Gynecol Surg (2007) 4 (Suppl 1):S27–S50
DOI 10.1007/s10397-007-0309-2

ABSTRACTS

FREE COMMUNICATIONS

TOPIC 1 : MISCELLANEOUS

FC-01

Laparoscopic treatment of non traumatic peritonitis of gynecological or extra-gynecological origin in women : a ten-year study

Elie CHOUILLARD[1], Arnaud FAUCONNIER[2], Toufic ATA[1], Bernard GUYOT[2], Jean-Charles ETIENNE[1], Georges BADER[2], Eva GHILES[1], Denis HEITZ[2], Abe FINGERHUT[1], Yves VILLE[2]
[1]general Surgery Department Centre Hospitalier, Poissy, France, [2]obstetrics And Gynecology Department, Poissy, France

PURPOSE: Localized or generalized peritonitis is one of the most serious complications of many abdominal or pelvic diseases. Laparoscopy has been used with cautiously, because of technical difficulties and the theoretic risk of poorly controlled sepsis and overlooked lesions due to poor vision.
METHODS: Data were retrospectively collected from may 1998 to April 2007 in a single referral center specialized in abdominal emergencies either digestive or gynecological. Only female patients were analyzed. All patients with non-peritonitis infectious or non infectious (e.i., hemorrhagic, inflammatory, obstructive) diagnosis were excluded from the study
RESULTS: Two hundred and twelve patients were included in the study. The median Mannheim Peritonitis Index score was 25 (+/-5; range, 12–38). The conversion rate was 18.8 %. There was no perioperative uncontrolled sepsis. Overall operative 30-day mortality and morbidity rates were 1.9% and 23.6%, respectively. The 2 most common diagnosis was acute appendicitis (62 cases), followed by pelvic inflammatory disease (54 cases). Other diagnosis included acute diverticulitis, post-operative, acute cholecystitis, perforated ulcer, perforated Meckel's diverticulum, iatrogenic post-endoscopic, and miscellaneous causes. A comparison of the patients with successful laparoscopic treatment (N=172) and those who had conversion (N=40) or open procedures (N=101) during the same period was performed.
CONCLUSIONS: The indications of laparoscopy in abdominal emergencies in women could be safely extrapolated to selected patients with peritonitis. The technical feasibility and safety of seem solid. The risk of conversion is high. However, sepsis control is very efficacious and post-operative complications seem to be lowered as compared to patients who had open or converted procedures.

FC-02

Value of Transvaginal Hydrolaparoscopy in Infertility Evaluation

Milan Reljic, Veljko Vlaisavljevic, Vida Gavric-Lovrec, Ksenija Rakic
Department of Reproductive Medicine and Gynecologic Endocrinology, Maribor Teaching Hospital, Maribor, Slovenia

Introduction: In 1998, transvaginal hydrolaparoscopy (THL) was introduced and described as a first line technique for the exploration pelvic cavity in infertility women. The aim of our retrospective study was to evaluate the usefulness and prognostic value of THL.
Methods: Consecutive patients undergoing THL for infertility between 2001 and 2006 were included in the study. The main outcome measures were the rate of the successful access to the pouch of Douglas, the rate of complications, findings in term of tubal pathology, pelvic adhesions, and endometriosis. Laparoscopy was followed immediately after THL in all cases with pathological findings and concordance of both techniques were evaluated. Data on fertility outcome were collected by reviewing medical records only in patients with normal THL findings.
Results: A total of 167 women without obvious pelvic pathology were included. The rate of successful access to the pouch of Douglas was 98.8%. Apart from three cases of transitional febrile condition we had no complications. The rate of complete evaluation of all the pelvic structures with THL was 86.7 (143/165). The incomplete visualization was found to be related to the extensive adhesion in the pelvis. In 112 patients (67.9 %) the THL procedure has shown a morphological normal pelvic examination with at least one patent tube. There were some abnormalities seen in the remaining 53 patient as follows: 45 patients had adhesions, 22 endometriosis and 7 double sided tubal occlusion. The morphologically findings using THL and laparoscopy were strictly concordant in 42 patients (79.2%). The concordance in tubal patency was 88.6%. Discordances were always limited to one tube. In all cases the discordant findings were considered not to have any clinical impact.
Among 112 patients with normal THL findings 47 (42.0%) conceived spontaneous or after intrauterine insemination.
Discussion. THL is a minimally invasive, safe and accurate procedure that may be considered as an alternative to diagnostic laparoscopy in the routine assessment of infertile patients without obvious pathology.

FC-03

Oncologically safe robotic-assisted radical Hysterectomy technique for cervical cancer

Agnieszka Oleszczuk, Malgorzata Lanowska, Christhardt Köhler, Achim Schneider
Department of Gynecology, Charite University Hospital, Berlin, Germany

Introduction:
Prognosis and morbidity of oncologic surgery depend on the radicality as well as the oncologic safety of the procedure. The main advantage of a daVinci robot assisted technique over a conventional laparoscopic technique is the precision of the surgical management.
Materials and Methods:
Patients with cervical cancer FIGO IB1 were treated as follows:
1) A diagnostic laparoscopic staging including paraaortic and pelvic lymphadenectomy, exclusion of intraabdominal tumor spread, and tumor involvement of tissues adjacent to the uterine cervix was performed. Only if intraoperative frozen section results confirmed negative lymph nodes and tumor confined only to the cervix radical hysterectomy was indicated. 2) Transvaginally a vaginal cuff was formed and closed with a continuous suture. The vesicocervical and rectovaginal was opened. 3) With the aid of the daVinci precise and careful dissection of the parametria und the ureter tunnel was performed. Three ports were used for robotic instruments, two additional ports for conventional laproscopy. The resected uterus with the closed cervix was removed transvaginally. The vagina was sewed with the aid of the daVinci System by continuous suture.
Results:
The flexibility of the instruments and the three dimensional view allowed a resection and suturing process with more precision than by open. By closing the vaginal cuff contamination by tumor cells could be prevented. In addition no uterine manipulator has to be used. No intra- or postoperative disadvantages were noticed when using the robot-assisted technique.
Conclusions:
1. By this technique tumor cell contamination can be completely excluded 2. Radical Hysterectomy with the aid of the daVinci with vaginal cuff closure by the transvaginal route maybe oncologically safer than the techniques previously described.

FC-04

Long term survival is possible after cytoreductive patients with peritoneal carcinomatosis of ovarian origin

Elie Chouillard[1], Dany Elkhoury[2], Toufic Ata[1], Arnaud Fauconnier[2], Abe Fingerhut[1]
[1]*general Surgery Department, Centre Hospitalier, Poissy, France*
[2]*obstetrics & Gynecology Department, Poissy, France*

Intraperitoneal chemohyperthermia (IPCH) combined to cytoreductive surgery (CRS) may be part of the management of patients with peritoneal carcinomatosis of ovarian origin. The aim of this study was to determine morbidity and mortality, recurrence-free survival and, overall long term survival after combining CRS with IPCH for the treatment of peritoneal carcinomatosis from ovarian epithelial cancer recurring after prior chemotherapy. After initial evaluation of the feasibility of the procedure, the long-term survival was assessed over a 12-year period.
Methods: Patients underwent extensive cytoreductive surgery including tumor resections and peritonectomy, followed by intraoperative IPCH with Mitomycin C and cisplatin.
Results : Thirteen women were included. Complete or near complete surgical cytoreduction was obtained in 9 patients (69%). One patient died postoperatively from a pulmonary embolism. Major postoperative morbidity rate was 25 % (Aplasia, Abscess, hemorrhage, renal failure, myocardial infarction). Kaplan-Meier estimates of median recurrence-free survival and median overall survival were 19.1 months and 33.1 months, respectively. Two patients are still alive 7 and 11 years (without recurrence) later.
Conclusion: We concluded that CRS combined with IPCH is feasible with acceptable morbidity and mortality and seems to promise long term survival in selected patients with peritoneal carcinomatosis from ovarian cancer.

FC-05

Experimental models to induce standardised adhaesions in the rat

M Wallwiener[1], T. K. Rajab[1], C. Wallwiener[1], C. Brochhausen[2], D. Wallwiener[1], B. Kraemer[1]
[1]*University of Tuebingen, Tuebingen, Germany,* [2]*University of Mainz, Mainz, Germany*

Introduction
Easily reproducable animal models are pivotal for research into the pathogenesis and prophylaxis of post-operative adhaesions. Here we compare and contrast four different models to induce standardised peritoneal adhesions in the rat.
Methods
Model 1: Bipolar electrocautery (40-60W) of a standardised area of the parietal peritoneum and/or visceral peritoneum
Model 2: Monopolar electrocautery (50W) as for model 1.
The peritoneal defects in models 1 and 2 were either closed with 5 interrupted 3-0 vicryl sutures or left open.
Model 3: Peritoneal traumatisation using a cyto-brush
Model 4: Peritoneal traumatisation by punch-biopsy (8 mm)
Tissue preparation for histomorphological analysis was performed according to a standardised method. In tissue samples without adhesions representative areas of the peritoneum were analysed. In those samples with detectable adhesions, areas of maximal adhesion formation with the transition zone to the normal peritoneum were analysed.
Results
Model 1 with closure of the peritoneal defect caused objectively and quantitatively scorable adhesions in all animals. Histologically, samples from this model were characterised by a rich vascularized connective tissue and moderate acute unspecific inflammation

without foreign body reaction. There were no significant differences between animals treated with different electrocautery. We observed weaker adhesions in models 3 and 4. These could be scored semi-quantitatively. Here, the histology showed florid unspecific and fibrotic peritonitis, partially with abscesses in the submesothelial muscularis. Moreover, exact standardisation between different surgeons was relatively difficult in model 3.

Conclusions

Model 1 is best suited to induce standardised adhesions and is therefore employed by our group for further analysis of post-operative adhesions and different adhesion barriers.

FC-06

Different systems for standardized scoring of adhesions in the rat model

B. Kraemer[1], C. Wallwiener[1], M. Wallwiener[1], C. Brochhausen[2], D. Wallwiener[1], T. K. Rajab[1]

[1]University of Tuebingen, Tuebingen, Germany, [2]University of Mainz, Mainz, Germany

Introduction

There are animal models on the pathogenesis and prophylaxis of post-operative adhesions. However, these data are rarely comparable as the literature lacks exact descriptions of how adhesions can be scored objectively. We present our scoring strategies in the rat model.

Materials and methods

Adhesions were induced by bipolar electrocautery (2×0.5 cm) in the side abdominal wall of female rats with consequent closure of the peritoneal defect with 5 interrupted vicryl sutures. The quality of the resulting adhesions was scored: all adhesions were documented with digital photography from a standardized distance and presented to an independent surgeon for blinded assessment on a scoring card from 0 (none) to 4 (inclusion of intraabdominal organs). Additionally, the severity of adhesions is assessed according to their connection to other intraabdominal organs: 1 (omentum), 2 (pelvic organs) or 3 (other intraabdominal organs). The tractive power needed to separate the adhesion from the tissues involved was scored from 0 (no adhesion) to 3 (sharp dissection). Category 2 (separation by traction) was further quantified by measuring the force required for separating these adhesions using electronic scales attached to a clamp. The quantity were scored according to the absolute number of adhesions formed to each traumatised area. Additionally, the adhesion coverage is given as percentage from the traumatised area and is evaluated by a computer programme after digitalization.

Results

Our induction model caused objectively scorable adhesions in all animals. The different scoring models can be used separately or in a combined fashion. The most accurate scoring was achieved with the scoring card and the computer programme.

Conclusion

We present scoring systems for adhesions that can be used in several animal induction models. The combination of a scoring card and a graphic computer programme will be used by our team for further studies.

FC-07

Adhesion prophylaxis after laparoscopic myomectomy using a novel resorbable membrane consisting of D,L-Polylactid (Supraseal®)

B. Kraemer[1], M. Wallwiener[1], C. Wallwiener[1], C. Brochhausen[2], H. Hierlemann[3], H. Planck[3], D. Wallwiener[1], T. K. Rajab[1]

[1]University of Tuebingen, Tuebingen, Germany, [2]University of Mainz, Mainz, Germany, [3]ITV Denkendorf, Denkendorf, Germany

Introduction / Purpose

Post-operative adhesions constitute an important clinical problem. As a result, a number of liquid and solid barrier agents are being developed. However, there is no consensus on which strategy (liquid or solid) is more suitable.

Here we present data about Supraseal®, a novel resorbable membrane designed to prevent adhesions and compare it to the liquid adhesion barrier Adept®, the efficacy of which has been verified in the literature.

Methods

30 patients admitted for laparoscopic myomectomy were randomised to receive adhesion prophylaxis with either Supraseal® (n=15), a solid adhesion barrier consisting of D,L-polylactid or Adept® (n=15), a liquid barrier consisting of icodextrin 4% solution. Efficacy of the respective barrier was analysed according to the following parameters: Visual Analogue Scale for pain, requirement for further operations, fever, constipation, nausea, dysparunia and dysmenorrhoea after 1, 2, 3, 7 and 14 days as well as 3 months after surgery. Moreover, handling of the respective barrier was analysed using a questionnaire for the surgeons.

Results

There was no evidence for a significant difference in the post-operative outcome between patients receiving Adept® or Supraseal®. However, intra-operatively Supraseal was considerably more difficult to use ($p<0.05$) because of its texture.

In a separate animal study we show with second look after 14 days that the adhesion scores of female Wistar rats receiving Supraseal® were significantly improved compared to control ($p<0.01$).

Conclusions

The clinical efficacy of Supraseal® is equal to Adept, yet the handling of Supraseal® is more time-consuming. We envision the routine application of Supraseal® for adhesion prophylaxis after further modifications of the material characteristics.

FC-08

Adhesion Prophylaxis using a Novel Resorbable Biomembrane consisting of D,L-Polylactid (Supraseal) – Experimental results in the rat model

T. K. Rajab[1], C. Wallwiener[1], M. Wallwiener[1], C. Brochhausen[2], H. Hierlemann[3], H. Planck[3], D. Wallwiener[1], B. Kraemer[1]

[1]University of Tuebingen, Tuebingen, Germany, [2]University of Mainz, Mainz, Germany, [3]ITV Denkendorf, Denkendorf, Germany

Introduction
Supraseal® is a novel, resorbable D,L-polylactid membrane designed to prevent post-operative adhesions. Direct quantification of the efficacy of adhesion barriers in the clinical setting is notoriously difficult. Therefore we report experimental data using this new membrane in an objective rat model.
Methods
Standardised peritoneal trauma due to bipolar electrocautery was induced in 45 female Wistar rats. During these operations, the animals received either Supraseal® (n=15), Adept® (n=15), or no treatment (n=15) according to a randomisation plan. On the 14th post-operative day the resulting adhesions were evaluated in a blinded fashion using an objective macroscopic scoring system and by histology.
Results
The adhesion scores of animals receiving either Supraseal® or Adept® were improved compared to no treatment ($p<0.01$). Supraseal® appeared more efficacious than Adept® but this difference did not reach significance in the number of animals examined ($p>0.05$). Histologically, samples from animals treated with Supraseal® showed localized fibrosis with slight foreign body reaction and mild inflammation. In contrast, animals treated with Adept® as well as untreated animals revealed typical adhesion formation with fibrosis and mild inflammation in the transition zone to normal peritoneum with the absence of a foreign body reaction.
Conclusions
We conclude that Supraseal® is an efficacious, new barrier to prevent post-operative adhesions and that further clinical studies are warranted to help translate this agent into a new option for patients.

FC-09

Reduction in postoperative adnexal adhesion scores by a viscoelastic gel after laparoscopic gynecologic surgery: pilot study findings in women with mild and moderate preoperative adhesion scores

Per Lundorff[1], Alan Johns[2], Michael Diamond[3], Jacques Donnez[4], Philip Young[5], Gere S. diZerega[6], Matthias Korell[1]
[1]Viborg Hospital, Viborg, Denmark, [2]University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States, [3]Wayne State University, Detroit, MI, United States, [4]Universite Catholique de Louvain, Cliniques Universitaires Saint-Luc, Brussels, Belgium, [5]University of California - San Diego School of Medicine, San Diego, CA, United States, [6]University of Southern California - Keck School of Medicine, Los Angeles, CA, United States, [7]Department of Obstetrics and Gynecology, Klinikum Duisburg, Duisburg, Germany

Objective: To determine the preliminary safety and effectiveness of a novel viscoelastic gel (Ethicon Intercoat, formerly Oxiplex/AP Gel) in reducing postoperative adhesions among women with preoperative mild (6-10) and moderate (11–20) American Fertility Society (AFS) adhesion scores.
Design and Methods: This is a pooled subset from two randomized, blinded parallel-group multicenter studies in the US and EU. The specific pooled subset involved 26 adnexae with either mild or moderate AFS adhesion scores at initial laparoscopic surgery for adhesions and/or endometriosis. After randomization, subjects underwent laparoscopy with evaluation of the adnexae, pelvic sidewall and ovarian fossae recorded on video. Eligible subjects received either Ethicon Intercoat or no additional treatment. Six to ten weeks postoperatively, a second-look laparoscopy (SLL) with video recording was performed. AFS scores were assigned after blinded reviews of the videotapes.
Results: The control group consisted of four adnexae with mild adhesions and eight adnexae with moderate adhesions; the treatment group included five adnexae with mild adhesions and nine adnexae with moderate adhesions. Coverage of surgical sites at risk for adhesion reformation was generally accomplished with ~15 mL of gel in ~90 seconds. At SLL, all four of the control adnexae with mild adhesions had progressed to either moderate or severe adhesive disease; of the eight control adnexae with initial moderate disease, three remained moderate while five progressed to severe adhesive disease. In contrast, none of the adnexae treated with Ethicon Intercoat that had mild initial AFS scores progressed to the severe category, and two adnexae had scores in the minimal category at SLL. Two of the nine adnexae with initial moderate AFS scores that were treated with the gel were in the minimal category at SLL, one had mild adhesions, four remained in the moderate category and two progressed to the severe category. Overall, 79% of the treatment adnexae either improved or maintained their AFS category vs. 25% of the control adnexae ($P<0.05$). There were no device-related adverse events reported.
Conclusion: Ethicon Intercoat is a simple, rapidly applied method for adhesion prevention at laparoscopic pelvic surgery that in this study was safe and effective among women with initial mild and moderate AFS adhesion scores.

FC-10

Lessons from embryology – anatomy of the urorectal septum explains the morphology and function of suspensory apparatus of female pelvic organs

Michal Otcenasek, Ladislav Krofta, Jaroslav Feyereisl
UPMD, Prague, Czech Republic

The embryonic cloaca is divided by frontally oriented condensation of primitive mesenchymal tissue called the urorectal septum. The vaginal bud grows in the middle of the septum, giving the vaginal and cervix unique position compared to the urinary bladder and rectum. In adult female, the endopelvic fascia has developed from the urorectal septum, retaining its frontal orientation, investing the vagina and also supporting the bladder and rectum. The fascia is connected to the bladder by bladder pillar and analogically to the rectum by the rectal pillar (lateral ligaments of the rectum). The pivot suspensory function of the endopelvic fascia enabled by firm attachment to:

1) pubic bone
2) anterior perineal membrane (paraurethrally)
3) perineal body
4) levator ani muscle (delineated by the arcus tendineus fascia pelvis anterosuperiorly and arcus tendineus of rectovaginal fascia inferodorsally)
5) sacral bone and “arcus suprapiriformis”.

Both the gross morphology and histological composition of the endopelvic fascia, mesorectum, bladder pillars, perineal membrane and urogenital membrane (levator ani muscle, sphincter ani muscle) and piriformis muscle is explained with the help of illustrations, which were painted with the help of computer three dimensional models, magnetic resonance imaging, surgical observations and cadaver dissections of fresh/formol/Thiele cadavers. The relation of the vaginal mucosa, surrounding endopelvic fascia and pillars of rectum and bladder is demonstrated in the light of both laparoscopic and vaginal approaches in the prolapse surgery.

TOPIC 2 : UROGYNECOLOGY

FC-11

Method of vaginal vault prolapse prevention during vaginal hysterectomy

Anatoly Ishenko, Yury Chushkov, Oksana Gorbenko, Alexander Slobodyanyuk
Moscow Medical Academy, Clinic of Obstetrics and Gynecology, Moscow, Russia

Objectives. To work out a safe and secure surgical method for vaginal vault prolapse prevention during vaginal hysterectomy.
Materials and methods. This technique has three main stages. At the first stage after hysterectomy laparoscopy is performed. The stumps of cardinal and utero-sacral ligaments are sutured by unabsorbable threads and are fixed to vaginal vault by each side. At the second stage the ends of threads are extra peritoneally conducted by guider into the trocar sites, and finally, fixed to or above aponeurosis. Colpoperineoplasty is performed if needed. As a result a multi-level support for pelvic structures is achieved. These result in high vaginal vault fixation. From 2004 till now 52 procedures were carried out in cases of full uterine prolapse.
Results. Duration of the surgery varied from 60 to 90 minutes. There were no intraoperative complications. Blood loss did not exceed 500 ml. No postoperative complications were noted. During this period of follow-up there were no cases of vaginal vault recurrence.
Conclusion. Our method of surgical treatment is effective in preventing vaginal vault prolapse after vaginal hysterectomy, which was performed in cases of full uterine prolapse. Our technique prevents the vaginal vault prolapse after hysterectomy, that has a great clinical importance, and also improves the life quality of patients with such diseases.

FC-12

Laparoscopic sacrocolpopexy to repair post hysterectomy vaginal Vault Prolapse.Our Experience in District General Hospital

Munawar Hussain, Colin Prendergast, Jim Moohan
Altnagelvin Area Hospital, Londonderry, N.Ireland., United Kingdom

Background.
Transabdominal sacrocolpopexy is an excellent treatment option for patients with post hysterectomy vaginal vault prolapse with long-term success rate of 93–99%. However, as with any kind of laparotomy, it is associated with more postoperative analgesia requirements, prolonged hospital stay and delayed return to activities of daily life. Laparoscopic sacrocolpopexy offers a minimally invasive approach to correction of vaginal vault prolapse with less intraoperative and postoperative complications and less hospital stay.
Objectives.
To report our initial experience of laparoscopic sacrocolpopexy and assess the intraoperative complications, hospital stay and results of follow up to date.
Design & Methods.
A retrospective study of 7 patients who underwent laparoscopic sacrocolpopexy between July 2006 and to date for post hysterectomy vaginal vault prolapse. Data was collected from the case notes and operation theatre records and included operative time, intraoperative complications, hospital stay following surgery and postoperative analgesia requirements. This study is still ongoing
Results.
Mean operative time was 2.14 hours. There were no intraoperative complications and mean stay in the hospital after procedure was 2 days. Although follow up time is less than 12 months but none of the patients had recurrence of vault prolapse or problems with normal sexual activity but one patient presented with complaint of perineal pain.
Conclusion.
Laparoscopic sacrocolpopexy appears to be an effective approach for the treatment of the vaginal vault prolapse and is associated with less intraoperative complications and shorter postoperative hospital stay with less analgesia requirements.

FC-13

Anterior transobturator mesh (ATOM) and/or posterior ischiorectal mesh (PIRM) for correction of female pelvic organ prolapse and pelvic floor dysfunction

Marijan Luznik
General Hospital Slovenj Gradec, Slovenj Gradec, Slovenia

Benefit of alloplastic mesh implantations with needle applicators for correction of female pelvic organ prolapse and pelvic floor dysfunction is in their minimally invasive intervention to achieve a marked improvement in pelvic organ static and pelvic floor function. For younger women it is often very important to preserve the otherwise healthy uterus and normal volume of vagina. All these demands can be fulfilled with an anterior transobturator mesh – ATOM and/or a posterior ischiorectal mesh – PIRM procedures.
In the first year of practicing this procedure, between April 2006 and April 2007, we performed sixty-two operative corrections of female pelvic organ prolapse and pelvic floor dysfunction with mesh implants on our Department of Gynecology and Obstetrics.

The twenty-five patients with surgical procedure TVT-O or Monarc as solo intervention are not added to this number.
On 8 out of 62 patients hysterectomy was performed concomitantly, only for gynecological indications other than prolapse itself.
On 38 out of 62 patients prolapse was corrected with mesh and uterus was preserved.
In 16 cases out of 62, correction of vaginal stump prolapse after hysterectomy was performed in 3 cases with ATOM and PIRM, in 8 only with ATOM and in 8 only with PIRM.
In 7 cases out of 38, where uterus was preserved, ATOM and PIRM were performed for correction of prolapsed uterus and anterior and posterior vaginal wall prolapse. On 29 out of 38 patients correction of prolapsed anterior vaginal wall and uterus was performed with ATOM. In 2 cases from this group of 38 patients only PIRM was performed for posterior vaginal wall prolapse.
All 62 procedures were performed relatively safely. In 3 cases of ATOM we had perforation of bladder by application of posterior needle and in 2 cases of PIRM we had perforation of rectum. In all 5 cases correction was performed during the operation, mesh was kept in place and postoperative course of treatment had to go without complications.
Short term results, 2 to 3 months after the operation, are very good both for pelvic organ static, and for pelvic function. We also expect long duration of good results.

FC-14

Comparison of treatment of urinary incontinence with transobturator tape in pre- and postmenopausal women

Andrea Lebre, Margarida Brandão, Manuela Montalvão, Bercina Candoso
Maternidade de Júlio Dinis, Porto, Portugal

Objectives: Suburethral sling inserted by transobturator route is considered a minimally invasive, safe and effective procedure to treat female urinary incontinence. Our goal was to compare the results of this surgery in pre- and postmenopausal women, who were submitted to transobturator tape (T.O.T.) due to urinary incontinence.
Design and methods: A retrospective study was performed with chart review of 260 patients with urinary incontinence, who were submitted to T.O.T. from March 2004 to December 2006. These patients were divided into a pre-menopausal and a post-menopausal group, whose results were compared.
Results: Before surgery all patients were assessed by clinical gynaecological examination and an urodynamic workup. Mean follow-up was 11 months (range 1–24).
In the premenopausal group (137 women - 52.7%) mean age was 45 years (29–57). Two patients were previously submitted to other incontinence surgeries and 21 women had mixed urinary incontinence. After surgery 136 patients (99.3%) were cured, while persistence of stress urinary incontinence was found in 1 patient.
123 women (47.3%) were in a postmenopausal status and had a mean age of 59 years (45–83). Mean age at menopause had been 49 years. 7 patients were previously submitted to other incontinence surgeries. 24 women had mixed urinary incontinence. 119 patients (96.7%) were cured for their stress urinary incontinence, while 4 patients maintained it.
No patient felt that their situation had deteriorated. No intraoperative complications were recorded.
Conclusions: Our results confirm that T.O.T. is a safe and effective technique for the treatment of female stress urinary incontinence, independently of the menopausal status. In both populations we had high success rates and a low rate of complications, although a longer follow-up period is needed to validate our results.

FC-15

Management of Ureteric Fistulas. Literature review and our experience

Natasha Waters[1], Filipa Osorio[1], Brice Rodriguez[1], Arnaud Wattiez[2]
[1]IRCAD/EITS, Strasbourg, Alsace, France, [2]Hautepierre University Hospital, Strasbourg, Alsace, France

Study objective: To address the problem of ureteric injury; to understand its prevalence; to review the classical way of management; to review our experience and describe our technique. Finally we propose a new laparoscopic conservative approach to ureteric injury.
Design: Retrospective analysis of all our advanced laparoscopic surgery cases.
Setting: University Hospital, Strasbourg, France
Patients: All patients undergoing advanced laparoscopic surgery since 2004.
Measurements and Main results: Since 2004 there were 11 patients with post-operative ureteric injuries. The incidence of postoperative ureteric injury at our institution among a highly selective population presenting with advanced cases of mainly deep infiltrating endometriosis (7 out of 11 cases), is 2.1% (11 cases out of 503 operations). The main factor predisposing to injury is the severity of the disease causing extrinsic fibrosis around the ureter. The main mechanism of injury is devascularisation secondary to ureteric dissection.
The gynaecological team managed all cases of ureteric fistula except one. Conservative laparoscopic treatment was followed by 10-day urinary catheterisation and at least 6 weeks ureteric stenting to prevent vesico-ureteric reflux. One patient with a transected ureter underwent a laparotomy and reimplantation of the ureter by the urology team. All patients recovered uneventfully.
Conclusion: Unfortunately, there is still no demonstrable advantage of laparoscopy in the management of severe gynaecological disease despite better visualisation and more precise anatomical dissection. There is still a high incidence of ureteric injury even in very experienced hands. The aim of this review is to describe a conservative management of these injuries rather than to describe a prevention strategy.

TOPIC 3 : HYSTEROSCOPY

FC-16

Laparoscopy and hysteroscopy – are there concerns? Survey

Bavin Balakrishnan
Baby Memorial Hospital, Calicut, Kerala, India

Setting - tertiary referral hospital
Study - institution
Design - prospective trial
Purpose - Statistical survey for raising concerns
Abstract - A practice survey questionnaire is sent to the gynaecologists and patients undergoing fertility treatment. The variables are set to analyse the Endoscopy progress or slowing. The questions are also inclusive for hysteroscopy. The results show interesting pattern of geographic treatment modality. The trial is on going and the results will be presented.

FC-17

Effect of hysteroscopic examination on the outcome of IVF

V. Kopitovic, A. Trninic Pjevic, D. Budakov, M. Pjevic, A. Bjelica, I. Bujas, D. Tabs
Clinical Center Novi Sad, University Department of Obstet and Gynecol, Novi Sad, Serbia

Objective: The objective of this study is to evaluate if hysteroscopic examination of uterine cavity and consequent treatment of intrauterine lesions prior IVF could improve the pregnancy rate in women less than 38 years.
Design and Methods: We present a prospective study. Two hundred and sixty-seven patients who had undergone IVF-embryo transfer cycles were divided in groups: Group A - did not have hysteroscopic evaluation and no pathology was detected with ultrasound, Group B - had hysteroscopy and no pathology was detected, Group C - had abnormal hysteroscopy finding.
Results: Our mean pregnancy rate is 39, 8% and if no pathology is detected during the hysteroscopic evaluation, clinically pregnancy rate increases to 45%. Treatment of abnormal hysteroscopic findings was performed whenever possible in the same procedure (myomectomies, polypectomies, septum resections, resections of adhesions in cervical canal/ uterine cavity). Findings like micropolyposis, strawberry-like endometrium, endometrial atrophy and signs of adenomiosis were treated appropriately and rehisteroscopy was performed. Clinically pregnancy rates in this group differ, regarding the pathology involved.
Conclusion: All patients should be evaluated prior to commencing IVF to improve pregnancy rate. Hysteroscopy should not be performed only when positive ultrasound finding, because some treatable pathology of endometrium would be overlooked.

FC-18

Follow-up of women after first episode of postmenopausal bleeding and endometrial thickness > 4 mm

Anne Timmermans[1], Lena C van Doorn[3], Brent C Opmeer[1], Ben WJ Mol[1]
[1]Academic Medical Centre, Amsterdam, Netherlands, [2]University Medical Centre, Utrecht, Netherlands, [3]Erasmus Medical Centre, Rotterdam, Netherlands

Objective: To determine the incidence of recurrent postmenopausal bleeding among women who were diagnosed with an endometrial thickness >4 mm.
Design: Prospective cohort study was performed including consecutive women not using hormone replacement therapy, presenting with a first episode of postmenopausal bleeding. This study was limited to patients who had an endometrial thickness > 4 mm at transvaginal ultrasonography (TVU). In case of endometrial thickness > 4 mm, presence of carcinoma was ruled out by office endometrial sampling, hysteroscopy and/or dilatation and curettage (D&C). Women with benign endometrial sampling were included for follow-up. Time to recurrent bleeding was assessed using Kaplan-Meier analysis. Subsequently we evaluated whether the performance of a hysteroscopy and/or D&C, and the performance of polypectomy at the initial work-up were associated with recurrence of bleeding. The log-rank statistic was used to test for statistical significance.
Results: We registered 607 patients with a first episode of postmenopausal bleeding, of whom 318 patients had an endometrial thickness >4 mm. Of these 318 patients, 222 patients had benign histology results and were available for follow-up. During follow-up 20% of the patients had recurrent bleeding with a median time to recurrent bleeding of 49 weeks (interquartile range 18 to 86 weeks). There was no difference with respect to recurrence bleeding rate between patients with polyp removal, patients with a normal hysteroscopy, and patients with office endometrial sampling alone at the initial work-up.
Conclusion: The recurrence rate of postmenopausal bleeding in women with endometrial thickness >4 mm was 20%. This recurrence rate seems not to be related to incorporation of hysteroscopy or polyp removal at the initial work-up. Since two patients were diagnosed with atypical endometrial hyperplasia at time of recurrent bleeding, we recommend repeated endometrial sampling if patients experience recurrent bleeding.

FC-19

Our experience after 15 years of endometrectomy: Should it be really bannished?

Alicia Ubeda, Ramón Labastida, Fausto Astudillo
Institut Universitari Dexeus, Barcelona, Spain

Introduction: Endometrectomy and endometrial ablation were introduced in the early 80's tas a new hysteroscopic technique to solve abnormal uterine bleeding for benign pathology, thus avoiding

the need of hysterectomy. Along the 90's other non-hysteroscopic techniques appeared in th Gynecological field to overcome fluid overload and electrical risks of hysteroscopic surgery. Their quick spread prevented from real patients' selection and clinical results did not result as spectacular as expected. Moreover; laparoscopic assisted hysterectomies and levonorgestrel-releasing intrauterine system have contributed to the decrease of this procedure.
Methods: For a 15-year period we performed more than 400 endometrectomies in the Endoscopy Unit of our private teaching institution. Mean age was 43 years and 15% of these women had been submitted to previous D&C. Mean time of the procedure was 22 minutes and patients were delivered in less than 24 hours.
Results: Results in terms of amenorrhea and hypomenorrhea were over 90%, complications rate was 2% and reoperations rate of 4.8%, though half of these cases were because of other pathologies not related with past endometrectomy. Probability of non-hysterectomy for the first 5 years of follow-up was around 96%.
Discussion: Endometrectomy did not fulfill expectancies because of its somehow uncontrolled spread. Conversely, in our experience for 15 years, if patients' selection and the technique in itself are correctly carried out, results are barely good. In front of hysterectomy, endometrectomy allows a quick recovery with low risk and complications rate. Among our reoperations, 85% took place in the first five years of the introduction of the technique. At present, our ratio hysterectomy/endometrectomy is around two, while in the literature it is still three.
Conclusions: Endometrectomy should not be banned because of its uncontrolled spread. Hysterectomy, hormone-releasing intrauterine devices and endometrectomy should find their own place in the daily Gynecological practice.

FC-20

The use of bipolar energy and saline in hysteroscopic surgery: a new and safe approach to a series of 45 patients

S. Chandakas, E. Salamalekis
[1]*Attikon University Hospital, Athens, Greece,* [2]*Iaso Gynaecological Hospital, Athens, Greece*

INTRODUCTION: To evaluate operative hysteroscopy using bipolar energy and saline electrode excision for the treatment of endometrial polyps or fibroids
METHODS: A Prospective, randomized study at a University Hospital and a major Gynaecological Hospital in Athens, Greece
RESULTS: forty-five consecutive patients with endometrial polyps or fibroids, up to 4 cm, in need for hysteroscopic resection. Patients underwent diagnostic hysteroscopy, followed by operative resectoscopy using the bipolar/saline electrode system by Olympus passed through the operating sheath of a small-caliber hysteroscope.
Operating times, difficulty of the operation, surgeon satisfaction with the procedure, intra- and postoperative complications, postoperative pain, and patient satisfaction were recorded. The majority of women were premenopausal (83%) Operative hysteroscopy was performed with a bipolar electrosurgical device to cut, vaporize and coagulate. Main outcome measures were pain control during the procedure, the post-operative pain score at 15 and 60 min, and at 24 h after the procedure, and patients' satisfaction rate. All procedures were completed within 45 min, the amount of saline used varied from 500-2200 ml.
DISCUSSION: Operative resectoscope with bipolar energy and the use of saline appears to be the technique of choice for endometrial polyps or fibroids up to 4 cm. The length of the procedures is similar to existing techniques and the safety and satisfaction rate both for the surgeon and for the patient is better.

FC-21

Our outcomes in 29.071 office hiteroscopies and septate unteri

Fausto Astudillo, Ramon Labastida, Alicia Ubeda
Intitut Universitari Dexeus, Barcelona, Spain

Introduction: The congenital uterine anomalies are the result of an incomplete resorption of the Müllerian ducts, giving as a consequence the septum persistence, whose length and width will depend on the degree of resorption of the same. The true incidence of these uterine anomalies in the general population is not known with exactitude. The congenital uterine anomalies have been associated with worse reproductive outcomes.
Methods: We realize a retrospective study in 29,071 outpatient diagnostic histeroscopies between 1983 and 2006 in search of incidence of septate, subseptate, arcuate uteri and its reproductive antecedents in compared infertile and sterile population with the no infertile women.
Results: Of the 29,071 outpatient histeroscopies, 1073 (3.6%) presented the existence of some of these anomalies. The 1.2% (355) was septate uteri, the 0.9% (287) subseptate and 1.4% (431) arcuate ones. 2% (64) of the studied sterile patients (3196) presented a septate uterus, a 1.5% (48) subseptate uterus and 3% (98) arcuate; in the patients with recurrent pregnancy loss (2534) the 11.2% (284) presented some of these malformations, whereas they were present in only the 2.5% (579/23341) of the non infertile patients ($p<0.05$). As far as the pregnancy outcomes we observed that the rate of delivery was of 28.1% for the septate uteri, 28.9% for the subseptate, 29.4% for arcuates and 61.3% in the patients with normal uteri.
Conclusions: The arcuate uteri have similar obstetrical outcomes that the septate and subseptate uteri. The subseptate uteri present a major rate of miscarriage that the other malformations. Possibly the poorest obstetrical prognosis is due to the distortion of the uterine cavity that to the habitually invoked factors. For that reason we considered that the hysteroscopy is the gold standard to evaluate the septate uteri.

FC-22

Abnormal Fetal Presentations After Hysteroscopic Metroplasty

A. Loddo, B. Piras, E. Silvetti, R. Etzi, A.M. Paoletti, G.B. Melis
Division of Ginecology, Obstetrics and Pathophysiology of Human Reproduction, Department of Surgery, Maternal-Fetal Medicine and Imaging, University of Cagliari, Cagliari, Italy, Italy

Objective The objective of our study has been to evaluate the reproductive outcome in women with uterine malformations treated by hysteroscopy.
Methods During the period from 2001 to 2005, 61 women underwent hysteroscopic metroplasty in our tertiary referral center. A follow-up was performed in 47 women to evaluate the reproductive outcome after surgery; the others refused their consent to participate in our study. At the moment of the operation, patients' mean age was 33 years. The mean period of follow-up after resection was 33 months and 10 days. Before treatment, total number of pregnancies was 43; of this, 2 (5%) were complicated by molar degeneration, 2 (5%) by ectopic pregnancy, 38 (88%) ended in spontaneous miscarriages (37 during the first trimester and 1 in the second one) and only one pregnancy was carried on (2%) with a preterm delivery at 36 weeks with a cesarean section for breech presentation. Operative hysteroscopy was performed in all patients using a 26 F resectoscope. The septum resection was performed with an equatorial loop.
Results After treatment, 37 out of 47 women wish to conceive; total number of pregnancy obtained was 34. In two cases was performed an induction of pregnancy loss after ninety days; of the remaining 32 pregnancies, all the cases were delivered. Term deliveries were 20, 6 preterm and 6 spontaneous abortions. Mean delivery time was 38 weeks of gestation. Live birth rate was 81% versus 2% before treatment ($p<0.001$); abortions rate falls down from 88% preoperative to 19% postoperatively ($p<0.001$). In particular, 3 first trimester abortions occurred and 3 during the second one (although in two cases was applicated a preventive cervical cerclage). The neonate was delivered by cesarean section in 19 cases (73%) out of 26 live birth; for seven times the indication was an abnormal fetal presentation. In fact, there were 6 breech presentations and one transverse presentation out of 26 live birth babies (27%). Discussion Our results confirm the efficacy of hysteroscopic metroplasty in women affected by recurrent miscarriages and direct to surgery all the women wishing to conceive with septum uterine casually diagnosed. The high percentage of abnormal fetal presentations also after metroplasty has still to be explained.

FC-23

Atypical endometrial polyps: is resectoscopic treatment a safe option?

Federica Scrimin, Francesco Mangino, Sara Sacco,
Giovanni Di Lorenzo, Secondo Guaschino
Department of Obstetrics and Gynecology, Istituto di Ricovero e Cura a Carattere Scientifico Burlo Garofolo, University of Trieste, trieste,italy, Italy

OBJECTIVE: This study was undertaken to evaluate the long-term efficacy and prognosis of hysteroscopic resection and coagulation of the polyp base of endometrial polyps with focal atypia in postmenopausal women. STUDY DESIGN: In this observational noncomparative study, conservative treatment was offered to 16 patients, with high anesthesiologic risk, who had endometrial polyps with focal atypia and a surrounding atrophic endometrium. To confirm the focality of the lesion, the polyps were analyzed separately from their bases. Patients with atypia in the polyp base were excluded. RESULTS: After 5 years of follow-up, 13 patients are disease free, 2 underwent vaginal hysterectomy and annessiectomy due to other causes, and 1 died for cardiac disorders. CONCLUSION: Adenomatous polyps with atypia can be treated resectoscopically if the treatment is associated with an accurate histologic examination of the polyp base and its eventual involvement and the features of the remaining uterine mucosa. A thorough follow-up is recommended. Studies on wider casuistries of patients are needed.

TOPIC 4: New developments (instruments, techniques and procedures) 1

FC-25

Management of ovarian cysts via laparoscopic approach through one ancillary trocar

Metin Capar, Osman Balci, Ali Acar, Rengin Karatayli,
Mehmet Cengiz Colakoglu
Department of Obstetrics and Gynecology, Meram Medicine Faculty, Selcuk University, Konya, Turkey

Objective: To demonstrate a new technique of laparoscopic approach for benign ovarian cysts.
Materials and methods: The study was conducted to 193 patients who have been pre-diagnosed as benign ovarian masses. A primary 10 mm trocar was inserted, a second incision was opened at the side of the cystic lesion and an ancillary 5 mm sized trocar was protruded. The cystic ingredient was aspirated by needle inserted from ancillary trocar, the capsule was hold by endograsper inserted through same trocar. Capsule was tracted out of abdomen, simultaneously 5 mm trocar and endograsper were both taken out of abdomen. The capsule was detached completely. Bleeding control was done, ovary was released. After 24 hours all were discharged from hospital.
Results: Mean age of the patients was 28.2±1.4. No complication was detected related to technique. Mean duration of the operation was found to be 15±3 minutes. The size of the cysts ranged between 4-11 cm. The pathologies of the cysts were simple cyst in 84 cases, endometrioma in 44 cases, hemorrhagic cyst in 28 cases, serous cyst adenomas in 20 cases, dermoid cyst in 12 cases, mucinous cyst adenomas in 5 cases.
Conclusion: This technique is an alternative method of classical laparoscopic approach for ovarian cysts performed by two or more ancillary trocar placement. Duration of operation is shortened considerably. Complete excision of cystic capsule can be performed. And also the comfort of the patients is believed to be increased since there is no visible and additional incisional scar.
Key words : Ovarian cyst, Laparoscopic surgery, One ancillary trocar.

FC-26

Nostalgia to Ovarian Wedge Resection in PCOS: a Modified Selective Laparoscopic Technique

Alaa El Din El Guindy
Ain Shams University, Cairo, Egypt

Introduction: The management of the PCOS is symptom orientated. Induction of ovulation remains the most challenging goal. Various lines of therapy, medical or surgical, have been proposed with varying degrees of success, disappointment and dispute. Some patients are resistant to anti-oestrogens, gonadotrophins or laparoscopic ovarian diathermy. The latter has been sometimes accused for having no standards and causing ovarian damage when overdone. Bilateral wedge resection of the ovaries, in spite of having relatively good results, is nowadays obsolete for its bad reputation of causing pelvic adhesions. Modification has been tried to get the benefit with less complications.
Methods: Patients selected were those resistant to medical induction of ovulation with or without a previous laparoscopic ovarian diathermy. Ultrasound findings should indicate an obviously thick capsule and overwhelmingly increased ovarian size. Laparoscopic technique entails an overview of pelvic organs identifying the large, heavy and smooth ovaries with pearl-white capsule. Haemostasis is ensured by injection of a vasopressor agent in between the two leaflets of mesovarium. Both ovarian ligaments are then brought together by endoligature to fix the ovaries and hold them up. A wedge, designed and tailored to leave an optimally adequate ovarian volume, is then excised using a diathermy knife. The cut edges of the ovaries are then approximated with fine endosutures. Release of ovarian ligaments and peritonial wash are finally done.
Results: Overall results were satisfactory and encouraging. Those patients, who did not show ovulatory cycles or got pregnant within six months after operation and have undergone a second look laparoscopy, were nicely adhesion-free or left with minimal adhesions.
Discussion: Omitted techniques for their potential complications may be reappraised after the advent of new technologies and given a place.

FC-27

The Role of Laparoscopy in Autologous Ovarian Stem Cells Retrieving in Patients With Premature Ovarian Failure

Andrej Vogler[1], Irma Virant Klun[1], Helena Meden Vrtovec[1], Antonin Bukovsky[2]
[1]*University Medical Centre, Depatrtment of Obstetrics and Gynaecology, Ljubljana, Slovenia,* [2]*Laboratory of Development, Differentiation and Cancer, University of Tennessee Graduate School of Medicine, Knoxville, United States*

Introduction: Premature ovarian failure (POF) leads to inability of conceiving and having a genetically related child with their own oocytes in affected women, either spontaneously or via conventional in vitro fertilization (IVF). POF affects approximately 1 in 200 to 300 women under the age of 40. Existence of stem cells in adult human ovary is still controversial. The aim of our study was to collect possible stem cells, to culture them into oocytes and fertilize them in women with POF.
Methods: Five patients with POF underwent laparoscopy for possible ovarian stem cell retrieval. Three different approaches of retrieval were applied: 1. Scratching and brushing the ovarian surface, 2. Ovarian biopsy, and finally 3. Washing the ovarian surface followed by aspiration of the pouch of Douglas. A part of tissue was stained by hematoxylin-eosin to evaluate the presence of follicles and oocytes in the cortex, and by cytokeratin to evaluate the presence of surface epithelium. By retrieved cells, ovarian cell culture was set up in DMEM/F-12 medium with phenol red and weak oestrogenic activity. Ovarian cell culture was cultured for 16 days in a CO_2-incubator at 37°C and 5% CO_2. Differentiation of cells was followed morphologically. Oocyte-like cells were analyzed by poloscope.
Results: There were no follicles and oocytes in the ovarian cortex of all patients. In 4 patients a thick ovarian surface epithelium (OSE) was observed and in these patients ovarian cell culture was successfully established. Cells were attaching to the dish bottom and differentiating into different cell types, mostly fibroblasts. After 3 days of culture round oocyte-like cells started to develop and to grow. On day 4 to 6 of culture, typical germinal vesicle morphology appeared. At oocyte-like cells zona pellucida was confirmed and in two oocyte-like cells spindle was confirmed.
Discussion: Our work clearly showed that the ovarian cortex is the source of ovarian stem cells in patients with POF which can be cultured into oocyte-like cells. Diagnostic laparoscopy in infertile patients with POF can be combined with a simple ovarian stem cell retrieval to investigate the possibility of in vitro oogenesis. We believe that a chance for women with POF to conceive and have a genetically related child is becoming a reality in the not so far future.

FC-28

A new Narrow Band Imaging Endoscopic System for the Detection of Surface Pathology including Endometriosis

S. Chandakas, E. Salamalekis
[1]*Attikon University Hospital, Athens, Greece,* [2]*Iaso Gynecological Hospital, Athens, Greece*

INTRODUCTION: The purpose of introducing optical electronics into video endoscopes is to improve the accuracy of diagnosis through image processing and digital technology. Narrow-band imaging (NBI), one of the most recent techniques, involves the use of interference filters to illuminate the target in narrowed red, green and blue (R/G/B) bands of the spectrum. This results in different images at distinct levels of the mucosa and increases the contrast between the epithelial surface and the subjacent vascular network. NBI can be combined with magnifying endoscopy with an optical zoom. The aim of this new technique is to characterize the surface of the distinct types of gastrointestinal epithelia -

METHODS:A retrospective study at A university Hospital and a major gynaecological Hospital in Athens, Greece: 52 women, mean age 32,9 with possible diagnosis of endometriosis, 48% underwent surgery for fertility reasons
RESULTS We used NBI with magnifying endoscopy to image and biopsy randomly selected areas in all 52 patients. A systematic image and a biopsy specimen evaluation process was followed, including unblinded assessment of an exploratory set of images and biopsy specimens, and blinded evaluation of learning and validation sets. 82,7% of the lesions were labelled as endometriosis, whereas only 57.5% of the patients were initially diagnosed with endometriotic lesions
DISCUSSION: NBI and other similar technologies provides an electronic, easier alternative to chromoendoscopy to aid the endoscopist in differentiation among benign, premalignant, and malignant mucosal patterns, as well as early stage endometriosis.

FC-29

Laparoscopic reversible occlusion of the uterine arteries in myomectomy

G Gorchev, S Tomov
Medical University, Pleven, Bulgaria

Objective: The objective of the present study was to present a method for reversible laparoscopic occlusion of the uterine arteries in myomectomy.
Design and methods: Non-absorbable polyacetal polymer clips - Hem-o-lok (Weck Closure Systems) were used. After the identification of the uterine arteries, right next to their separation from artery hypogastrica, clips were placed with special instruments, aimed to decrease the blood supply to the uterine body and myoma node, respectively. Enucleation of the myoma node and suture of the uterine wall followed. The arteries were declipped. We applied the procedure to six patients with intramural-subserous myoma nodes.
Results: Myoma node sizes varied from 35 to 64 mm. The duration of the operation ranged from 90 to 134 minutes. The decrease of the postoperative hemoglobin in comparison with its levels before the operation, was with 0,6 –1,5 g/dL. The patients were discharged from the hospital on the second and third postoperative day. No intra- and early postoperative complications were determined.
Conclusion: The reversible laparoscopic occlusion of the uterine arteries with non-absorbable polyacetal polymer clips is an atraumatic procedure, which aids the enucleation of the myoma nodes. A randomized prospective trial is necessary to be conducted for the assessment of the certainty and effectiveness of this method.

FC-30

Loop in progressive tension technique for laparoscopic myoma enucleation

Fiorenzo De Cicco, Piero Carfagna, Carlo De Cicco, Alessandro Caruso
Università Cattolica del Sacro Cuore di Roma, Rome, Italy

Myomas are the most common benign disease of women in reproductive age; surgical treatment is often required since myomas are associated in about 30% of case with metrorrhagia, pelvic pain and sterility.
To preserve fertility in this patients a conservative approach is required.
There are different laparoscopic techniques for myomectomy, all focused on minimizing blood loss and avoid complications.
Our study aimed to evaluate efficacy and advantages of the "Loop in Progressive Tension" technique, in terms of hemostasis control and better myoma enucleation.
METHODS: eighty premenopausal women with uterine myomas underwent laparoscopic myomectomy performed with Loop in Progressive Tension technique. Uterine size and volume, number of myomas, operative time, enucleation time of each myoma, suturing time, blood loss, degree of surgical difficulty, and postoperative pain were evaluated.
RESULTS: 7.5% (6/80) of myomas were subserosal, 57.5% (46/80) mainly subserosal, 30% (24/80) mainly intramural and 5% (4/80) intraligamentary; the medium diameter was 57.36 mm.
Compared with classic laparoscopic myomectomy there were no differences in operating time and hospital staying; no intraoperative or postoperative complication were reported.
Mean blood loss was 125 ml and no laparotomic conversion was required.
CONCLUSIONS: The use of Loop in Progressive Tension technique could reduce the hemorrhagic risk of myomectomy. The loop make the enucleation easier due to better highlighting of the plain of clivage, since the site of incision is bloodless and the myoma is squeezed out by compression around the base.
Most of the laparotomic conversion of myomectomies are related to difficulties in enucleation or in achieving good haemostasis. The myomectomy with endoloop in progressive tension outwit these difficulties and offer a valuable option for laparoscopic myoma enucleation.

FC-31

Experimental studies of peroral transgastric abdominal surgery: tubectomy, hysterectomy. Is it next minimal invasive approach?

S. Chandakas, C. Feretis
Iaso Gynecological Hospital, Athens, Greece

INTRODUCTION: Incisionless endoscopic peroral approach to the peritoneal cavity in experimental animals shows promise as a less invasive form of surgery. The aim of this study was to demonstrate the feasibility and safety of peroral transgastric procedures with 4-6 weeks survival.
METHODS: A Prospective, randomized study at a University Hospital and a major Gynaecological Hospital in Athens, Greece. The procedures were performed on ten 28-50 Kgr anaesthetised pigs by using sterilized double channel endoscope. The gastric cavity was irrigated with antibiotic solution and access to the peritoneal cavity was gained after stomach wall incision with needle knife electrocautery

RESULTS: Peritoneoscopy (10 pigs), liver biopsy (1 pig), cholecystectomy (6 pigs) fallopian tube excision (1 pig) and hysterectomy (1 pig) were carried out. In four animals acute experiments were performed: peritoneoscopy liver biopsy and cholecystectomy were successfully accomplished without significant intraoperative complications. Survival studies in six pigs subjected to cholecystectomy tubectomy and hysterectomy showed uncomplicated recovery at 4-6 weeks
DISCUSSION: Evidence is given that per oral transgastric surgery is technically feasible and safe in a porcine model. The possibilities and limitations of the new method merit further studies.

TOPIC 5: New developments (instruments, techniques and procedures) 2

FC-32

Hysteroscopic sterilization in an outpatient setting

Miriam Mints, Sonia Andersson
Department of Clinical Science, Division of Obstetrics and GynaecologyKarolinska Institutet at Huddinge University Hospital, Stockholm, Sweden

Background Tubal ligation via laparoscopy has long been the technique of choice for tubal sterilisation. This procedure is performed in the operating room under general anaesthesia. Since 2002, hysteroscopic sterilisation with Essure device (Conceptus, San Carlos CA) is a viable option for women. The aim of this study was to evaluate the efficacy of hysteroscopic sterilisation in an outpatient setting.
Methods Fifty-six women had undergone hysteroscopic sterilisation in an outpatient setting between 2002 and 2007 at the Gynaecological Department of Karolinska University Hospital, Huddinge. Multiple data were collected from each patient including X-ray in the twelfth week following the procedure..
Results Hysteroscopic sterilisation was successfully completed in 54 (97%) women. The average time needed to perform the procedure was 15 minutes. Levels of tolerance of the procedure (VAS) were scored an average of 3 (range 0-5). The two failures were caused by the inability to insert the device due to tubal stenosis. There were no cases of uterine perforation and no unplanned emergency surgical procedures performed. Moreover, there were no cases of postoperative morbidity. At 12 weeks abdominal X-ray showed correct position of the device in all patients.
Conclusion Hysteroscopic sterilisation with Essure device is a safe and effective approach for permanent sterilisation and is feasible in an outpatient setting.

FC-33

Incorrect position of Essure inserts after successful bilateral placement.

S. Veersema[1], M.B.E. Gerritse[1], M.P.H. Vleugels[2], H.A.M. Brölmann[3]
[1]St. Antonius Hospital, Nieuwegein, Netherlands, [2]Rivierenland Hospital, Tiel, Netherlands, [3]VU University Medical Centre, Amsterdam, Netherlands

Introduction: Transcervical sterilisation using the Essure device is becoming increasingly popular as a means of permanent birth control. Worldwide more than 95.000 women have been sterilised with this method. No pregnancies are reported in women relying on Essure in Phase II or Pivotal trials. Until December 2005, 64 pregnancies were reported to the manufacturer. In 25% of these cases pregnancy was due to misread of the HSG.
Methods: In a prospective cohort study which was done in an outpatient department of Obstetrics and Gynaecology in a Dutch teaching hospital incorrect localisations of the Essure birth control device were detected and described at a three months follow-up. An initial series of 100 patients who underwent hysteroscopic sterilisation using Essure were included after informed consent. Women were advised to take a nonsteroidal anti-inflammatory drug (NSAID) one hour prior to the placement of the Essure micro inserts. The procedure was performed using a 5.5 mm continuous flow rigid hysteroscope. The hysteroscope was introduced using a vaginoscopic approach without speculum, tenaculum or local anaesthetics. After a three months follow-up all women underwent an transvaginal ultrasound, pevic X ray and hysterosalpingography.
Results: Successful bilateral placement of Essure micro inserts was achieved in 93 procedures (93%), tubal obstruction proven by HSG in 96.8% (90/93). At the follow-up three incorrect localisations of an Essure insert were seen, one abnormal position in the uterine cavity, one expulsion and one perforation into the abdominal cavity.
Conclusion: The Essure System is an efficient method of transcervical sterilisation. Failure of bilateral placement of Essure micro inserts occurred in 7% of patients. Incorrect localisations were only seen at follow up, when the initial placement procedure was difficult. An expulsion of a device is easy to recognise on HSG or pelvic X ray, while incorrect positions are more difficult to recognise. We advice to advance follow-up examination in patients with difficult placement procedures to detect incorrect localisations in an earlier phase with ultrasound followed by an HSG after 3 months if ultrasound is satisfactory. HSG's and pelvic X rays should be read by gynaecologist with knowledge of the initial placement procedure.

FC-34

Essure® Implants for Tubal Sterilisation in France

I. Grosdemouge, J.B. Engrand, C. Dhainault, H. Martigny, J. Thevenot, V. Villefranque, P. Lopez, P. Panel
Ch Versailles, Le Chesnay, France

Law n° 2001-588 of 4 July 2001 liberalised the practice of tubal sterilisation in France, at the same time as a new hysteroscopic method of female sterilization appeared. The growth of this method has been spurred by the reduced need for analgesia, absence of incision and scar, reduced duration of hospitalization and diminution of costs. The aim of this study was to analyse the

use of the Essure® procedure in France. This multicentre study covered 7 French facilities from January 2004 through June 2006 and collected information about parity, appearance of the uterine cavity, concomitant operative procedures, visibility of the ostia, anesthesia and placement outcome. This study included 912 attempted placements of the Essure® micro-insert, marketed by Conceptus (France).

908 attempted placements were analyzed. Patients' mean age was 41.1 years. The mean parity of the women requesting Essure® implants was 2.5 children, and 26 (2.9%) were nulliparous.

Analgesia varied greatly according to operator, patient's desire, and whether any concomitant procedure was performed. No analgesia was necessary in 435 cases (48%), and 74 patients had xylocaine for local analgesia. Fewer than half the patients had a spinal block (n=9), intravenous sedation (n=205) or general anesthesia (n=187). At least one comitant surgical procedure was performed in 12.5% of cases (n=108). Both ostia could be visualised in 93.7% of cases (n=850). In 4.73% (n=43), the operator could see only one. Neither ostium was visualised in 1.32% of cases (n=12). In 851 cases (93.7%), the first placement attempt was successful. The success rate for second attempts was 63% (n=35). The final failure rate for placement of Essure® inserts was 3.4%.

Tubal sterilisation with Essure® micro-inserts is a reliable and reproducible method that requires a short period of training. In the future, the hysteroscopic pathway will replace the laparoscopic route.

FC-35

Factors Predicting Failure in the Placement of Essure Micro-Inserts for Tubal Sterilisation: Prospective study of 495 Patients

I Grosdemouge, J.B Engrand, F Marchand, P Lopez,
C Dhainault, J Thevenot, V Villefranque, P Panel
Ch Versailles, Le Chesnay, France

A new hysteroscopic method of tubal sterilisation was introduced in 1999. Under hysteroscopic control, a micro-insert is introduced into the proximal portion of the Fallopian tube and is deployed before its release from the insertion catheter. We conducted a prospective multicentre study in France from January through June 2006 to assess the factors associated with failure of placement of Essure® micro-inserts.

A case report form completed at the end of each procedure reported parity, NSAID premedication, any anesthesia, visualisation of the tubal ostia during hysteroscopy and immediate outcome of the placement attempt.

495 women provided informed consent and were included. After a 4-month reconsideration period, 492 had Essure® micro-inserts placed uni- or bilaterally.

Mean parity was 2.45 children per woman, and 20 women were nulliparous. In 56.3% of cases (n=277), inserts were placed with no or only local anesthesia.

In 8.1% (n=40), another intrauterine surgical procedure was performed concomitantly. 423 (86%) of patients had NSAID premedication. In 24 cases, the tubal ostium was not visualised during hysteroscopy.

The failure rate for Essure® micro-insert placement on the first attempts was 5.9%, and 2.8% on the second attempt. The success rate was not significantly associated with parity, mode of analgesia, NSAID premedication, or the performance of a concomitant intrauterine surgical procedure. The only factor significantly associated with the failure rate was the inability to visualise the tubal ostia through the hysteroscope. In view of the cost of the insert and the risk of failure, surgeons should not attempt to place the micro-insert unless they can visualize the ostium.

FC-36

Office hysteroscopic sterilization using the Essure micro-insert device

M. Martinho, A. Reynolds, A. Melo, M. Pires
Hospital S.João, Porto, Portugal

Objective: The Essure permanent birth control (pbc) device is a minimally invasive transcervically placed micro-insert that occludes the Fallopian tubes, resulting in permanent female sterilization. The author's report their experience using this device in an office setting and present data about the safety, effectiveness and tolerance of the procedure.

Methods: The method was presented to women seeking permanent birth control that met the patient selection criteria recommended. Due to financial limitations procedures per year were limited to 28 and associated pathologies increasing operative risk were taken in consideration and favoured the choice of this method. The procedure was thoroughly explained to all women, a written informed consent was obtained and the procedures were scheduled preferentially to the follicular phase of the cycle and women were advised to use an effective contraception method. Essure pbc micro-inserts were inserted in the proximal portion of the Fallopian tubes under hysteroscopic visualisation with paracervical block or no local anaesthesia, in an office setting. Patients were evaluated 1 month after the procedure and a pelvic x-ray/hysterosalpingogram scheduled at 3 months. We analysed retrospectively all clinical files and evaluated, the safety of the procedure, the tolerance and recovery from the procedure, tubal occlusion and device placement.

Results: From May 2002 to December 2006, 119 women aged 26-47 (37,87) were submitted to the procedure; Associated pathology increasing the operative risk was present in 114 (95,80%)patients. Bilateral device placement was achieved in 115 (96,64%) women. In 6 (5,04%) women a second procedure was required to accomplish bilateral placement. In 1 (0,84%) only unilateral placement was possible. In 4 cases (3,36%) expulsion of one device occurred. The procedure was classified to be highly acceptable by 106 (89,08%) women. Regarding medication, 31 (26,05%) women received diazepam, 5 mg, orally prior placement and N butil bromide of hioscine i.v. during procedure and 82 (68,91%) ibuprofen, 30 minutes before the procedure; 17 (14,29%) patients had paracervical block and 43 (36,13%) needed analgesic medica-

tion during or immediately after the procedure but, no patient complaint from post-procedure pain at the moment of discharge. No major complications occurred. All patients but 6 (94,96%) had a correct device location and/or bilateral tubal occlusion 3 month after procedure as confirmed by HSG/pelvic x-ray. Three of these patients achieved it at the 6th month post-procedure with an overall occlusion rate of 97,48%. At present, these women rely on Essure for permanent birth control and no pregnancies occurred. Mean duration of the procedure was 9,4 minutes.
Conclusion: According to our experience this method can be safely performed with minimal patient's discomfort in an office setting, with a rapid recovery, high patient satisfaction and low rate of complications; The main advantage of this method is to avoid the need of a surgical procedure and general anaesthesia to achieve permanent birth control and it should, at present, be considered an effective alternative to women seeking sterilization especially to those with increased operative risk.

FC-37

Hysteroscopic sterilisation (Essure)- evaluation of the first 115 cases

Jaana Fraser, Sirpa Ikonen
North Karelian Central Hospital, Joensuu, Finland

The use of the new hysteroscopic sterilisation device Essure was started in our hospital in 2003. Since May 2004 we have offered hysteroscopic sterilisation as an alternative to laparoscopic sterilisation to all women without contraindications. Between 1/04–8/06 467 sterilisations were performed in our hospital, 123 by Essure method.
Objective: To evaluate the success rate of the procedure, effectiveness of the premedication, pain score during the process and patient satisfaction after the procedure.
Material and methods: Between 3/04–8/06 123 tubal occlusions were performed by Essure method. We collected data from the first 115 cases. Premedication was taken at home: ibuprofein 600–800 mg two hours before the procedure and 1000 mg paracetamol one hour before the procedure. The procedure was performed in the day care unit on an outpatient basis. The procedure was performed by 8 specialists (1–44 cases/specialist). We used rigid 5,5 mm continuous flow hysteroscope with 5-French working channel (Stortz) with saline 0.9% solution. I.v. painkillers were given if needed. We also asked patient satisfaction one year later by sending a questionnaire to 58 patients (75% returned). The rest of the patients will get the questionnaire 8/07.
Results: The average age of the patients was 38,5 yrs (range 27–46), parity 2,6 (range 0–9). The procedure time was 3–65 min, average 10 min (median 10 min, SD 5,32). Successful placement was achieved in 92,2% (106/115). 11 patients needed cervical dilatation and paracervical block. The average pain score during the procedure was 3,8 (0–10), median 3, SD 3,1. No complications occurred. Three months after the procedure ultrasound was performed to evaluate the placement of the implants. In two cases one of the implants had slipped off into the uterine cavity. All the patients were happy with Essure three months after the procedure, however after one yr two patients regretted the procedure. No pregnancies by 4/07.
Conclusions: Essure sterilisation is an easy and safe method. In our clinic 8 specialists were doing the procedures and the success rate was good in the learning process. All the specialists were experienced in doing hysteroscopies. By using a smaller hysteroscope the pain score could have been lower.

FC-38

Essure: Our experience

Francesco Mangino, Federica Scrimin, Giovanni Di Lorenzo, Sara Sacco, Secondo Guaschino
IRRCS Burlo Garofolo, Dipartimento di Ginecologia ed Ostetricia, trieste, Italy

BACKGROUND: We studied the safety and effectiveness of Essure pbc, a minimally invasive, transcervically placed micro-insert that occludes the Fallopian tubes, resulting in permanent female contraception.
MATERIALS AND METHODS: We undertook a prospective study of 77 consecutives cases from June 2004 to March 2007, of patient in Day Surgery regimen who underwent hysteroscopic tubal sterilization. The median age was 38,9 years (range 27–47 years); the median parity was 2,11 (range 0–6).
Bilateral micro-insert placement was successfully performed in 76 (97,4%) patients; 3,7% in 2005 and 7,3% of patients have monolateral insertion and 11,1% in 2005 and 7,14% in 2006 have expulsion of essure. Mean operating time was 19,22 min. (range 5–60 min).
On 77 patients 55,84% underwent to anaesthesia.
All patients were able to return to normal activity within 24 hours.
The hysterosalpingography performed 3 months after the procedure confirmed tubal occlusion in 30 patients, only 36 have concluded the follow-up.
CONCLUSION: The Essure pbc method of permanent contraception is an exciting alternative to vasectomy or laparoscopic sterilisation that does not require incisions and in the most of cases anaesthesia; moreover, there were neither short nor long term severe complications.

FC-40

Essure sterilisation: Unfortunately one pregnancy

Marlies Bongers, Josje Langeveld, Carolien Koks
Maxima Medical Centre, Veldhoven, Netherlands

Objective: Prospective evaluation of the Essure sterilisation procedures
Design: Case report
Setting: Teaching Hospital.
Patient: A healthy women of 41 years old opted for an Essure sterilisation. After counselling she was scheduled for the procedure.
Interventions: Essure sterilisation in the outpatient clinic. Premedication: 500 mg Naproxen (NSAID) 12 and 1 hour before treatment. No other medication was given. The hysteroscope with a diameter of 5.5 mm was introduced in the uterine

cavity. The vaginoscopic method was used with warm saline to pass the cervix. After inspection of the uterine cavity, both the tubal ostia were visualised. The right Essure device was introduced easily. The left Essure device was introduced easy as wel although the inner canule was devided from the outer catheter. A new device was placed on the left side. Total procedure: 6 minutes

Control: 3 months control with ultrasound showed an Essure device on both sides, located in the tubal region. Extra contraception was stopped. Patient became pregnant 4 months later. She decided to have an abortion. After this procedure a hystersalpingograghy was performed as well as an X ray abdomen. The left tube showed passage of the contrast fluid. The device on the left side seemed to be curled. With laparoscopy the device could not be seen and was situated under the serosal tissue of the uterus. We decided not to remove the Essure and performed a Filshie clip sterilisation.

Conclusions: Pregnancy after Essure sterilisation. We will discuss if an ultrasound as check of the correct Essure localisation will be a solid procedure.

TOPIC 6: New developments (instruments, techniques and procedures) 3

FC-41

Enhancing Laparoscopic Skills with the LTS3e: A Computerized Hybrid Physical Reality Simulator

Liselotte Mettler[1], Ayodapo Samuel Soyinka[1], Dattatraya Gopalghare[1], Ivo Meinhold[1], Harrith Hasson[2]

[1]University of Kiel, Dept. of OB/GYN, Kiel, Germany, [2]University of New Mexico, Albuquerque, New Mexico, United States

Introduction: To determine the value of this interactive simulator in acquiring basic laparoscopic skills among its users and to evaluate the correlation between the frequency of trials/practice and the overall performance. Design: cross-sectional study with paired analysis. Subjects: Twenty five in-training gynaecological endoscopic surgeons from various parts of the world and fifteen third year medical students of the above institution.

Methods: Verbal explanation and video demonstration of a set of 10 laparoscopic skill tasks, suitable for application in endoscopic surgery, was presented to participants before administration of a pre-test. Voluntary rounds of further trials were encouraged thereafter, based on self motivation. The post-test were administered five days later once the participant was comfortable performing the tasks. Assessments were conducted by the same independent supervisor and recorded on the LTS3e simulator.

Results: Improvements in overall scores, relative performance mean scores using the independent t-test and comparison of various trial groups' mean by the ANOVA.

There was significantly better post-test scores in all the tasks for both groups compared to the pre-test scores $p<0.0001$. There was no statistical difference between the overall relative training outcomes of both groups (when the numbers of trial rounds were taken into consideration) $p=0.471$. There was significant difference in group mean scores between the group of trainees who performed five or more rounds of trials and those with two and three trials ($p<0.012$ and $p<0.018$ respectively.

Discussion: The LTS3e simulator device substantially contributes, to acquisition of laparoscopic skills in the less experienced or novice trainee surgeon. Performance improves progressively with practice.

FC-42

Subaracnoidal anesthesia by l-bupivacaina and sufentanil In gas-less laparoscopy by "gas-lup" (abdominal lifting device). Preliminary study

N.Gasbarro, F.Lucke, E.Marino, N.Annunziata

Asl Naples 2 , Pozzuoli Hospital, Uoc Obstetric And Ginaecology, Uoc Anaestetic And Resuscitation, Naples, Italy

Pneumoperitoneum gives necessary space to look into the abdomen and moving laparoscopic device. Pneumoperitoneum affects patient breathing and hemodynamic. PaCo2 rising could give a worsening in cardiopulmonary patients. Breathing failure, IMA, arrythmia were reported. Pneumoperitoneum gives a reduction of venous getting back and cardiac output caused by rising of abdominal pressure. These changes are worse in cardiologic patients. Gas-less laparoscopy avoids cardiopulmonary unfavourable effects of pneumoperitoneum and it allows the surgeon to operate in subaracnoidal anesthesia. In literature there are a few studies on gas-less laparoscopy by subaracnoidal anesthesia especially in cardiopulmonary patients. We bring our experience about ginecologyc surgery performed by gas-less laparoscopy in subaracnoidal anesthesia (using Gas-lup abdominal lifting device). Subaracnoidal anesthesia with L-Bupivacaina and Sufentanil showed itself to be a good technique that guarantees patient comfort and surgeon need. Locoregional anesthesia avoids narcosis risk. Choosing a low toxicologic profile anestetic for local use we cut down adverse reactions(cardiac or nervous). L-Bupivacaina guarantees hemodynamic stability and it's very useful during surgery: patients showed mild systolic and diastolic lowering (5–15%) of blood pressure in the 30 minutes after anesthesia. Being normobaric, L-Bupivacaina allows Trendelenburg position at the beginning of operation. Such position is useful for surgeon to have a better anatomical view, but using iperbaric anestetics we could have a dangerous rising of anestetic level. L-Bupivacaina and Sufentanil allow us to avoid such unfavourable effects. No patient showed nausea, vomiting, bradhycardia, low blood pressure, sedation till the end of anestetic block. By this technique we have reduced analgesic administration after surgery. Minimally invasive surgery and subaracnoidal anesthesia together give an early well-being for patients. Confining to bed and hospital charge were reduced. Finally we consider subaracnoidal anesthesia with L-Bupivacaina and Sufentanil in gas-less laparoscopy useful for patients and surgeons. Other studies could confirm our results and permit an extensive use of this technique in ginecologyc surgery.

FC-43

Thermal Fusion – Evaluating key parameters in a human in vivo model

Christian W Wallwiener[1], Markus Wallwiener[1], Michael Menger[2], Wolfgang Zubke[1], Keith B Isaacson[3]
[1]*Department of OB/GYN, University of Tuebingen, Germany,* [2]*Department of Experimental Surgery, University of Homburg, Germany,* [3]*Minimally Invasive Gynecologic Surgery and Infertility, Newton-Wellesley Hospital, Harvard Medical School, Boston, United States*

Introduction: Suboptimal success and reliability of electro-surgical vascular control devices plus lack of profound knowledge of the mechanisms of action necessitate research on decisive parameters in electro-surgical vessel sealing. Moreover, a standardized human in vivo model was to be established to further evaluate the thermal spread and damage in coagulation.
Methods: In an experimental study conducted at the research facilities of the Department of OB/GYN of the University of Tuebingen, Germany, thermal fusion was studied in a human in vivo setup in 10 patients undergoing radical hysterectomy and in more than 70 porcine vessels in an in vitro setup. In the human in vivo model, the thermal effects of bipolar coagulations of the fallopian tubes were analysed via in situ heat sensors, ex situ heat camera as well as subsequent macroscopic analysis and enzyme histopathology. In the in vitro study, porcine vessels of different calibres were coagulated ex vivo with subsequent burst pressure analysis with the aim of separately evaluating the influence of pressure and heat on the coagulation process without current induced effects.
Measurements and Main Results: In the in vitro study, an ideal amount of pressure between the forceps during coagulation could be identified which varies between arteries and veins. Both the maximal temperature and the length of coagulation impacted significantly on the coagulation result. Although pressure and heat were sufficient to close vessels, current induced effects were necessary to reliably seal the vessels. In the in vivo study, a standardized model could be established. The thermal spread could be evaluated through both ex situ thermo-mapping and in situ heat-sensors and correlated with histopathology.
Conclusion: The underlying data emphasize that knowledge about thermal fusion with special regards to decisive factors of thermal fusion must be included in electro-surgical approaches and that thermal spread and thermal damage should be further studied in a standardized human in vivo model.

FC-44

Pulsative Index after Enhancement of Intravenous Contrast may Discriminate Endometrial Polyps and Cancer

Marit Lieng, Erik Qvigstad, Gunn Fallås Dahl, Olav Istre
Ullevål University Hospital, Oslo, Norway

Objective. To evaluate whether assessment of angiogenesis by transvaginal color doppler, three-dimensional ultrasonograpy and power doppler angiography, enhanced by intravenous contrast, may be useful tools in the differentiation between benign and malignant endometrial changes.
Design and Methods. Prospective study comparing patients with benign endometrial polyps and patients with endometrial cancer.
Setting: University Teaching Hospital. Patients: Seventeen patients with benign endometrial polyp and 17 patients with histological confirmed endometrial cancer.
Interventions: Transvaginal color doppler, three-dimensional ultrasonograpy and power doppler angiography performed before and after injection of intravenous contrast. The pulsatility index (PI) and the resistance index (RI), as well as the endometrial power doppler flow indices vascular index (VI), flow index (FI) and vascular flow index (VFI), were calculated before and after enhancement by contrast and compared between the two groups of patients.
Statistical Analysis: A two-sided Fisher exact test was used when comparing dichotomous variables and a two-sided t-test was used when comparing continuous variables in the two groups. Receiver operating characteristic (ROC) curve analysis was performed in order to assess the diagnostic properties of PI. The significance level was chosen to be 0.05.
Results: PI and RI were significantly lower in the vessels in the malignant tumors compared to the benign endometrial polyps after enhancement by intravenous contrast (PI: $p=.004$, RI: $p=.045$). PI and RI in two patients with malignant endometrial polyps were comparable with the findings in patients with endometrial cancer. No significant differences in PI, RI, VI, FI or VFI prior to enhancement by contrast, or in VI, FI or VFI after enhancement by contrast were detected when comparing patients with endometrial polyp and patients with endometrial cancer.
Conclusion. Transvaginal color doppler examination enhanced by intravenous contrast of the feeding vessel may discriminate between benign endometrial polyps and endometrial cancer prior to decision of surgery.

FC-45

Should asymptomatic endometrial polyps be resected?

B. Verdnik Golob
General Hospital Slovenj Gradec, Slovenj Gradec, Slovenia

Background. The prevalence of endometrial polyps (EP) is high (25%), but the risk of malignancy low (0.5–4,8%). Women are often asymptomatic. More EP are being diagnosed with the use of transvaginal ultrasound scanning. The purpose of this study was to determine whether clinical risk factors and symptoms can predict their histopathological characteristics and whether is it safe to leave the asymptomatic EP in uterus.
Methods. Retrospective study of 365 women with removed EP in the years 2001–2007 was done. 52,9% patients underwent operative histeroscopy, 47,1% uterine curettage. Clinical data were obtained from patients' medical reports. EP were subdivided groups as symptomatic A and asymptomatic B; benign (benign, hyperplastic without atypia) and malignant (hyperplastic with atypia, cancerous). Statistical analysis was performed. Differences between groups were evaluate using Mann-Whitney test. As a measure of bivariate correlation the Spearman Rho was used.

Results. In 285 patients (70,7%) EP were symptomatic, in 107 (29,3%) asymptomatic . In group A 2 hyperplastic EP with atypia and one cancerous EP (0,8%) were found. In group B all were benign. Patient age ($p<0.01$, positive correlation) and menopausal status ($p<0.01$, negative correlation) were associated with symptoms significantly. Hypertension showed significant association with malignant EP ($p<0.01$).
Conclusions. The incidence of malignancy is low. Symptoms were correlated with age, in postmenopausal women more likely asymptomatic. Hypertension is associated significantly with malignant degeneration of EP. Asymptomatic EP were all benign but not significantly. Hystopathology remains the golden standard. Their removal (hysteroscopic) would be rationale, especially in hypertensive women.

FC-46

A new method for local anaesthesia by hysteroscope

Michel Vleugels
Riverland Hospital, Tiel, Netherlands

Diagnostic hysteroscopy can be performed without dilatation of the cervix due to the small diameter of the CF-hysteroscope now a day. Without the need of dilatation of the cervix, local anaesthesia is not necessary in most cases. Using the 5-french working channel, these small hysteroscope are used to take a biopsy or to perform small surgical procedures. i.e. polyps smaller than 5 mm.
The removal of bigger polyps, broad based polyps, fibroids or the cuttings of synechien are too painful to be done without anaesthesia. The application of local anaesthesia clockwise around the cervix creates analgesia in the cervical channel and the lower part of the uterine cavity. However, the innervation of the upper part of the uterus is supplied by nerves coming down along side the Infundibulum Pelvicum. Application of heat (coagulation, vaporisation), cryo-coagulation or a deep trauma (cutting, vaporisation), will be experienced as painful due to stretch or pressure receptors in the muscle layers or the innervations of the serosa of the uterus. Local anaesthesia can reduce these pains, but application by the hysteroscope is difficult due to the parallax between the optic and the straight needle as well as dangerous by the risk for perforation due to the lack of a good vision on the tip of the needle.
A special needle has been designed to overcome these problems; the surgeon can follow the tip of the needle and can place easily local anaesthesia at the base or under the base of the pathology by the angle between tip and needle ; perforation risk is reduced by this good vision and the different diameter between tip and needle. The first experiences will be shown, analysed and discussed.

FC-47

Comparison Ovabloc vs. Essure Hysteroscopic Sterilization

Andreas L. Thurkow
St Lucas Andreas Ziekenhuis Amsterdam, The Netherlands

There are two hysteroscopic sterilization methods on the European market: Ovabloc and Essure.
Ovabloc has been on the Dutch market since 1988 (CE 0344 approved), Essure since 2003 (CE and FDA approved).
To our knowledge momentarily only two centers offer both sterilization methods: Spaarne Ziekenhuis Hoofddorp and St Lucas Andreas Ziekenhuis Amsterdam, both in the Netherlands.
Although there has never been a RCT to compare both methods this presentation will address the differences in terms of duration, pain sensations, technical aspects, ease of performance, success rate (bilateral placement and pregnancies), personnel needed and costs. This is to our knowledge the first attempt to compare both methods.
The retrospective data presented have all been collected in the St Lucas Andreas Ziekenhuis Amsterdam, where Ovabloc procedures have been performed since 1991 (n=351) and Essure procedures since the end of 2004 (n=124).
The results show that Essure performs far better in terms of duration of the procedure, pain sensation and reliability. For Ovabloc an extra assistant is mandatory. On the other hand the material cost of Ovabloc is almost half that of Essure.
Whether the short duration of the procedure (about 3 fold) and the lack of needing an extra assistant compensates for the price difference depends on a large variety of local factors and will vary accordingly between settings and countries.
In our institution both methods are still available, but the ultimate choice we might have to face will partly depend on the definitive results of this comparative study and the subsequent RCT we are planning to perform.

FC-48

Hysterosonography to Verify Hysteroscopic Tubal Sterilisation with Essure®

Juan Berrocal, Béatrice Ostyn, Denis Thoumas, Gerome Lucas
Clinique De L'europe, Rouen, France

Because of its simplicity, hysteroscopic tubal sterilisation is becoming the reference method. Its principal disadvantage involves the verification of its effectiveness, since the standard examinations are radiography, which is sometimes imprecise, and hysterography, which is often poorly tolerated.
The objective of this work was to study the usefulness of hysterosonography (saline contrast intrauterine ultrasound) in comparison with standard pelvic radiography.
Our prospective study included 116 women. At 3 months after placement of the Essure micro-inserts, each woman underwent pelvic radiography and hysterosonography. As is currently recommended, efficacy was assessed by standard radiography, and in cases of doubt, hysterosalpingography was performed.
Tolerance of the hysterosonography was always excellent (there were 2 equipment-related failures); visualisation of the implants and especially their position relative to the uterine cavity was perfect each time.
If there was any doubt about migration of the inserts, either within the uterine cavity (2.5%) or in the tube (4.3%), hysterosalpingog-

raphy was performed and compared with the hysterosonographic images.
Hysterosonography is much more widely accessible than 3D ultrasound. These data confirm that, because of its simplicity and its safety, it allows a more objective verification of this sterilization method than does simple radiography.

TOPIC 7: THE UTERUS

FC-49

Prevalence of Mullerian Anomalies in Patients with Infertility

Daniel Tutunaru, Dan Ioan Ulmeanu, Bogdan Alexandru, Ioana Luiza Condulescu
Elias Emergency Hospital, Bucharest, Romania

Aim: to reveal the prevalence of congenital uterine anomalies in patients who underwent laparoscopy for unknown infertility.
Material and Methods: this is an ongoing, prospective, non-randomised study. Inclusion criteria: patients in their fertile age who signed inform consent and chose to perform laparoscopy for infertility. Study begun in august 2003. Exclusion criteria: previous open surgeries, chronic pelvic pain, previous pelvic infections, malignancy.
Results: From 871 patients included we discovered 104 cases of mullerian anomalies (11.9%). In 71 cases there was also associated endometriosis, which could eventually explain the infertility. All these patients underwent electrocoagulation of the endometriotic implants. We discovered 11 unicornuate uteri with non-communicating rudimental horn which were treated by laparoscopic removal of the residual horn. In 17 cases of communicating rudimental horn, laparoscopic unilateral sealing of the respective fallopian tube was performed in order to prevent pregnancy in the compromised hemiuterus. There were also 24 cases of unique unicornual uterus Four cases showed unilateral hypoplasia of the fallopian tube together with severe impaired ovarian development, even though they share no common embryological origin. There were 41 cases of bicornuate uteri, and in 2 of them laparoscopic presacrate nerve ablation was performed in order to relieve severe pain. There were 7 cases of unilateral agenesia of the fallopian tube with normal ovary.
Conclusions: in our study regarding patients with infertility, mullerian anomalies showed a prevalence of 11.9%, which is significantly higher that the normal healthy fertile population, in which müllerian duct anomalies have a prevalence of 3-5%.

FC-50

Outcome following Laparoscopic Supracervical Hysterectomy

Marit Lieng[1], Erik Qvigstad[1], Olav Istre[1], Anton Langebrekke[1], Karen Ballard[2]
[1]*Ullevål University Hospital, Oslo, Norway,* [2]*University of Surrey, Guildford, United Kingdom*

Objective. To evaluate the long-term outcome following laparoscopic supracervical hysterectomy (LSH).
Design and Methods. Retrospective postal survey assessing the occurrence of cervical stump symptoms, such as persistent vaginal bleeding and pelvic pain, patient acceptability of cervical stump symptoms and overall patient satisfaction following LSH.
Setting: University Teaching Hospital. Patients: 315 patients treated by LSH during 2004 and 2005.
Interventions: None.
Statistical Analysis: Descriptive as well as inferential methods where used. A Chi square test was used when comparing dichotomous variables in two groups and a two-sided t-test when comparing continuous variables. Multivariate regression methods were used to adjust for confounding variables and to identify predictive factors of the outcome.
Main Results: The response rate was 76 %. 76 % of responders suffered from menstrual pain and 85 % reported having heavy bleeding before the hysterectomy. The mean intensity of pain, scored on a 10-point visual analogue scale (VAS) was 6.8 before the hysterectomy. 24% experienced persistent vaginal bleeding after hysterectomy, although this was rated as minimal in 90% of cases. The mean degree of bother caused by vaginal bleeding after the hysterectomy, scored on the VAS score, was There were significantly higher rates of persistent vaginal bleeding in patients treated by less experienced surgeons ($p=0.02$). 37 % suffered from menstrual pain 2–3 years after the hysterectomy, with a mean intensity of pain of 3.5 on the VAS. 3% had received medical treatment and 3% had received surgical treatment due to cervical stump symptoms after the hysterectomy. 92% were satisfied or very satisfied with the hysterectomy. Conclusion: Although cervical stump symptoms appear to be relatively common following LSH, patient satisfaction following the procedure is reported to be high.

FC-51

A multicentered series of 750 daycase laparoscopic subtotal hysterectomies in the UK and Greece : the new approach to hysterectomy

S. Chandakas[2], N. Hill[1], J. Erian[1]
[1]*Princess Royal University Hospital, London, United Kingdom,* [2]*Iaso Gynaecological Hospital, Athens, Greece*

INTRODUCTION: During the last 10 years, minimally invasive surgery has influenced the techniques used in gynaecology, with an overall minimisation of complications and increased patient satisfaction. To demonstrate the safety, feasibility and morbidity of laparoscopic subtotal hysterectomies in a day-care setting
METHODS: A Retrospective, descriptive, non randomized study at 2 University Hospitals in London, UK and Athens, Greece: For the patients who underwent a laparoscopic subtotal hysterectomy in 40 months (November 2002- March 2007), data were collected from medical records on how the intervention was performed, followed for 18 months. 750 subtotal hysterectomies were performed by two surgeons. Indications included 24.6% cases for endometriosis, 63% for menorrhagia, 12.4% for endometrial pathology. Median follow-up was 78 weeks

RESULTS: Duration of operation and of hospital stay, safety (morbidity and mortality), and patient satisfaction were assessed Estimated blood loss was 70 ml (range 50–2000 ml) Intraoperative complications: 0.55% had significant complications. 0% vascular injuries and 0% nerve or ureter injuries.2,7% had cyclic bleeding. Early postoperative morbidity included 0.2% deep vein thrombosis, 0% pulmonary embolism, 2.2% bladder infection and dysfunction. The overall complication rate was 1.53%. 3 of them required drainage for intra-abdominal abscess Hospital stay of these 750 patients, 91.8% were discharged to home the same day with an average length of stay for these patients of 10 hours
DISCUSSION: Laparoscopic subtotal hysterectomy can be safely performed as a day-care procedure.

FC-52

A Safe Technique to Prevent the Complications of Laparoscopic Hysterectomy: 1120 Cases Performed by a Single Surgeon

Yucel Karaman[1], Mehmet Ali Akman[2], Husamettin Uslu[2], Cuneyt Ozcan[2]
[1]Centre Hospitalier Interregional Edith Cavell, Bruxelles, Belgium, [2]Kadir Has University, Metropolitan Florence Nightingale Hospital, Istanbul, Turkey

Objective: The purpose of this study is to define a safe technique with CO2 laser in laparoscopic hysterectomy without any bladder, uretheral or major blood vessel injuries.
Design and Methods: A total of 1120 women ages ranged between 38 to 90 with benign desease underwent laparoscopic assisted vaginal hysterectomy (LAVH) or laparoscopic hysterectomy (LH) at our institution. Surgical indications of LAVH and LH were uterine myoma, premalignancy, endometrial ablation failure, endometriosis / rectovaginal nodule, benign adnexal mass, non-communicant rudimentary horn and pelvic inflammatory disease. This prospective study was conducted between 1992 and 2004 and all LAVHs and LHs were performed by the same laparoscopic surgeon. LH was performed with the combination of bipolar forceps for hemostasis and CO2 laser for dissection, vaporization and excision. SPSS 9.0 statistical package with Kolmogorov-Smirnov test, Mann-Whitney U test and chi-square test, was used for statistical analysis.
Results: Among 1120 subjects, 542 LAVH and 552 LH were successfully completed (98.8%) by using CO2 laser and bipolar forceps. The duration of the operations were 35 to 180 minutes, with a median of 52 minutes (range 35–163) for LAVH (n=542) and 55 minutes (range 42–180) for LH (n=552). In 26 patients (2.3%) conversion to laparotomy was performed due to ovarian cancer, dense adhesions, frozen pelvis (tuberculosis), tubal adenocarcinoma, under-estimation of the uterine volume, non-mobilization, and high pulmonary pressure and non-tolerance to Trendelenburg's position. Laparotomy was not needed in order to treat a major complication. The mean postoperative hospital stay was 2 days. No bladder, uretheral or major blood vessel injuries was noted. The overall rate of major complications was 1%. Five patients in the LAVH group and 6 patients in the LH group experienced major complications such as abdominal bleeding, pelvic infection, intestinal perforation, pneumothorax and postoperative vaginal bleeding.
Conclusion: The technique used in our study with bipolar forceps and CO2 laser is safe and effective for LAVH and LH procedures, resulting in a shorter duration of operation and a decreased incidence of bladder, uretheral and vascular injuries.

FC-53

Finhyst 2006 - early results from a national hysterectomy study from 53 hospitals

Tea Brummer[1], Jari Sjoberg[1], Jyrki Jalkanen[1], Paivi Harkki[1], Eija Tomas[2], Jaana Fraser[3], Anna-Mari Heikkinen[4], Minna Kauko[5], Ulla Puistola[6], Juha Makinen[7]
[1]Helsinki University Central Hospital, Department of Obstetrics and Gynaecology, Helsinki, Finland, [2]Tampere University Central Hospital, Tampere, Finland, [3]North Carelia Central Hospital, Joensuu, Finland, [4]Kuopio University Hospital, Kuopio, Finland, [5]Suomen Terveystalo, Helsinki, Finland, [6]Oulu University Hospital, Oulu, Finland, [7]Turku University Central Hospital, Turku, Finland

Introduction: Evaluation of current hysterectomy trends and complications
Methods: A national prospective study carried out 1.1.-31.12.2006 collecting data on most hysterectomies performed in Finland for non-malignant indications, including all 46 public clinics performing hysterectomy, in addition data was received from 7 private clinics. Detailed questionnaires were filled by performing gynaecological surgeons including their experience in the particular approach for hysterectomy and whether they are residents or specialists; the patient data included age, bmi, parity, prior cesarians, laparotomies and laparoscopies. The operation data included hysterectomy method and indication, operating time, uterus weight, antibiotic and thrombosis prophylaxis, haemostatic method, concomitant surgery, intra- and postoperative major and minor complications and their treatment, hospital stay, sick leave and return to hospital due to complications. The patients filled questionnaires at 8 weeks after surgery describing their recovery.
Results: N=5285. Hysterectomy approaches: Total abdominal (TAH) 22%, subtotal abdominal (SAH) 2%, laparoscopic (LH) 24%, laparoscopically assisted vaginal (LAVH) 6%, vaginal (VH) 44% and conversion to TAH/SAH 2% of which 90% from laparoscopic and 10% from vaginal. Indications: Fibroids 32%, prolapse 28%, dysfunctional uterine bleeding 21%, adnexal mass 6%, dysmenorrhea 3%, endometriosis 2%, other 8%. Overall incidence of major intraoperative complications was 4.1%, in detail hemorrage ≥1000 ml 3.0%, visceral damage to bladder 0.7%, bowel 0.2% and ureter 0.02%. In the laparoscopic hysterectomy group intraoperative major complications occurred as such: Hemorrage ≥1000 ml 3.1%, visceral damage to bladder 0.8%, bowel 0.3% and ureter 0%. Complications detected postoperatively are still under evaluation.
Discussion: A 2006 Cochrane review on surgical approach to hysterectomy suggests that VH should be performed in preference to AH and if not possible, LH/LAVH used to avoid

AH. In Finland in 2006 VH is most common and AH least common.

FC-54

Randomized controlled trials comparing vaginal and laparoscopic routes of hysterectomy: why their conclusions might be flawed?

Horace Roman[1], Thomas C Hulsey[2], Loic Marpeau[1]
[1]*Department of Gynecology and Obstetrics, Rouen, France,* [2]*Department of Pediatric Epidemiology, MUSC, Charleston SC, United States*

Objective: To reveal the weaknesses of randomized controlled trials (RCT) comparing the laparoscopic and vaginal hysterectomy, namely the oversight of the interactions between surgeons involved in the trial and the surgical route allocated by randomization, and to show how the conclusions might be flawed.
Methods: We simulated a RCT which included 96 women and compared the time involved in laparoscopic and vaginal hysterectomy. There were 3 experienced senior surgeons enrolled, who were using different surgical procedures in their daily practice. The operative time related to each surgical route was estimated using data provided by RCT and systematic review previously published in the literature. Statistical analysis included the Chi square, ANOVA and the Student t test, as well as the linear regression model.
Results: When operative times were compared between two arms without considering the interaction surgeon-technique, the laparoscopic route was associated with significant increase in operative time. When the statistical analysis considered the interaction between an individual surgeon and a technique, the increase in the operative time was no longer related to the laparoscopic route but rather to the interaction between surgeon and technique.
Conclusions: In RCT comparing newer to older surgical procedures, the oversight of interactions between surgeons and new procedures might lead to flawed results unfavorable to new techniques. RCT are seldom contested, even when the results are erroneous, and therefore may have major consequences on both the development and the widespread use of new techniques.

FC-55

Hydrothermalablation (HTA) versus transcervical endometrial resection (TCRE) for the treatment of recurrent menorrhagia

R. Rui, S. Fantinato, F. Manganelli, G. Ambrosini, E. Spiller, P. Litta
University of Padua, Padua, Italy, Italy

Introduction: This prospective randomized study was designed to evaluate the safety and efficacy of endometrial ablation with the HTA device compared with transcervical endometrial resection. HTA is a simple and rapid procedure and has the objective to exceed the difficulties due to endometrial resection such methabolic and vascular complications.
Methods: women with menorrhagia were recruited in a prospective randomized study. We treated 60 women: 30 with HTA device and 30 with TCRE, randomized by computer generated block on a 1:1 (HTA. Endometrial resection). They had a median age of 45.8 (range 37–54 years).All women had an endometrial biopsy that showed no evidence of hyperplasia, all had negative cervical cytology and a uterine size less than 12 cm.
Results: the treatment was completed in all 60 women with general anesthesia in spontaneous breath. The median operative time was 18.9 minutes (range 15–30 minutes). There were no intraoperative complications. In the HTA group the overall success of the procedure at 12 months was 90% and 89.6% at 24 months. The treatment failed in 4 on 30 patients with coagulation and hearth diseases and supracervical hysterectomy was necessary only in one case for recurrent menorrhagia. In the TCRE group the overall success at 12 and 24 months was 93.3%.
Discussion: The significance of the differences between the two groups is not statistically important; however hydrothermablation is demonstrated more safe and simple procedure in patients who are at high surgical-anaesthesiologic risk (hearth and coagulation diseases, previous transplant etc.) for treating women with recurrent menorrhagia.

FC-56

Comparison of Theatre Time, Complication Rates and Short-term Outcomes for Hydrothermal Ablation, Microwave Endometrial Ablation and novasure Endometrial Ablation

Jane Allen, Andreas Huber, Helen Mcmillan, Kevin Phillips
Castle Hill Hospital, Hull, United Kingdom

Objective We currently use Hydrothermal ablation (HTA), Microwave endometrial ablation (MEA) and NovaSure endometrial ablation to treat dysfunctional uterine bleeding. The aim of our study was to compare the three methods for theatre time, complication rates and short term outcomes.
Design & Methods This retrospective observational study was performed on patients who underwent an endometrial ablative procedure alone in a UK teaching hospital between February 2005 and July 2006. The study had approval from the NHS Trust Audit Department. 73 patients in total were included in the study and information was collected from the patient's case notes and the theatre record books. 28 patients had HTA, 25 had MEA and 20 had NovaSure. Statistical analysis was performed using t test for comparison of time spent in theatre and Chi squared for analysis of satisfaction rates.
Results The mean length of time in theatre was 32 minutes for HTA (range 20–62 minutes), 25 minutes for MEA (range 7–48 minutes) and 26 minutes for NovaSure (range 12–57 minutes). Using t test the time difference between HTA and both MEA and NovaSure was statistically significant ($P<0.05$). 2 HTA procedures were abandoned because the saline did not heat; 1

MEA procedure was abandoned due to machine failure and 1 NovaSure procedure was abandoned because the pre-procedure gas test could not be obtained due to a patulous cervical os. No perforations, episodes of haemorrhage or visceral injuries occurred. 4 patients developed endometritis postoperatively, all of these patients had undergone a MEA procedure, and all were treated successfully with oral antibiotics. At 4 months follow up 24/28 (85.7%) of women whom had HTA were satisfied and discharged compared to 22/25 (88%) of women whom had MEA and 19/20 (95%) of women whom had NovaSure. Of the 8 women whom were not satisfied at follow up, 6 patients went on to have a hysterectomy, 4 (14.3%) of HTA group; 1 (4%) of the MEA group and 1 (5%) of the NovaSure group. The remaining 2 patients had a hysteroscopy and adhesiolysis performed (8% of the MEA group).

Conclusions Time spent in theatre was significantly lower for both MEA and NovaSure when compared to HTA. The overall rate of device failure and complications was low. Our results indicate that NovaSure has the highest satisfaction rate although this was not statistically significant.

TOPIC 8: ENDOMETRIOSIS

FC-58

Pre-Surgical Diagnosis Of Posterior Deep Infiltrating Endometriosis (DIE)

Francesca Milano, Stefano Angioni, Francesca Ariu, Valerio Mais, Gian Benedetto Melis

Division of Gynecology, Obstetrics and Pathophysiology of Human Reproduction, Department of Surgery, Maternal-Fetal Medicine, and Imaging, University of Cagliari, Cagliari, Italy

STUDY OBJECTIVE: To evaluate the diagnostic performance (accuracy, sensitivity, specificity, positive and negative predictive value) of clinical symptoms, bimanual pelvic examination, serum Ca125, transvaginal sonography (TVS) and magnetic resonance imaging (MRI) in the detection of retrocervical and/or rectovaginal endometriosis.

PATIENTS: Two hundred fifty five patients with surgical diagnosis of endometriosis.

INTERVENTIONS: The patients with surgical diagnosis of endometriosis were divided in 2 group on the basis of the surgical staging: with or without deep infiltrating endometriosis of the cul-de-sac and of the rectovaginal septum. Before surgery, all patients filled in a pain questionnaire, underwent bimanual vaginal examination, serum Ca125 evaluation, TVS and MRI. Their diagnostic performance (accuracy, sensitivity, specificity, positive and negative predictive value) for predicting retrocervical and/or rectovaginal endometriosis were assessed. Multiple logistic regression analysis to select the best combination of these parameters for predicting posterior DIE were calculated.

RESULTS: Surgical diagnosis was posterior DIE in 106 pts. (41,5%) and pelvic endometriosis without DIE (PE) in 149 pts. (58,5%). Chronic pain was present in 97% pts with DIE vs. 41% with PE, deep dyspareunia in 73% vs. 12% and intestinal symptoms 53% vs 9% respectively. The accuracy, sensitivity, and specificity of dyspareunia and intestinal symptoms in the pre-surgical identification of DIE were 79% and 65%, 77% and 53%, 81%and 82% when considered separately. Bimanual pelvic examination showed a high accuracy, sensitivity and specificity in the diagnosis of DIE.

CONCLUSIONS: A thorough evaluation of symptoms and signs consents the diagnosis of posterior DIE in the majority of cases before surgery.

FC-59

Laparoscopic findings and deep endometriosis mapping with "water filled balloon" sonovaginography new technique

Fiorenzo De Cicco[1], Piero Carfagna[1], Carlo De Cicco[2], Anastasia Ussia[1], Philippe Koninckx[2], Alessandro Caruso[1]

[1]*Università Cattolica del Sacro Cuore di Roma, Roma, Italy,* [2]*Katholieke Universiteit Leuven, Leuven, Belgium*

At the present the diagnostic tools for the diagnosis of deep endometriosis are transvaginal sonography, endorectal sonography and MRI. The low sensitivity and specificity suggest that these technique are not a reliable methods for the evaluation of the recto-vaginal endometriosis. Limits in diagnostics lead to the need of more sensitive tools in order to provide a better detection and characterization of deep pelvic endometriotic lesions. This is an essential step in planning the optimal surgical procedure.

OBJECTIVES. Our end point is to estabilish if the "Water Filled Balloon® vaginal sonography" technique is effective in detecting the deep endometriotic lesions and to determine his accuracy related to laparoscopic findings.

METHODS Water Filled Balloon® sonography consists in endovaginal sonography with introduction of a special balloon in the vagina, filled up with 60–120cc of saline. The solution in the balloon generates an acoustic window between the probe and the surrounding structures near the vagina.

RESULTS Patients (76) with evidence of deep endometriosis underwent transvaginal sonography, Water Filled Balloon® vaginal sonography and operative laparoscopy. At transvaginal sonography the 65.8% of patients shown a deep localization; in 34.2% no clear evidence of deep endometriosis was found. With water filled balloon® vaginal sonography technique all the patients shown a deep localization of endometriosis and dimensions of nodules were calculated. Laparoscopic finding shown a deep localization of endometriosis in all patients. The results shown high sensitivity (100%) and specificity (100%) of the "Water Filled Balloon® vaginal sonography" related to the laparoscopy findings. The mean volume of nodules excised by laparoscopy was 2700 mm^3 vs a mean volume of 2200 mm3 calculated at sonovaginography (ns). The mean volume of nodules calculated at vaginal sonography was 1000 mm^3 ($p<0.03$).

CONCLUSIONS Water Filled Balloon®, gives detailed informations about localization, extension and infiltration of endometriotic

lesions. Furthermore it allows a more accurate evaluation of the endometriotic nodule's volume. These are essential steps in planning the optimal surgery procedure and in the follow up.

FC-60

Endorectal ultrasound accuracy in the diagnosis of rectal endometriosis infiltration depth

Horace Roman, Khaled Kouteich, Alexis Gromez, Patrick Hochain, Benoit Resch, Jean Jacques Tuech, Jean Christophe Sabourin, Loic Marpeau
University Hospital Rouen, Rouen, France

Objective: To evaluate the accuracy of endorectal ultrasound examination to ascertain the deepest rectal layer involved in rectal endometriosis.
Methods: Retrospective study including consecutive patients who underwent rectal resection during a period of 22 months. The results of endorectal examination were compared with histological findings. The agreement was evaluated using the coefficients of concordance Kappa and weighted Kappa.
Results: Sixteen women were included in the study. Rectal resection was segmental in 14 cases and limited in 2 cases. This agreement between two examinations was considered good in 9 cases (56%). In 6 cases the endorectal ultrasound in fact overestimated the depth of infiltration. The coefficients of concordance Kappa (95%CI) and weighted Kappa (95%CI) were respectively 0.17 (0–0.34) and 0.22 (0.04–0.4), corresponding respectively to poor concordance between the endorectal ultrasonography and histological examination.
Conclusion: Accuracy in the prediction of rectal layer involvement in endorectal ultrasonography appears to be limited. This information should not be considered sufficient when selecting the type of rectal resection procedure.

FC-61

Management of deep endometriosis

E. Spiller, M. Bonora, C. Saccardi, S. Fantinato, E. Cosmi, P. Litta
Department of Gynecological Science and Human Reproduction, Padua, Italy

Objective: to evaluate long-term results in patients who received personalized surgical management for rectovaginal endometriosis.
Design & Methods: from January 2004 to April 2006 in the Department of Gynecological Science and Human Reproduction of Padua 54 women underwent surgery because of recto-vaginal endometriosis. Before surgery each patient underwent clinical examination, transvaginal ultrasonography, sonovaginography and pelvic magnetic resonance imaging. We analyzed intra and postoperative complications, rates of pain and clinical recurrence, pregnancy rate. Dysmenorrhoea, dyspareunia, dyschezia and chronic pain were measured using a 4-point ranked ordinal scale administrated before and after surgery. Quality of life was measured using a preoperative and postoperative questionnaire. The follow-up period was every 6 months (maximum 36 months).
Results: in 31 (57,4%) women it was performed a complete excision of rectovaginal nodular tissue (13 laparoscopic nodulectomies without vaginal wall excision, 11 with vaginal wall excision, 4 with bowel resection, 3 laparotomic nodulectomies with bowel resection); 15 (27,8%) women underwent laparoscopic viscerolisis for severe adherence pelvic syndrome; 8 (14,8%) women underwent only laparoscopic ovarian endometrioma asportation. There were no significant intra and postoperative complications. Symptoms reduction was obtained for all symptoms related to cul-de-sac disease, particularly for patients with severe or debilitating preoperative symptoms. There has been no recurrence of symptomatic rectovaginal endometriosis during the follow-up. Of 18 women who wished to conceive, only 7 (38,9%) became pregnant.
Conclusions: the results show that only a personalized and multidisciplinary surgery can achieve a high degree of success in symptoms improvement and that this kind of surgery should be proposed only to women with a low quality of life. Moreover in most women pregnancy rate is a factor independent of the type of rectovaginal lesion.

FC-62

Laparoscopic management of bowel perforation following CO2 laser excision of rectovaginal endometriosis

Carlo De Cicco, Maria Lorena Ret Davalos, Jasper Verguts, Andrè D'Hoore, Philippe Koninckx
[1]Katholieke Universiteit Leuven, Leuven, Belgium, [2]Università Cattolica del Sacro Cuore di Roma, Roma, Italy

Background : Complete discoid resection of severe rectovaginal or sigmoid endometriosis requires a muscularis or a partial wall resection when the lesion is invading the wall. This surgery is associated with some 5% late perforations between day 1 and 5, similar to the reported 5% leakage after bowel resection and anastomosis. A late perforation can be treated conservatively by laparoscopy if diagnosed within 24 hours.
If a late perforation, however, is not diagnosed and treated within 24 hours it is unclear whether a conservative treatment still can be performed, or whether a protective colostomy is to be preferred. Whatever treatment option is chosen, a repeat lavage is required.
Case reports : We report 2 cases of bowel perforation diagnosed between 24 and 48 hours after the presumed perforation with 4 quadrants peritonitis. Both had at the level of the rectum a tear of 1 cm which was sutured laparoscopically in 2 layers. This conservative treatment was followed by extensive rinsing with 8 to 10 liters of saline.
Following this intervention, after 1, 2 and 4 days during a repeat laparoscopy a repeat lavage was performed. The first patient had 3 postoperative lavages notwithstanding a CRP drop below 100 after the second lavage. During the third lavage, the abdomen was impressively clean and the CRP levels continued to decrease and

normalised one week later. The second patient had a CRP drop to 60 on day 4, and the third lavage was cancelled. Two days later CRP started to rise again and remained high for two weeks, after which patient recovered uneventfully.
Discussion : These are to the best of our knowledge the first reports of conservative treatment of 4 quadrant peritonitis after bowel leakage for more than 24 hours. Although two case reports only, they are illustrative for the management of late perforations following endometriosis surgery, demonstrating feasibility of conservative treatment without colostomy
Conclusions: Conservative treatment of bowel perforation for slightly over 24 hours with 4 quadrants peritonitis seems feasible in a patient with full bowel preparation previously. Repeated lavage which obviously is required should be performed at least 3 times notwithstanding a steep CRP drop before the third lavage.

FC-63

Extensive abdominal lavage is necessary following bowel perforation during surgery for deep endometriosis

Carlo De Cicco, Andre D'Hoore, Philippe Koninckx
[1]*Katholieke Universiteit Leuven, Leuven, Belgium,* [2]*Università Cattolica del Sacro Cuore di Roma, Roma, Italy*

Deep infiltrating endometriosis involving the rectum or the sigmoid may require full thickness resection of the bowel wall with subsequent 2 layers suture.
Design: Prospective randomized study of 20 consecutive patients with full thickness resection and suturing. They received either rinsing with some 200 ml or extensive lavage with 8 liters of saline; following surgery patients received large spectrum antibiotics and nil by mouth for 7 days, with a daily CRP.
Treatment: Lavage started in the upper abdomen with the patient in antitrendelenburg. Some 3 to 4 liters are generally required to have clear fluid. Subsequent lavage of the lower abdomen was performed with the patient horizontally.
Results: CRP was lower (P=0.01) in the lavage group on day 1 to 7 following surgery and had decreased below 15 mg/L on day 5 whereas in the non lavage group after 7 days is still around 35.
Interestingly in non lavage group a bowel perforation occurred, that was laparoscopically managed with no further complications.
Conclusions: Irrigation and lavage of the abdominal cavity after full thickness resection of the bowel wall lead to lower CRP values (P=0.01) with faster normalization.
If the lower incidence of bowel perforation could be substantiated this would become another major advantage.

FC-64

Laparoscopic surgical treatment of urinary tract endometriosis

Liliana Mereu, Paola Pomini, Stefano Landi, Andrea Fiaccavento, Fabrizio Barbieri, Luca Minelli
Ospedale Sacro Cuore, Negrar, Verona, Italy

INTRODUCTION: Endometriosis is a biologically benign albeit aggressive pathology marked by high local recurrence. Ureteral and bladder involvement accounts for 1–5% of endometriotic patients. We present our experience in clinical and surgical management of urologic endometriosis.
METHODS: From January 2003 to December 2006, we enrolled in a prospective study database all patients who underwent laparoscopic surgery for a clinical suspicion of deep infiltrating endometriosis with documented moderate-to-severe hydronephrosis and/or bladder wall localization. Preoperative data (clinical symptoms, double contrast barium enema, abdominal-pelvic ultrasound, cistoscopy, IVP), intra-operative data (surgical findings, surgical procedures), and postoperative data (histological results, complications, follow up) were collected.
RESULTS: One-hundred-two patients with urological endometriosis (32 with bladder involvement, 59 with moderate or severe hydronephrosis and 11 with both ureteral and bladder involvement) were enrolled. Urinary symptoms were present in the majority of women with bladder endometriosis whereas ureteral involvement had non specific or silent symptomatology.
Twenty five (24,5%) patients underwent ureteric resections with end-to-end anastomosis, 34 (33,3%) ureterolyses, 40 (39,2%) bladder resection, 2 (1,9%) nefrectomy and 3 (2,9%) psoas bladder reimplantations.
CONCLUSION: Severe infiltring endometriosis of ureter can present without specific symptoms, preoperative ultrasound evaluation of ureters should be performed in every patients with a suspect of deep endometriosis while cystoscopy in patients with urinary symptoms. Laparoscopic approach seems an adequate surgical option for the majority of patients with urinary tract endometriosis.

FC-65

Conservative management of ureteral lesions following laparoscopic gynaecological surgery

Carlo De Cicco, Ben Van Cleynenbreugel, Anastasia Ussia, Arnaud Wattiez, Enda Mc Veigh, Philippe Koninckx
[1]*Katholieke Universiteit Leuven, Leuven, Belgium,* [2] *Università Cattolica del Sacro Cuore di Roma, Roma, Italy*

INTRODUCTION: Iatrogenic ureteral injuries are a feared complication of abdominal surgery and a frequent cause of medico-legal claims. These injuries are particulary frequent in gynaecology due to the proximity of female pelvic structures to the ureter.
METHODS: We analyzed our database for all the ureter injuries treated by laparoscopy performed during the past ten years. Files were reviewed and uretere lesions were classified for type, localization and the moment of recognition, on the management, the outcome and eventual further procedures.
RESULTS: In 30 women 32 lesions have been treated between 1998 and 2007. In 18 patients the injury was discovered and managed intraoperatively, while in 12 patients the lesion was recognised after surgery. Obstructive lesions (n=3) were treated by stenting only, with

no further complications. In case of laceration (n=17) suture over a stent was performed, with uneventful recovery in all except 1. Transections (n=6) were treated by end-to end anastomosis, with no further complications. All procedures were performed by laparoscopy, with only 2 patients requiring reimplantation..
DISCUSSION: Traditionally ureteral lesions are managed by reimplantation with eventually a Psoas Hitch or Boari Flap bladder elongation. This treatment is invasive for the patients and felt as an important complication. In our study we demonstrate that conservative management of ureteral lesions is feasible with optimal outcome, thus probably with less medico-legal problems.
CONCLUSIONS: Evidence is emerging that in case of ureteral injuries following laparoscopic procedures, a conservative treatment performed by laparoscopy should become the gold standard.

FC-66

Laparoscopic dissection of pelvic nerves in patients with deep infiltrating endometriosis

Eugenio Volpi, Annamaria Ferrero, Piero Sismondi
Department of Gynecologic Oncology University of Torino - Mauriziano Hospital, Torino, Italy

Introduction: Nerve sparing is suggested for cancer surgery but no experience is available for deep endometriosis. Aim of this study is the laparoscopic identification of the pelvic nerves in the posterior pelvis.
Materials and methods: 62 patients operated for deep endometriosis were considered. During surgery and on the video tapes of the procedures, we evaluated single or double sided resection of the uterosacral ligaments and other structures, visualisation of the inferior hypogastric and the splanchnic nerves. The most important single objective criteria for resection of the nerves was self catheterization after surgery.
Results: Visualisation of the inferior hypogastric nerves was possible in 59 out of 62 patients (95,1%). Thirty-nine out of the 62 patients had at least one inferior hypogastric nerve resected (62.9,%). In 20 patients resection of the uterosacral ligaments was bilateral (37.1%) and in 17 of these the nerves were resected. Postoperatively, the median residual urine volume after the first spontaneous voiding was 50 ml (range 20–400). Thirty-six out of 39 patients (92.3%) with resection of the nerves had urinary retention during hospital stay. Ten patient had self-catheterization at discharge. The difference in urinary residuum after first voiding between patients undergoing self catheterization and patients released without the catheter was significant ($p<0.01$). The median time to resume the voiding function in the patients having self catheterization was 18 days (9–45 days).
Discussion: Nerve visualization is possible by means of laparoscopic surgery for deep endometriosis in a high rate of patients. Careful technique is necessary, but laparoscopic approach may help. Even single sided radical dissection can induce important urinary retention.