operative sequences we built up an internal school of laparoscopy. As a function of the result of steady work and education in laparoscopic surgery we have worked out a common security standard which is to be considered at any intervention performed at our centre. We call this standard ′The 12 golden rules of operative laparoscopy′. We now report for the first time on our security aspects, the 12 golden rules publicy.
Key-words: golden rules, education and training, laparoscopy.

FC16_4

Measuring tissue handling: a new era in box trainers

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Introduction: Motion tracking systems for objective assessment of laparoscopic skills (e.g.boxtrainer/TrEndo, Virtual Reality) do not provide any information on one of the most important skills in surgery, i.e. tissue handling. This study was designed to develop and validate an instrument which can objectively assess laparoscopic tissue handling skills with real time (RT) feedback of these skills.
Materials and Methods: A force measurement platform was developed at the Delft University of Technology, The Netherlands. The platform was incorporated in a boxtrainer set up. For construct validity, Experts (n=9) and Novices (n=21) performed a suture task while force measurements were performed (Newton (N)). The influence of RT force feedback was tested with novices who were randomly assigned to either needle driving task training with (N=6) or without (N=6) real time feedback.
Results: Experts vs novices: mean force 0.95 vs 1.64 N, maximum force 2.74 vs 4.5 N and precision parameter volume 0.76 vs 2.68 N (all $p<0.05$). Experts directed their force differently during knot tying compared to novices: mean force x-axis 0.024 vs -0.024 N ($p=0.05$). Novices with RT force feedback learned to adjust their forces while novices without did not ($p<0.05$).
Conclusions: The force measurement platform gives the unique possibility to objectively assess forces used during tissue handling tasks in box trainers. This innovative instrument is a valuable addition to existing motion tracking systems. RT force feedback facilitates training of tissue handling tasks and will in the near future be indispensible in training of complex laparoscopic tasks.
Key-words: force feedback, tissue handling, laparoscopic boxtrainer.

FC16_5

Formulation of a detailed hysteroscopy report

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The aim is to establish a formal detailed hysteroscopy report which can be adopted by all minimal invasive surgery units, allowing more precise description of the procedures done,and facilitating more statistic analysis of the provided data.

Design: Retrospective analysis.
Setting: Shatby Maternity University Hospital.
Patients: 500 hysteroscopy reports including both diagnostic and operative procedures (300 and 200 respectively) , done during 2009, in shatby maternity university hospital, were reviewed against previously preliminary formulated detailed report.The absent data in each report was recorded.
Measurements and Main Results: In 40% of reports the indication of hysteroscopy was not mentioned. In 83% the need for prior cervical ripening was not included. in 92%, the hysteroscopic approach (conventional or vaginoscopic) was not mentioned. in 75%, cornual patency or lesions were not mentioned. in 80%, no comment on the endometrium was given in the presence of any focal lesions. In 37% the type of electrode used was not mentioned. in 77%, the fluid deficit and operative time were not mentioned, unless part of a research study.
Conclusions: Although hysteroscopic procedures appear simple and easy to comment upon, certain data are usually missing in each written report. Formulation of a universal precise detailed hysteroscopy report is needed to ensure full reporting, better statistic analysis of data and better interpretation of encountered difficulties and complications. A report is formulated (will be mentioned in the manuscript in details) which might need further evaluation, modification or refinement to be adopted by all minimal invasive surgery units.
Key-words: formal hysteroscopy report, adopted by all minimal invasive surgery units.

FC16_6

Diagnosis of injuries caused when achievement of pneumoperitoneum during gynaecological laparoscopy in animal model: translation to human

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Introduction: During gynecological laparoscopy, we are used to perform technique of entry and achievement of pneumoperitoneum with Veress needle. That technique and entry with first trocar is done 'blind mode' in some way. Even checking the instruments are correctly placed, we could have any doubts about whether we have hit accidentally any abdominal structure.
In that case: What should we do? Should we check abdominal cavity immediately? Where do we review? Would we be fully aware during the whole operation of a covered injury?
Trying to answer these questions, we posed in animal model a surgical simulation of the mentioned issues.
Material and Methods: The experiment was performed with two female "Large White" pigs distributed from official authorized farms. Weight: 30 kg.
We followed European regulations on animal experimentation and had permission from an ethics committee that approved the practice.
For the endoscopic surgery, we used technical equipment as:

- Karl Storz Endoscopy High Definition Tower: Image1 H3,
- WideView HD Monitor with AIDA system.

Specific laparoscopic instrumental: Veress needle, 5-10 mm trocars, Forceps, dissectors, and scissors.
We equipped two operating rooms, with two both animals anesthetized for gynecological laparoscopic surgery, the procedure consisted in dissection of the ureter between the suspensory ligament of ovary and its meatus in bladder.
For this exercise we suspended the bladder through the abdominal wall in order to facilitate dissection, and urinary catheterization it is not performed.
Operating Room 1:

- A team of surgeons (teachers) began the procedure. The back side of the bladder and large intestine was intentionally punctured with Veress needle. That site was marked with two endoscopic hemoclips (one on each side of the puncture site) to locate iatrogenic intestinal injury puncture site, which was outside of the surgical field.
- Another surgeon in training, previously agreed this exercise, entered the room in that moment and completed the dissection of the ureters without knowing existence of the iatrogenic injury.
- Before ending the procedure, surgeon in training left the room. Remaining surgeons punctured aorta with Veress needle, removed the camera and surgeon in training was invited to enter again to continue the contralateral ureter dissection without knowing this new development.

Operating Room 2:

- Another team of surgeons (teachers) began the operation and bladder is injured by placement of 5 mm trocar and so the large intestine with another 10 mm trocar.
- Another surgeon in training, previously agreed this exercise, entered the room in that moment and completed the dissection of the ureters without knowing existence of the iatrogenic injury.

Results: Surgeons in training, without knowing the existence of voluntary iatrogenic injuries, were evaluated and scored.
OR1: Punctures with Veress Needle of bladder and large intestine were unnoticed by these participants. On the other hand, major vascular injuries like aorta ones, were fully noticed.
O*R2:* Punctures with trocars of the bladder were discovered at the beginning of the management by surgeons in training that entered room after the iatrogenia. Intestinal injuries were all noticed during the procedure.
Discussion: During laparoscopic surgery, some 'minor' injuries could cause more harm that other hypothetically considered 'major'. Ending up in tortuous postoperative, involving us to re-operate our patients with suspected intestinal or urologic injuries, that weren't warned time.
As noted in our experience in animal models, major injuries by trocar puncture in the bowel and / or bladder can be found by:

- Own morphology.
- The content of the injured structure, although it is outside surgical visual field.

Moreover, vascular lesions, even minor, will be warned by the surgeon and if large, even in form of retroperitoneal hematoma, not easily recognizable at first sight, signs and symptoms of hypovolemia such as tachycardia, hypotension, etc. would be reflected on anesthesia monitors.
On the other side, the punctures by Veress needle, as we could observed in our work, could be difficult to discover. 'Clean' entries usually have no problems, but if needle is moved inadvertently during the achievement of the pneumoperitoneum, injuries like perforations could be more sinous, although smaller ones could not manifest themselves during the procedure but immediately after and we could have to re-operate the patient.
Our last recommendation consists in, before ending surgery, we should review the every digestive, urologic and vascular structures not just the operatory site but near entry places of trocars and Veress needle like offenders agents.
We conclude translating these commentaries to human surgery and we add that postoperative sequences of gynecologic laparoscopy are usually well tolerated by the patient. Contrary, if they are insidious:
Watch for our patient and even discharge, re-evaluate the patient in a week!
More comprehensive checkings, like rectal insufflations or bladder refilling with methylene blue will depend on the necessary dissection in the strategy for that surgery, mainly oncologic processes or severe endometriosis.

Free Communications 17_Technical Tricks and New Instrumentations

FC17_1

Laparoscopic utero-sacral plication addressing apical vaginal prolapse

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Objective: To describe a simple, effective, safe, and minimally invasive surgical technique: Laparoscopic Utero-sacral (US) ligament plication, used to address apical vaginal prolapse and report objective clinical data that demonstrate successful outcome.
Materials and Methods: 10 patients with apical vaginal prolapse underwent laparoscopic uterosacral plication either as a primary procedure or as an adjunct to laparoscopic paravaginal repair or total laparoscopic hysterectomy. Data was collected by retrospective chart review and clinical interview. Videos were recorded for demonstration of technique. The ureters are identified and releasing incisions made medial to the uterosacral ligaments. Non- absorbable, monofilament, sutures 0— (Monosof ™) are run continuously from a posterior position anteriorly onto the pubo-cervical fascia. Extracorporeal sutures are tied and tightened to shorten the US ligament, elevating the vaginal apex. Cystoscopy with intravenous indigo carmine is performed to ensure there is no ureteric injury.
Results: Pelvic organ prolapse quantification (POP-Q) assessments were made pre and post operatively and at 3 months post surgery, providing an objective measurement of the surgical result. POP-Q demonstrated an immediate improvement in the prolapse of all 10 patients. However from 3–12 months after initial operation 3 patients reviewed required further surgery. Two women who had chosen to retain their uterus required a hysterectomy. A third patient required posterior colporrhapy. Subjectively 70% of patients reported a "satisfactory to excellent" result. There were no major complications or ureteric injuries.
Conclusion: This case series demonstrates the safety and effectiveness of the laparoscopic equivalent of a traditional established procedure to address apical vaginal prolapse.
Key-words: uterosacral ligaments, apical prolapse.

FC17_2

IBS integrated Bigatti shaver, a new approach to operative hysteroscopy—a preliminary study

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At present conventional resectoscopy can be considered the gold standard procedure for major operative hysteroscopic operations.
Despite well-recognized advantages of resectoscopy, several problems such as, fluid overload, lack of visualization, uterine perforation due to monopolar or bipolar current and long learning curve remain still unsolved.
We have made in cooperation with Karl Storz GmbH & Co. a new shaving system that introduced through a straight operative channel of a panoramic 90° optic allows to perform all kinds of major operative procedures such as polypectomy, Type0, 1, 2, myomectomy and endometrial ablation.
We have performed 44 operative hysteroscopy, including 24 polyps, 15 submucosal myomas, 2 polyps + submucosal myomas, 3 endometrial ablation. The polyps size ranged from 5 to 40 mm and all procedures were performed with the IBS. The mean time for polyps resection was 3’ 28”. 10 cases of myoma resection were performed exclusively with the IBS, the size ranged from 10 to 30 mm of which 4 Type 0, 2 Type 1, 4 Type 2 and the mean resection time was 14’. For 5 cases of myoma resection we started the operation with the IBS and we ended the procedure with the conventional monopolar resectoscope. The myomas size ranged from 20 to 40 mm of which 3 Type 0, 2 Type 2 and the mean resection time was 32’.
When the IBS was used the dilatation number reached 8,5 Hegar size that increased to 9,5 when we switched to conventional resectoscopy. We used Sorbitol Mannithol at the beginning of the study and in all cases that we suspected the possibility of conversion to conventional monopolar resectoscope. As our learning curve improved we switched to normal saline. No coagulation was needed when the IBS was used.
Two overload complications occurred, one was not depending on the method but to a malfunctioning of the endomat system. The second complication occurred during a G2 3 cm myoma resection. This preliminary study is intended to evaluate the feasibility of this new technique that offers considerable advantages such as reduced dilatation of the cervix, better visualization during the procedure as tissue chips are removed at the same time of resection, no coagulation or cutting current is needed, the use of normal saline instead of sorbitol and mannitol and a much faster learning curve.

Key-words: operative hysteroscopy, new instrumentation, resectoscopy.

FC17_3

Single incision hysterectomy

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The Single incision laparoscopic surgery starts to belong to our daily practice. In our service of gynecologic surgery from June 2009, 83 patients have been operated of hysterectomy. We have identified two groups; group A; 40 patients operated with traditional laparoscopic approach, and the group B; 43 patients submitted to the single incision laparosocpic surgery approach; SILS of “Covidien.”. The patients admitted to the study had an uterus with ultrasound measured dimensions among: 7/16 cm longitudinal , 3.5/6 cm transversal,2.5/5 cm front rear. The aim of the study was to evaluate the advantage of the use of this new approach to the gynecological laparoscopic surgery, applied to the hysterectomy, analyzing the operating time, the cost of the technique, use of drugs, the hospitalization and the pain. In conclusion the belonging patients to the group B take advantage of a precocious discharge 33% less, of an important reduction of the pain score. The operating time seems to be a little superior to the classical laparosocopic surgery, with a learning curves of 4 interventions. The single incision laparoscopic surgery, finds frankly the place in the conventional gynecologic surgery.

Key-words: single incision laparosocpic surgery, mini invasive hysterectomy, gynaecologic surgery.

FC17_4

Audit of first UK clinical experience of Argon Neutral Plasma energy in gynaecological laparoscopic surgery

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Summary: An audit was undertaken on the outcome of 47 patients after the treatment of endometriosis using a new laparoscopic energy source: neutral argon plasma energy. The PlasmaJetTM was assessed for safety, efficacy and ease of use in advanced laparoscopic surgery.

Introduction: The PlasmaJetTM is a new device derived from technology developed for the Russian space exploration programme which produces a fine jet of argon plasma by heating argon gas at a very low flow, so does not have the problems inherent in the Argon Beam Coagulator. An audit was carried out to assess the outcome of patients treated with the PlasmaJetTM for endometriosis, to see if it compared favourably with lasers, electrosurgery and harmonic scalpels that are currently in use.

Materials and Methods: An audit was undertaken between September 2008 and June 2010 under the auspices of one lead surgeon. 47 patients were treated with the PlasmaJetTM, 8 patients treated by laser were included for comparison. Questionnaires were sent to all 55 patients to obtain their gynaecological history pre-operatively. A Visual Analogue Scale obtained the pain score: pre-operatively and at 6 months post-operatively.
Results: We will show the comparison between the pain scale pre-operatively to that at 6 months post-operatively following the treatment of endometriosis with the PlasmaJetTM and laser.
Discussion: We performed an initial pilot study to assess the safety, ease of use and cost effectiveness of this new plasma kinetic energy source and found that it compared favourably with other devices in current use. We now present data of this group of patients, showing the efficacy and long term pain relief of this new device.
Conflict of Interest: Professor Sutton is a Consultant advisor to PlasmaJetTM.
Key-words: Neutral Argon Plasma energy, laparoscopic surgery, endometriosis.

FC17_5

Hemostasis with Ligasure compared to conventional bipolar instrument in laparoscopic hysterectomy and/or salpingo-oophorectomy, a randomised clinical trial

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Introduction: Effective haemostasis is essential in laparoscopic surgery. Excessive bleeding during laparoscopic surgery is associated with an increased risk on urological complications and conversions to laparotomy. Sealing- compared to ultrasonic techniques are associated with less blood loss and shorter surgery time in colorectal surgery. We compared the effect of Ligasure versus conventional bipolar technique on operation time and blood loss during laparoscopic hysterectomy (LH) and laparoscopic salpingo-oophorectomy (LSO).
Materials and Methods: Randomized controlled trial, performed in four centres. 131 LH and 100 LSO patients were randomized for Ligasure (5 mm) or conventional bipolar instrument. Primary outcome is surgery time. Secondary outcome parameters are time to dissect ovarium proprium or infundibulopelvic ligament, intraoperative blood loss and subjective efficacy and handling parameters.
Results: There were no differences in baseline characteristics, uterine or ovarian sizes during LH or LSO in both arms. The mean surgery time using Ligasure versus bipolar was 94.0 and 97.5 minutes during LH ($p=0.91$) and 41.0 and 39.2 minutes during LSO ($p=0.67$), respectively. The mean blood loss using Ligasure versus bipolar was 229 versus 287 ml during LH ($p=0.59$) and 38 versus 33 ml during LSO ($p=0.84$). Various subjective efficacy and instrument handling parameters were significantly different between the participating centres.
Conclusions: There were no significant differences in operating time and blood loss using Ligasure versus bipolar instruments during LH or LSO, users satisfaction parameters were significant different between participating centres.
Key-words: laparoscopic hysterectomy, laparoscopic salpingo-oophorectomy, vesselseal.

FC17_6

Is it true that laparoscopic anterior ligamentopexy is not effective for pain control in retroverted uteruses?

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Introduction: Our aim is to evaluate clinical outcome after laparoscopic anterior ligamentopexy for retroverted uterus associated with pelvic pain. This is a prospective study with a duration of 36 months and a mean follow up of 19 months in Strasbourg University Hospitals and IRCAD/EITS.
Materials and Methods: We found the association of chronic pelvic pain, retroverted uterus, pain relief with ventral decubitus and no other obvious etiologies for pelvic pain in many patients presenting to our department. Twenty two patients presented these four criteria and were enrolled in this study. We started with intraoperative correction of uterine retroversion by pulling ventrally on the round ligaments. The change of uterus'color from purple to pink-red is required so that laparoscopic anterior ligamentopexy is performed. Two inscisions of 1.5 cm are done in each iliac fossa. The rectal aponeurosis is opened and a Kocher clamp is passed through the internal inguinal ring. The round ligaments are grasped and attached to the rectal aponeurosis with non absorbable suture. Local anaesthetics are injected under the aponeurosis and in the round ligaments at their attachments to the aponeurosis.
Results: Pre operative and post operative pain scores are assessed by visual analogous scale. Type and postoperative duration of use of pain killers are also noted. Fertility data and subsequent surgeries for other abdominal pathologies are collected. Results are still ongoing.
Conclusion: Preliminary result analysis show good results for pain control after laparoscopic anterior ligamentopexy. Since pelvic pain associated with uterine retroversion is still a challenging and controversial pathology to diagnose and treat, randomised controlled study are mandatory.
Key-words: chronic pelvic pain, anterior ligamentopexy, retroverted uterus.

FC17_7

First clinical experiences using a novel device (BIOPSIS®) integrating endometrial biopsy and saline infused sonography

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Objective: A novel device is tested combining saline infusion sonography (SIS) and endometrial microcurretage in order to decrease the number of vaginal speculum introductions.
Design: prospective descriptive study.
Setting: outpatient department of teaching hospital.
Patients: 98 consecutive patients with abnormal uterine bleeding and thick endometrium (>4 mm post and >8 mm or abnormal preovulatory).
Interventions: A novel device combining saline infusion for transvaginal sonography and aspiration for endometrial sampling was tested. An open-sided speculum was used. The novel device has a more rigid outer catheter then the Goldstein catheter (3 mm) and is available containing a built in compressible reservoir for saline fluid, single hand use. Retracting the plunger in the device leads to aspiration of endometrial tissue.
Results: Following introduction (86 patients : pre=54; post: 32), reliable sonographic imaging was assured. Introduction was painful in 11 women(>2/10 on VAS [4 pre; 7 postmenopausal]). In 56 patients endometrial sampling was performed following saline sonography(S), in 30 women sampling was done prior to water contrast ultrasound (B). In 80 patients sufficient endometrial tissue was aspirated for histological diagnosis (pre: 54; post: 26). Remaining 6 (postmenopausal) women showed atrophy and /or polyp(s), the amount of tissue did not depend on the sequence of performing the two diagnostic modalities(pre: S=38; B=16 Vs post S=11; B=9). The time needed to perform the procedure was less than 3 minutes in 85% of patients.
Conclusion: clinical assessment of a novel device (BIOPSIS®) integrating endometrial biopsy and infusion of saline for uterine sonography demonstrated to be an effective diagnostic tool.
Key-words: abnormal bleeding, endometrial biopsy, saline infused sonography.

FC17_8

The use of "precision-drive articulating instruments" system in laparoscopy

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Introduction: The ability to provide dexterity and visualization to the surgeon is essential in laparoscopic surgery. Traditional laparoscopic surgery can be demanding on the surgeon as the instruments are straight and rigid which can often require the surgeon to work at awkward angles. This results in working at a horizontal angle of >45°, which significantly increases the workload of the surgeon and decreases the visualization of the anatomy. Particularly in gynecologic cases with increased uterine size, large myomas or large ovarian cysts, these anomalies can create an obstruction to important structures, vessels and organs. Various laparoscopic surgical instruments have been developed to incorporate articulating freedom and maximize tissue manipulation however they are all manually controlled by the surgeon. While allowing optimal triangulation and increased visualization, it requires significant management control from the surgeon which may increase the learning curve for advanced cases. Enhanced anatomical access and control is observed with articulating instruments however this demonstrates a learning curve for the additional maneuvers. The advent of a precision driven articulating system will show advanced maneuverability, optimum tissue manipulation and triangulation without manual complexity of traditional endoscopic instruments. With an array of instruments comprised of grasper, dissector, and scissors The Terumo "Precision-Drive Articulating Instruments" System ™ consists of three components, a console, a handle and individual instruments. The instruments are used under direct surgeon control at the OR table, are hand held, and can be used in conjunction with conventional laparoscopic instruments. Each instrument is 8 mm in diameter and provides an additional 2 Degrees of Freedom (Yaw and Roll of the instrument tip, independent of the shaft) to the 4 degrees of freedom allowed by standard laparoscopic instruments (pitch, yaw, roll and surge). This enables surgeons' the advantages of articulating instruments without the complexity of new learning curves. The features of the Terumo articulating instruments provide techniques that are easier to adopt and faster to perform.
Design: 6 cadaveric dissections and procedures were performed by 4 surgeons from the University of Louisville at North Western University to demonstrate the differences in dexterity and access to the pelvic organs with that of traditional laparoscopic instruments. These dissections were done over the course of 6 months and the procedures consisted of a laparoscopic myomectomy, supracervical hysterectomy, total hysterectomy and sacrocolpopexy.
Methods and Materials: The Terumo TRAM was utilized in this preliminary study and the instruments used were the needle driver, monopolar L-hook cautery, monopolar scissors and Maryland Dissector.
Results: All the procedures were completed without having to terminate due to technical difficulties. The participating surgeons were able to confirm increased ability to access anatomy that is commonly difficult in laparoscopic proce-

dures. Due to the decreased time spent manipulating tissue and positioning for suturing there was an increased ability to coordinate movements and optimally position the instruments for critical steps in the procedure. Noted advantages with the procedures included; 1. Approach to the uterine vessels for coagulation in hysterectomies 2. Contralateral approach to the vesicovaginal junction and uterine vessels in the single incision procedures 3. Ability to suture mesh in sacrocolpopexies to the posterior aspect of the cervix 4. Ease with handling extreme horizontal and vertical planes in myomectomy defects for suturing 5. Increased precision to perform adhesiolysis due to the articulation of the instruments

Conclusions: With the benefits of laparoscopic surgery, surgeons should strive to maximize their visualization and dexterity. This is somewhat limited by the fixed position entry ports and straight laparoscopic instruments. As this is technically difficult to execute, the introduction of a power driven instrument can create 320 of rotation and increase the surgeon's ability to achieve optimal tissue manipulation and visibility. The articulation of these instruments also lessens the learning curve in laparoscopic suturing that many have succumbed to. Although this study is preliminary it offers the criteria for evaluating the superiority with power driven instruments that possess an articulating feature. Future studies plan to show the advantages of this system and how it can apply to laparoscopic procedures and suturing.

Key-words: articulating, Terumo.

FC17_9

Ultrasound-guided transcervical radiofrequency ablation of uterine fibroids: safety and preliminary clinical results in a prehysterectomy model

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Summary: This study utilized a closed abdomen, prehysterectomy approach to evaluate the safety of a new transcervical device (VizAblate™) that combines real-time intrauterine sonography with radiofrequency (RF) ablation to treat leiomyomata.

Introduction: The Gynesonics VizAblate™ System is an ultrasound-guided radiofrequency ablation system for the treatment of symptomatic uterine fibroids. It is designed to be safely performed by gynecologists in an inpatient or outpatient setting and is a combination of two known and mature technologies: ultrasound for visualization, and RF energy for ablative therapy. More than 100 subjects have been treated with the VizAblate System in an open abdomen, perihysterectomy setting to fully characterize the system; this work confirmed the ability to predictably visualize, target and treat submucosal and intramural fibroids up to 5 cm in diameter. The current study is designed to assess the safety and performance of the System when used as intended in a closed abdomen setting.

Materials and Methods: This single-site feasibility study enrolled 13 women with uterine fibroids previously consented for hysterectomy at a university hospital. In a closed abdomen setting with the patient under epidural anesthesia supplemented by conscious sedation, an 8-mm delivery device containing the intrauterine ultrasound probe (for imaging) and RF electrodes (for treatment) was inserted transcervically into the endometrial cavity. Intrauterine sonography was performed to identify and target fibroids, making use of a graphical overlay depicting the user-selected ablation zone and corresponding safety border. Treated fibroids received up to two ablations using RF energy (maximum output 150 W) for 4–9 minutes at 1050 C in order to maximize the volumetric fibroid ablation at the physician's discretion. Immediately after the procedure, the investigator completed a diagram indicating the location of each fibroid within the uterus with an estimate of the percentage ablated, and a questionnaire to assess confidence in the intrauterine visualization. An independent sonographer completed the questionnaire based on videotapes of the procedure produced with the ultrasound display. Following immediate hysterectomy, uteri were sectioned and stained with the viability stain triphenyltetrazolium chloride to quantify the fibroid ablations dimensions.

Results: Thirteen women were enrolled and 12 were treated; one subject was not treated due to adenomyosis detected on intraoperative sonography, while another subject was treated for what ultimately proved to be adenomyosis on pathology. Twelve fibroids ranging from 0.8–5.1 cm in diameter were treated; one of the larger fibroids received dual overlapping ablations. All targeted fibroids contained volumetric ablations ranging from 1.8 cm3 (1.9 cm diameter) to 30.9 cm3 (4.0 cm diameter; dual overlapping ablations), depending on the desired ablation size. Up to 100% of a fibroid's volume was ablated in this fashion (mean 62.1%; range 15%–100%). There were no complications or thermal damage to the serosa; all subjects were discharged in good condition. There was excellent agreement between the investigator's assessment of the ablation location relative to the fibroid capsule and serosa and with the final pathology report. The principal investigator and an independent sonographer confirmed the clinical ability to visualize and target fibroids with a high degree of certainty.

Discussion: These results demonstrate that transcervical RF ablation of fibroids under intrauterine sonographic guidance can be produced using the VizAblate system in a closed abdomen setting with a high degree of reliability and without adverse events.
Key-words: radiofrequency ablation, fibroids, intrauterine ultrasound.

FC17_10

A prospective randomized experimental study to investigate the peritoneal adhesion formation of non-contact Argon Plasma Coagulation (APC) in a rat model

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Summary: APC induces peritoneal adhesions despite of its non-contact nature. The extent of adhesion formation is dependent on the energy applied. The present adhesion model is suitable for the assessment of adhesions induced by APC of different energies and supports the development of further APC instruments with reduced adhesion formation.
Introduction: Adhesions occur after peritoneal trauma. APC thermally devitalizes the tissue. To date it has never been investigated whether non-contact APC modes have an influence on the formation of peritoneal adhesions. The aim of the study is to determine the capability to induce peritoneal adhesions by APC using different argon plasma energies in a rat model.
Materials and Methods: 10 rats were treated in a prospective, randomized, controlled and blinded study by APC using different energies. Rats were anaesthetised and the abdominal wall was incised longitudinally. Peritoneal lesions with a low (45±3 J) and a high APC energy (109±9 J) were performed on each abdominal side wall. After 10 days the peritoneal trauma sites were assessed by second look. The occurrence and quality of adhesions was statistically evaluated.
Results: Adhesions due to APC with high energy occurred in 64% of cases and with low energy in 6% of cases ($p < 0.0001$). The low APC energy results mainly in avascular and filmy vascular adhesions (75%) whereas the high energy results mainly in dense adhesions and adhesions including surrounding organs (81%).
Discussion: Previously published studies on adhesion formation are based on direct contact with the tissue. This study indicates that non-contact application of energy, in contrast to direct applications must comparably be able to activate the dynamic process of adhesion formation.
Key-words: adhesions, argon plasma coagulation, thermal damage.

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FC18_1

Combination of laparoscopic and vaginal surgery for severe Pelvic Organ Prolapse (POP)

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Objective: To assess the feasibility and efficacy of combined laparoscopic and vaginal approach for POP.
Design: Prospective study of women presenting with severe POP. Symptoms and quality of life (QOL) were assessed using King's Health Questionnaire (KHQ), PFDI-20 and PFIQ-7. Prolapse was assessed using the POP-Q system and all patients underwent multichannel urodynamics. Postoperatively all patients were similarly assessed at 6 and 12 months.
Setting: Urogynaecology department of a teaching hospital.
Patients: 27 consecutive women with POP of which 22/27 (82%) had≥grade 3 POP-Q prolapse. Interventions Laparoscopic sacrocolpopexy with or without vaginal colporrhaphy and midurethral sling.
Measurements and Main Results: 5/27 (19%) women had vault prolapse and underwent laparoscopic sacrocolpopexy. Of the remaining 22 women with uterus 12 opted to retain their uterus and had laparoscopic sacrohysteropexy whereas the remaining 10 underwent initially a total (laparoscopic or vaginal) or subtotal (laparoscopic) hysterectomy which was followed by sacrocolpopexy. The suspension was performed using macroporous monofilament polypropylene mesh. 18 out of 27 women had also a tension free vaginal tape (TVT or TVT-O) as preoperatively were found to have urodynamic stress incontinence. 20 patients also had anterior/posterior colporrhaphy and one had laparoscopic repair of paravaginal defects. At follow-up there was a significant improvement in all POP-Q measurements with no change of the vaginal length. All 27 patients had a well supported central pelvic compartment, having a POP-Q stage <1. Two women (7%) had a grade 2 cystocele but remained asymptomatic. We found a significant improvement in the symptomatology and QOL as assessed by KHQ, PFDI-20, PFIQ-7 questionnaires. There was one (4%) case of vaginal mesh erosion which was excised successfully under local anaesthetic.
Conclusion: For women with severe POP the combination of laparoscopic and vaginal surgery is feasible providing an optimal anatomical and functional result.
Key-words: pelvic organ prolapse, laparoscopic sacrocolpopexy.

FC18_2

Postoperative pain after laparoscopic sacropexy

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Purpose: Laparoscopic surgery is associated with a reduced morbidity. Compared to open access, postoperative pain is reduced. The aim of this study was to analyse the intensity and course of postoperative pain and the influence of co-factors (adipositas, duration of operation, drugs).
Materials and Methods: 287 patients suffering from genital prolapse higher than POPQ 1 and laparoscopic sacropexy were included. Patients were asked postoperatively to evaluate their pain using a four point verbal rating scale (VRS). Additionally medical records were analysed concerning drug application and co-factors.
Results: Patients could distinguish between abdominal pain and shoulder pain after laparoscopy. Shoulder pain was rarely influenced by drugs, but disappeared after two to three days. Abdominal pain showed a maximum at day one and a good response to non-steroidal antiphlogistics.
Conclusions: Laparoscopic sacropexy is associated with a moderate degree of postoperative pain. Non steroidal antiphlogistics should be preferred especially during the first two to three days after operation.
Key-words: pain, sacropexy, antiphlogistics.

FC18_3

Elevated infect parameters after laparoscopic sacropexy: infection or posttraumatic reaction?

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Purpose: Leucocytes and C- reactive protein (CRP) levels are often used to detect infections. Dependent on the degree of tissue trauma, elevated levels are also found after open surgery. The aim of this study was to evaluate the diagnostic validity of leucocytes and CRP levels after laparoscopic sacropexy for a better differentiation between infection and tissue response.
Materials and Methods: 287 patients suffering from genital prolapse higher than I° and laparoscopic sacropexy were included. LASH was performed in case of pre-existing uterus (n=171). Leucocytes and CRP levels were analysed pre-operatively and four days after operation. Additionally early (day 1–5) and late onset (>1 day after demission, at least day 7) infection rate was analysed. The discriminatory capacity of leucocytes and CRP levels were evaluated by receiver operating characteristic (ROC) analysis.
Results: Early infections (wound infections) were found in 8/287=2.8%. Late onset infections were found in 3/287= 1.0% (0.66% stump-infection after LASH, 0.33 % unknown origin). Areas under ROC curves were low for both leucocytes (0.52, 95% confidence interval 0.37 to 0.66) and CRP levels (0.60, 95% CI 0.44 to 0.77), where a value of 1 (or 0) means perfect discrimination and 0.5 corresponds to tossing a coin. Thus thresholds yielding acceptable sensitivity and specificity could not be defined.
Conclusion: We found little evidence to support the diagnostic validity of leucocytes or CRP levels to differentiate infection and traumatic reaction four days after laparoscopic sacropexy. Our findings query the benefit of a routinely determination of leucocytes and CRP levels at that time. However, significance of our findings is limited by the low frequency of infections in the study sample. Sensitivity and specifity of leucocytes and CRP levels maybe better after normalisation of the initial tissue response (day 8–10).
Key-words: CRP levels, infections after surgery, endoscopy.

FC18_4

Complications, reprolapse rate and functional results after laparoscopic sakropexie: a cohort study

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Purpose: Deep laparoscopic sacropexy is a modern method for genital prolapse. The aim of this study was to evaluate the intermediate-term outcome after laparoscopic sacropexy with regard to complication rate, re-prolapse rate and patient's contentedness.
Materials and Methods: 287 patients suffering from genital prolapse higher than I° and laparoscopic sacropexy were included. LASH was performed in case of pre-existing uterus (n=171). Anterior and posterior colporrhaphia, lateral repair and anti-incontinence operations were performed simultaneously if necessary. All patients were asked in a questionnaire about de novo symptoms and subsequent operations. Patients were asked to evaluate their operative contentedness in a rating scale (0=worst result, not content, 10=best result, maximum content). Additionally medical records and the electronic data base were analysed.
Results: Mean age was 62.4 years (31–91 years). Mean follow up interval was 28 month. 84 % filled in the questionnaire. No severe intraoperative complication was found. Infections of the lower urinary tract were found in 11.4 %, wound infections and stump-infection after LASH in 6.6 %. 18.6 % (45/242) patients underwent subsequent operations. Four patients developed a mechanical ileus. 16 patients reported de novo stress-incontinence and eight

patients de novo urgency. Re-prolapses rate was 7.8 %. Mesh-erosion was seen in two cases. Mean operative contentedness was 8.3.

Conclusion: Laparoscopic sacropexy shows good intermediate-term results respectively re-prolapse rate, complication rates and contentedness of patients. Infections of the lower urinary tract constitute a problem after gynaecological surgery. The preoperative risk and benefits information should include accurate advices concerning de novo incontinence and re-prolapse rate.

Key-words: sacropexy, complications, follow up.

FC18_5

Clinical correlation of pelvic pain and laparoscopic-histological diagnosis of endometriosis. Vall d´Hebron Hospital, 2007–2009

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Introduction: Endometriosis has been widely implicated with chronic pelvic pain and the gold standard of the diagnosis is visual inspection by laparoscopy. There is no good noninvasive test of endometriosis, our goal was to analyze the correlation of the clinical suspicion of endometriosis with the laparoscopic and histological diagnosis.

Materials and Methods: A retrospective and descriptive study. We included patients undergoing programmed laparoscopic surgery with surgical-histological diagnosis of endometriosis in the Vall d'Hebron Hospital during January 2007–August 2009. Symptoms were categorized according to location and severity of pain using visual analogue scale: mild (1–3), moderate (4–7) and severe (8–10).

Results: 192 patients were operated by laparoscopic route for endometriosis. We found significant association of the history of endometriosis surgery (41%) with the highest stage of endometriosis and severity of pain. The reasons for consultation were pelvic pain 74%, endometrioma ultrasound 22% and 4% sterility. Dysmenorrhea was reported in 72% (moderate 39%, severe 19% and mild 14%), dyspareunia in 34% (moderate 16%, mild 12%, severe 16%), noncyclic pelvic pain in 37% (moderate 21%, mild 8% and severe 8%), dyschezia 11% and dysuria 5% mostly mild. In our series 88% corresponded to endometriosis III–IV, 11% deep endometriosis and 4% stage I–II. We found statistical correlation between clinical suspicion (65% palpable nodule) and magnetic resonance imaging (MRI) findings of deep endometriosis (71%) with final diagnosis. We found significant association between deep endometriosis with severe dysmenorrhea, moderate dyspareunia, severe dyschezia and moderate dysuria. The main surgery was the ovarian cystectomy and adhesiolysis (51%) and the histopathological diagnosis were endometriotic ovarian cyst (77%), rectovaginal septum (3%), adenomyosis (3%) and extragenital (1,5%). The incidence of open surgery was 0,5 % (peritonitis due to intestinal perforation); 2,6% intraoperative complications and 1 % postoperative complications, with statistically significant relationship between surgical complication and higher stage of endometriosis. The short-term follow-up showed clinical improvement of pelvic pain in 72%.

Discussion: The most common presentation was moderate dysmenorrhea, existing significant relationship between moderate—severe painful with deep endometriosis and its diagnosis is linked with the meticulous physical examination and MRI studies as part of preoperative assessment.

Key-words: endometriosis, laparoscopic diagnosis, pelvic pain.

FC18_6

Medium term functional results of laparoscopic sacrocolpopexy. A retrospective single center study about 81 cases

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Introduction: Laparoscopic sacrocolpopexy (LSC) offers global repair of pelvic organ prolapse (POP) with low morbidity and a relatively easy approach to the retro-cervical space when compared with laparotomy. Available date on the functional results of LSC is not sufficient at the present time.

Aim of the study: To evaluate the medium-term functional results of surgical repair of POP by LSC. *Materials and Methods:* 81 patients operated between October 2003 and December 2008 were included. Intra and post-operative data were collected. A self-assessment questionnaire of symptoms and quality of life was given to all patients. 62 responses were collected and assessed.

Results: The mean age was 54 years (range 36—72 years) and the mean follow-up time was 18 months (median 12.5). 62% of the patients were menopause. 3% had a past history of total hysterectomy and 8% a recurrent prolapse. All patients suffered from POP stage≥II, uni- or multi-compartmental. 15% suffered from UI and 40% had a positive VLPP with reduced prolapse on urodynamic study (UDS). The meshes used (multifilament Polyester) were fixed by non-absorbable stitches. Fixation on the boarder of the levator ani muscle was carried out in 80% of cases. Subtotal hysterectomy was done in 6% of cases and a treatment of SUI by suburethral sling in 23% of cases. The average operative time was 184 minutes. Despite of one case of laparoconversion due to hypercapnia, no severe intraoperative complications were observed. The average hospital stay was 3.5 days. Post-operative global satisfac-

tion was 93.4%. The rate of de novo constipation was 27.8% and the rate of de novo SUI was 11.4% (1.6% of recurrent surgery). One patient suffered from de novo dyspareunia (1.6%). No cases of vaginal erosion were found. The rate of anatomical success was 96.3%. In fact, we regret 3 cases of anterior compartment recurrence (at 1, 8 and 12 months) requiring reoperation by transvaginal route (2) or by laparoscopy (1). 94% of patients stated that they were completely cured and 91% said that they would recommend this intervention to a friend.

Discussion and Conclusions: LSC offers global repair of POP with a low morbidity and a high satisfaction rate. The technique requires perfect knowledge of pelvic anatomy and experienced surgeons. Medium-term anatomical and functional results are excellent. Severe constipation is a minor but frequent post-operative complication. L SC seems to give both less post-operative pain and less dyspareunia than the transvaginal POP repair. Further randomized studies comparing laparoscopic and transvaginal techniques are needed to confirm this matter.

Key-words: laparoscopic sacrocolpopexy, pelvic organ prolapse, functionnal results.

FC18_7

An anatomic comparison of the traditional TVT-O versus a modified TVT-O procedure

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Aims: A modification to the inside-out TVT-O procedure, decreasing both the amount of dissection required and the amount of mesh tape is described in this study. Our objective was to compare the impact of the modification on the relation of the tape to the obturator anatomy.

Materials and Methods: Five fresh frozen cadavers were operated upon to study the impact on the anatomical trajectory of using a reduced TVT-O tape procedure in comparison to the traditional TVT-O tape procedure. The TVT-O procedure was performed as originally described by the inventor. The modified TVT-O and the traditional TVT-O procedures were performed in pairs with the exception of the first one, alternating the type of procedure between the right and left side on the same cadaver. A device specifically designed for this study was used: one side from the midpoint consisted of a traditional TVT-O device, whilst the other side was modified to include only 6 cm of mesh extended with a loop suture ("positioning sutures"). To assure that this modified study device actually represented a truly modified, shortened TVT-O procedure, the first cadaver was operated upon with a fully modified, shortened TVT-O tape. In contrast with the original procedure, the obturator membrane was not perforated, neither by the guide nor by the scissors, and the aim of the modified dissection was to obtain a channel with a minimal width of only 5 mm, sufficient to allow insertion of the winged guide. Consequently, as opposed to the original procedure, in the modified technique, the helical passer was the sole instrument to perforate the obturator membrane. The straight tip of the helical passer was inserted in the gutter of the winged guide and advanced until perforation of the obturator membrane. Similarly to the original procedure, the winged guide was subsequently removed and the helical passer was slowly rotated whilst bony contact with the inferior pubic ramus was maintained at all time during insertion, thus ensuring a tight passage around the bony structure, with the tip of the passer finally exiting at the skin level. The adjustment of tensioning prior to removal of the helical passer sheaths remained the same. To allow for this, positioning sutures were located at the end of the shortened tape. To facilitate centering of the shortened TVT-O tape, a "placement loop" in the centre of the tape was foreseen. Relevant distances between the tape and anatomical structures were recorded, as were the individual amounts of mesh in individual muscular structures.

Results: The modified tape traversed less muscular structures than the traditional tape, but consistently traversed the obturator membrane. The distance from the tape to the obturator canal measured on average 2.3 cm vs 1.8 cm, to the anterior obturator nerve 3.1 cm for both, and to the posterior obturator nerve 2.2 cm versus 2.1 cm, in the modified versus the traditional tape, respectively. The amount of mesh left behind in the hemipelvis was 6.3 cm in the modified versus 9.3 cm in the traditional procedure. In the obturator internus (0.9 and 1.1 cm in the modified and original TVT-O, respectively) and obturator externus muscle (1.1 cm and 1.3 cm in the modified and original TVT-O, respectively), no significant difference was seen in the amount of mesh left behind in these muscles. However, the amount of mesh left behind in the adductor magnus muscle differed significantly: 0.2 versus 1.4 cm in the modified and original TVT-O, respectively.

Discussion: One of the most striking observations in this study was the difference in the amount of tape left behind in the body by both procedures. In a bilateral procedure, on average, the tape would measure 12.8 cm in the modified procedure and 18.6 cm in the original technique. This translates into a reduction by one third of the length of the mesh inserted into the body. This anatomical study also showed that the shortened mesh was "anchored" in those critical tissue planes that can accomplish this, namely the internal and external obturator muscles in combination with the obturator membrane. In one cadaver, the tape perforated the obturator externus muscle for only 0.4 cm. This underscores the accuracy required to position the shortened

tape, aided by the placement of a loop to ensure symmetric tape placement. The total length of the modified tape (12 cm) seemed sufficient to overarch the distance between both obturator membranes. The closest distance to the posterior obturator nerve was measured rather medially, approximately at the level where the tape traverses the obturator externus and, sometimes, a small portion of the adductor magnus muscle. This is the location where the modified tape ceases to exist. Consequently, the modified tape can theoretically no longer exert any local influence on the more lateral course of the posterior branches of the obturator nerve.

Conclusions: The modified tape traversed significantly less muscular structures than the traditional TVT-O technique, while still consistently anchoring in the obturator membrane at a similarly safe distance from the obturator canal. The modified tape reached equally close to the obturator nerves as in the traditional technique; however, the distance that the shortened tape's trajectory lied in proximity to the nerve branches is limited.

Key-words: incontinence, TVT-O, anatomy.

FC18_8

Laparoscopic sacral colpo-hysteropexy: two years follow-up

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Object: To evaluate efficacy of laparoscopic sacral colpo-hysteropexy in conservative correction of genital prolapse.

Materials and Methods: 19 women with grade II and III genital prolapse, evaluated in the Department of Gynaecological Science and Human Reproduction (Padua University), desirous of conservative surgery, undergone laparoscopic sacral colpohysteropexy. Vaginal exam, urodinamic study as well as surgical variables were recorded. All patients were assessed pre-operative and at 1, 6, 12 and 24 months after surgery by vaginal exam and written questionnaire about pelvic discomfort, urinary incontinence and intestinal disorders.

Results: The median age was 52 years (range 39–66), median blood loss was 10 cc (range 10–200 cc), median operative time was 209 min (range 113–305 min). In 7 (36.8 %) patients trans obturatory tape was placed for stress urinary incontinence. In only one case post operative urinary retention was detected, resolved spontaneously after 11 days of hospitalisation. One month after surgery, 10 (52.6 %) women complained of intestinal disorders and in 3 (15.7 %) patients of these also dyschezia. At 24 months 4 (21.0 %) patients presented grade II or III asymptomatic cystocele. At 24 months there were no cases of meshes erosin All patients referred good satisfaction of procedure, with no bladder, bowel or sexual disorders.

Conclusions: laparoscopic sacral colpo-hysteropexy resulted a good option for restoring pelvic functionality in women desiring conservative surgery, with totally patients' satisfaction.

Key-words: laparoscopic sacral colpo-hysteropexy, genital prolapse, mesh.

FC18_9

Quality of life and treatment of pelvic organ prolapse

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Background: POP is one the most frequent cause of pelvic floor dysfunctions and this could significantly affect health related QoL.

Materials and Methods: We assessed anatomical and functional outcome of repairs of severe forms of POP using PROLIFT total and laparoscopic sacrocolpopexy (LS SCP). We use standard examination, POP-Q measurements, vaginal and perineal ultrasonography, anorectal manometry, electromyography of EAS to all patients. Attention was paid on place of Qol assessment tools (PISQ-12, PFDI-20, PFIQ-7) and it's applicable in clinical practice. From January 2007 to April 2008, 60 consecutive symptomatic patients with POP II–IV were operated. Follow up was 2 years for all patients. Prolift total (35) LS SCP (25). Mean age was 56.3 (27–84). Simultaneously we performed Burch colposuspension (20%), laparoscopic paravaginal repair (11%), TVT-O (25%), hysterectomy (60%), anal sphincteroplasty (12%) and levator myorraphy (28%).

Results: Using questionnaires we've found significant prevalence of different syndromes before surgery: obstructive urination (68%), urgency/nocturia (48%), SUI (55%), obstructive defecation (50%), pain during defecation (27%), flatal incontinence (58%), fecal incontinence (33%), pelvic pain (60%). Also, we've found good correlation between objective success and score of questionnaires. These operations did not improve sexual life according total PISQ-12 score.

Conclusions: LS SCP and Prolift provides good anatomic and functional results. Disease-specific questionnaires can give additional information about symptoms (i.e. anal incontinence), witch is important, and objectify postoperative results. PISQ-12, PFDI-20, PFIQ-7 are recommended to use not only in studies, but in daily practice.

Key-words: QOL, prolapse, sacrocolpopexy.