

Videos

Techniques and Instrumentations in Laparoscopy

V1_01

Laparoscopic myomectomy using single ancillary trochar

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Objectives: Laparoscopic myomectomy is a very recent advance in the field of gynaecological surgery. It requires proper patient selection, meticulous technique and experience in laparoscopic suturing skills.

Design and methods: 35 years old secondarily infertile patient had a 7 cm intramural myom. We planned to perform the myomectomy laparoscopically and remove the myom via vaginal route. a ten mm trochar was placed through the umbilicus and a five mm trochar was placed through suprapubic region. About 7 cm sized intramural myom was seen in anterior uterine wall. The myom capsule was opened and entered to the cleavage the myom was extirpated and released to the abdominal cavity. Then we repaired the uterine wall using number 1 catgut sutures. We put vaginal speculum and removed the myom intact through posterior colpotomy.

Results: No intraoperative or postoperative complication was encountered—the patient was discharged on the 2nd postoperative day and was very satisfied with the operation scar.

Conclusion: Myomectomy can be done laparoscopically even for large myoms. Hysteroscopic removal of IUCD with lost string in a pregnant woman Objectives: to determine the feasibility of removing IUDs hysteroscopically during 1st trimester of pregnancy and the subsequent improvement in pregnancy outcome.

V1_02

Temporary bilateral ovarian suspension (BOS) to facilitate laparoscopic pelvic side wall dissection

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Background: We aim to demonstrate through a video presentation a new technique of bilateral temporary ovarian suspension during laparoscopic surgery to facilitate pelvic side wall dissection. Pelvic side wall dissection is often required when treating endometriosis laparoscopically. Access to the side walls is usually compromised by the overlying adnexa. We describe a technique that facilitates pelvic side wall access by temporarily displacing both ovaries simultaneously anterior to the uterus using a single suture.

Technique: After ovariolysis if required, a 2/0 polyglactin suture on a curved needle is passed through each ovary and tied extracorporeally using a Roeder knot. The suture is tightened to approximate the ovaries over the anterior surface of the uterus, which is then anteverted to lift the adnexa out of the pelvis. Pelvic side wall dissection then can be carried out unimpeded. The ovaries are replaced to their normal position at the end of surgery by simply cutting the suture.

Results: We have successfully used this technique in 30 women undergoing laparoscopic surgery for endometriosis. We had a clear view of the pelvic side walls, and surgery was made considerably more efficient. We did note that ovarian suspension alters the course of the pelvic ureters, and this must be recognized. Apart from occasional slight oozing from the puncture sites, bilateral ovarian suspension was not associated with the need to repair the ovaries, and we had no problems related to the suspension procedure.

Conclusions: Temporary bilateral ovarian suspension can easily be achieved using the technique we describe. It makes pelvic side wall surgery easier without the need for additional instrumentation.

V1_03

New multifunctional grasper for gynaecological procedures

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Introduction: Major advances in laparoscopic surgery come from understanding the advantages and drawbacks of this technique. Instruments in laparoscopy are crucial. Each instrument contributes to the progress of laparoscopy by adding a new function. However, switching between instruments during laparoscopic procedures leads to loss of time. Instruments with many functions would resolve this issue. We present a short video showing the use of a new multifunction grasper in gynaecologic laparoscopic procedures.

Methods: A new grasper (Robby type ®, Karl Storz ®, Germany) having three functions ie, grasping, dissection and bipolar coagulation is used to perform: 1—Cystectomy for endometrioma: this intervention requires many instruments' switching. We used the above mentioned grasper with scissors, to perform cystectomy. Cyst's wall stripping is done with a good hemostasis. 2—Uterosacral endometriotic nodule excision: dissecting and haemostatic features of this grasper are very useful in endometriotic nodule excision while using it to grasp the uterosacral ligament. 3—Dissection of rectovaginal and vesicovaginal space during laparoscopic sacral colpopexy: Bleeding control and dissection of spaces during sacral colpopexy is easy to achieve.

Results: A study comparing the use of classical bipolar grasper, toothed grasper and scissors to the use of the new bipolar grasper in ovarian cystectomies is ongoing. Primary results show a reduced operative time and reduced blood loss.

Discussion: Combining many functions in one instrument seems to reduce operative time and blood loss. Reusable multifunction instruments would also reduce surgical procedures' cost.

V1_04

Direct entry in laparoscopy

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Aim: To demonstrate our technique of performing direct entry

Introduction: Direct entry is the least popular entry technique in laparoscopy in spite of there being no evidence against its safety. In our experience direct entry is not only a safe procedure but a much faster technique than veress entry and with much fewer failed entries. **Method:** Patient is placed in supine position under general anaesthesia without any tilt. An intraumbilical incision is made. A standard reusable metallic trocar is used with the index finger held firmly about three centimetres away from the tip of the trocar. The trocar is first placed inside the incision until the rectus sheath is reached. The surgeon and the assistant lift the abdominal wall of the patient from either side a few centimetres below the umbilicus. The trocar is then directed at right angles to the umbilicus and with a twisting motion it is pushed into the abdominal wall through the rectus sheath. Once the rectus sheath is perforated, the direction of the trocar is changed to 45° towards the pelvis to perforate the peritoneum. Once the trocar is felt to be in place, the scope is introduced to check the position and only after this is confirmed, insufflation of CO₂ is started. The entire procedure takes less than two minutes to perform.

Conclusion: In our experience this is a safe procedure which is faster and with much fewer failed entries than veress entry. We perform this technique only on patients with no previous abdominal surgeries. We do not perform this techniques in patients who have had previous laparotomies or laparoscopies.

V1_05

Laparoscopic removal of ovarian cysts using single ancillary trocar

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Objective: To evaluate laparoscopic extracorporeal approach to benign ovarian cysts using single ancillary trocar.

Design and methods: 274 patients with an initial diagnosis of benign ovarian cysts were treated using this technique. A primary 10 mm trocar was inserted, a second incision was done on the side of the cystic lesion and an ancillary 5 mm sized trocar was introduced through the incision. The cystic content was aspirated by a needle inserted from the ancillary trocar, the capsule was held by an endograsper inserted through the same trocar. Capsule was extracted out of the abdomen; simultaneously 5 mm trocar and endograsper were both taken out of the abdomen. The capsule was detached completely. haemostasis was done then the ovary was released.

Results: Mean duration of the operation was found to be 20±5 minutes. The pathologies of the cysts were simple cyst in 197 cases, endometrioma in 77 cases No complication was detected.

Conclusion: This technique is not an open laparoscopy with a considerable short duration of the operation. We were assured that complete excision of cystic capsule was performed. haemostasis was achieved out of the abdomen using 2/0 chromic catgut sutures.

V1_06

Laparoscopic excision of a suspicious cervico-vaginal fibroid, using a “non-grasp” technique

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Objective: To present a “non-grasp” technique of laparoscopic myomectomy in a patient with a suspicious large cervico-vaginal fibroid.

Materials and methods: A 32 years-old nulliparous patient presented with a rapidly growing 9.5 cm tumor developing below the uterosacral ligaments' junction and causing progressively deteriorating constipation. Ultrasonographically, the tumor showed increased vascularity and was characterized as suspicious for malignant change. The patient was adamant to retain her uterus “at all costs”, and was managed with laparoscopic excision.

Results: A “non-grasp” technique of myomectomy was practiced, and the fibroid was successfully enucleated using a rectal finger as a lever to assist in creating the appropriate surgical planes. To avoid intraperitoneal morecellation, the tumor was placed in a sterile self-modified urine collection bag which was exteriorized through a slightly enlarged suprapubic incision and the fibroid was morcellated into the bag. Tumor histology was negative for malignancy.

Conclusions: This is a feasible and oncologically safe procedure for cases with suspicious fibroids where uterine preservation remains a priority.

V1_07

Laparoscopic transection of fixation arms of Total Prolift in severe dyspareunia

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Transvaginal mesh procedures for pelvic organ prolapse have gained popularity among gynecologists and urologists. This technique is effective and causes an acceptable number of adverse events. Some studies, however, have shown fairly high rates of de novo dyspareunia, including severe dyspareunia.

This video demonstrates laparoscopic revision/visualization of all 6 fixation arms of the Total Prolift and transection of 3 of them.

A 33-year-old Caucasian woman (1 vaginal delivery, 1 caesarean section) presented with a history of Total Prolift with uterine preservation in February 2008 and further laparoscopically assisted vaginal hysterectomy (LAVH) for uterine descent 4 months later. After this procedure, she developed severe deep dyspareunia and pain after standing and sitting for long periods, with a full bladder, and on passing stool.

Vaginal resection of the painful band of the mesh in the vaginal apex was performed, to no avail (December 2008). Her complaints remained the same. Vaginal examination revealed very good morphology, no descent, and an appropriate vaginal length. There was significant pain on pushing toward the vaginal apex and on palpation of both fixation arms of the posterior mesh and the right posterior arm of the anterior mesh.

A standard laparoscopy was performed—optical port in the umbilicus, left and right manipulation port just lateral to the rectus abdominis muscle to reach the sidewall of the lesser pelvis, and 1 port in the midline 5 cm below the umbilicus.

The peritoneum along the vesicumbilical fascia was incised from the pubic bone backward toward the level of the vaginal apex. The paravesical space was opened, and the fixation arms of the anterior mesh were identified. With backward preparation along the original arcus tendineus fasciae pelvis, the ischial spine was reached easily. Due to the preexisting paravaginal defect, the sacrospinous ligament was visualized instantly, and the fixation arm of the posterior mesh was located. On the right side, we transected the posterior arm of the anterior mesh and the arm of the posterior mesh (they were significantly painful during the preoperative vaginal examination). On the left side, we transected the arm of the posterior mesh only. The peritoneum was closed with running absorbable sutures.

The video shows the laparoscopic approach to the true pelvic floor through avascular planes. This technique can be useful for future procedures, because the number of women with dyspareunia and pain syndrome after vaginal meshes will grow. The advantage over the vaginal approach is its capacity to solve concomitant adhesions that also cause pain. Additionally, the repeated vaginal approach leads to progressive scarring of the vaginal wall. Finally, laparoscopy has the capacity to solve potential descents after transection of the arms with sacropexy or paravaginal defect repair.

V1_08

Laparoscopic Hysterectomy in a Patient With a Big Intra-Ligamentar Fibroid Using Ligasure V Max

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Objective: To present a patient with a large intra-ligamentar fibroid who had underwent laparoscopic hysterectomy using Ligasure V max.

Method: A 55-yr old postmenopausal woman with a big uterin fibroid underwent a four—puncture site laparoscopic hysterectomy using Ligasure V max. All stages including the uterine arteries were performed laparoscopically whereas cardinal and uterosacral ligaments were dissected vaginally using Ligasure Atlas. Both uterine arteries were sealed at the junction of uterus. The vaginal apex was sutured vaginally using a continuous 0 vicrly.

Results: The patient had a previous laparoscopic cholecystectomy and two previous laparotomies with low transverse incisions. The mean operation time was 180 minutes; of this laparoscopic and vaginal sections were 100 and 80 minutes, respectively. Weight of the removed uterus was 400 grams. The mean intraoperative blood loss was 500 ml. Preoperative Hb was 13.3 gr /dl whereas postoperative value was 8.9 gr / dl. The patient was discharged on the first postoperative day without any complications.

Conclusion: Laparoscopic hysterectomy is a feasible and safe method in removing a uterus with a large intra-ligamentar fibroid.

V1_09

Creation of a neovagina by Davydov's laparoscopic modified technique in patients with Rokitansky syndrome

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Objective: The Mayer-Rokitansky-Kuster-Hauser syndrome is a malformation complex characterized by absence of the vagina and uterus. Numerous surgical and non-surgical procedures have been described, all of which aim at creating a neovagina of adequate size and physiology in order to permit normal sexual intercourse.

The purpose of this paper is to assess anatomical and functional results following the laparoscopic Davydov procedure for the creation of a neovagina in Rokitansky syndrome.

Study design: The modified laparoscopic Davydov technique involves a laparoscopic step, followed by a perineal approach (video presentation). Thirty patients with Rokitansky syndrome underwent the modified technique from June 2005 to August 2008. All laparoscopic operations were performed by a unique surgeon. Mean follow-up lasted 30 months (6–44), and included clinical examinations, evaluation of the quality of sexual intercourse, while vaginoscopy, Schiller's test and neovaginal biopsies were performed after 6 and 12 months. Functional results were assessed by using Rosen's Female Sexual Function Index and were compared with age-matched normal controls.

Results: No perioperative complications occurred. At 6 months, anatomic success was achieved in 97% (n=29), while functional success and optimal results at the Female Sexual Function Index questionnaire were obtained in 96% of patients. Vaginoscopy and biopsies showed a normal iodine-positive vaginal epithelium.

Conclusions: The modified laparoscopic Davydov technique seems to represent a safe and effective solution for the treatment of vaginal agenesis in patients with Rokitansky syndrome.

V1_10

Surgery of the pelvic organs prolapse: correction of posterior compartment prolapse (apical and posterior prolapse repair system)

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Objective: To repair the vault prolapsed with the mesh procedure to reinforce soft tissues where weakness exists, as sacrouterins ligaments and rectovaginal fascia.

Material and method: Material is a new kit of AMSTM. The ELEVATE APICAL/POSTERIOR is used for correction apical/posterior pelvic organs prolapse.

The Elevate used in this surgery is a synthetic mesh (monofilament polypropylene). The kit is composed for:

- Needle
- Fixating arms
- Eyelet applicator
- Adjustment tool
- Graft

Method:

1. Dissect down to rectovaginal fascia
2. Utilize blunt dissection to maintain plane
3. Dissect towards ischial spine and palpate
4. Sweep medially, 2–3 cms towards sacrum
5. Perform for right and left sides

Results: (Description of the procedure)

- Longitudinal Incision posterior vaginal wall
- To reference the edges of the incision
- Dissection of pararectal spaces
- The present videocommunication contains the correction enterocele. With dissection and resection the hernia of pouch of Douglas. It is necessary to close of peritoneum because the intestinal handle must not contact with meshes in no way.

- Dissection towards ischial spine both sides. (As You can see in the video)
- 2 or more sutures points at vaginal apex for fixed the graft
- Loading fixating arms (correct form)
- Palpating self fixating tip placement
- Reproduction the different anatomical pelvic floor structures
- Sweep across the sacrospinous ligament medially, 2–3 cms towards sacrum
- Palpate the ischial spine and fixate the arms.
- Traction to verify
- Repeat the same in the opposite side.
- Trim proximal end of mesh
- Graft deployment
- Adjustment tool is used now for application mesh
- Use the sutures previously placed at the apex for fixate graft
- Then locking eyelet deployment (to verify locking eyelet rest against graft)
- Trimming fixation arms
- Sutures for fixation the end of graft to perineal body
- Close vaginal incision with running stitch
- The mesh rest tension-free.
- Vaginal packing is necessary for the first few hours. All trough the procedure, the Foley vesical catheter is in place.
- Digital rectal examination is done. This is important to confirm the integrity of the rectum.

V1_11

Laparoscopic management of urinary tract injuries

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Introduction: Urinary tract injuries are one of the most frequent complications during total laparoscopic hysterectomy. When it occurs, the case is generally referred to an urologist with the chance that they may recommend a conversion to laparotomy. If it could be managed laparoscopically the repair would follow the minimally invasive theme of the initial procedure.

Procedure: Since 1999 we have performed 2053 cases of TLH for benign pathology. 5 of these cases experienced intraoperative urinary tract injuries. All of the cases were managed successfully totally laparoscopically in the same surgical session. Case 1 underwent end-to-end anastomosis of the pelvic ureter due to injury at the IFP ligament. Each cut end was spatulated to prevent stenosis of the anastomotic site. Cases 2 and 3 underwent ureteral reimplantation due to injuries at the cardinal ligament and at the anterior leaf of the vesicouterine ligament respectively. Anti-reflux extravesical ureteroneocystostomy was performed. After incising the detrusor muscle of the bladder, the bladder mucosa is exposed. The caudal end of the mucosa is opened and the caudal end of the transected ureter is anastomosed to the mucosa after fixation with anchor suture. The detrusor muscle is reapproximated over the ureter and bladder mucosa so as to make an anti-reflux mechanism. Case 4 required the Boari flap and Psoas hitch techniques for extensive urinary tract thermal injury during hemostasis in which a new urinary duct was created using a bladder flap resulting in extending the bladder to deal with the shortness of the ureter. Case 5 experienced very severe bladder laceration during retrieval of the specimen through the vaginal. Two layer reapproximation was

required extensively. We developed a new technique for the laparoscopic placement of the double J stent without cystoscopy. It is helpful for management of urinary tract injury.

Results: All the cases could be repaired in the same operative session without conversion. No other complications occurred in these cases. No urinary tract stenosis or urinary tract fistula occurred. No cases required blood transfusion. The recovery is very quick.

Discussion: The avoidance of complications is of course the most important goal in all surgery but once injuries occur, the next best strategy is to be able to repair the injury in the same operative session and in the least invasive manner. Knowledge of reconstructive techniques and good establishment of hand-eye coordination as well as skills in very precise intracorporeal suturing are vital in these kinds of unpredictable scenarios.

V1_12

A new technique for vaginal construction surgery

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Objective: To describe a new surgical technique for vaginal construction in cases of vaginal agenesis. Often, a diagnosis of vaginal agenesis is not made until a girl enters puberty and fails to start her menstrual cycle. However, it can be diagnosed in infancy or early childhood when doctors test for other abnormalities sometimes associated with this condition.

Design and methods: 26 cases of vaginal agenesis or aplasia a relatively rare congenital disorder of the female reproductive system were treated by this surgical technique to construct vagina. A vertical incision is made in the blind vaginal end an finger introduced through the incision to create a space between rectum and the urinary bladder. The outer part of a 10 mm trochar is used in this technique. 1 no prolene is used to suture the vaginal ends. The sutures are passed through opening made previously on the end of the trochar from inner side to outer side and then re-entered inside the trochar from the other end that will remain inside the vagina. Sutures are fixed outside the trochar. Every other day more tension is applied to the sutures there by pulling the vaginal mucosa and the trochar inward. The trochar remained inside the vagina for about 15–20 days after which it was removed. At clinical examination, the new-vagina maintained both adequate length and width. Treatment for vaginal agenesis typically occurs in adolescence. Doctors first recommend dilation, where a vaginal agenesis canal is created by applying pressure with a small tube over a period of months. If this proves ineffective, a patient may undergo surgery to construct a vagina.

Conclusion: this new technique can be used safely in constructing vagina for vaginal agenesis cases and the results are very good.

V1_13

A Novel modification of two port laparoscopic surgery using flexible scope

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Objective: Embryonic natural orifice transumbilical endoscopic surgery (E-NOTES) inserts more than one port through the umbilicus. In the present study, E-NOTES combined with a flexible scope was applied to gynecologic surgery for further improvement.

Materials and methods: A 5-mm flexible scope (LTF-VP: Olympus, Tokyo Japan) that can bend freely to 100° from side

to side and up and down with the lever at the hand was used. A surgical incision was made in the umbilical region to enter the abdominal cavity using the closed approach. A 12-mm port was placed at the umbilical incision and the 5-mm flexible scope was inserted through the port. Another surgical port was then made in the left inguinal region to insert a 5-mm port while monitoring it with the flexible scope. The flexible scope was then inserted through the 5-mm inguinal port and another 5-mm port was inserted caudal to the 12-mm port while monitoring the umbilical region with the flexible scope. The 12-mm and 5-mm ports were inserted through the same umbilical incision so that they were positioned vertically. The surgeon stood on the left side of the patient to manipulate the 12-mm umbilical port with the right hand and the 5-mm inguinal port with the left hand. An assistant surgeon inserted the flexible scope through the 5-mm umbilical port and manipulated it with the left hand to secure the view during surgery by appropriately adjusting the angle of the flexible scope.

Results: Since 2nd March 2009, we have completed a total of 18 cases with this surgical technique, including two salpingectomy, three ovarian cystectomy, two total laparoscopic hysterectomy (TLH), two liner salpingostomy and four total laparoscopic myomectomy (TLM). Intra corporeal suturing was performed in all the cases except one, because a suture needle could be easily inserted through the 12-mm port.

Conclusions: The flexible scope and forceps did not hinder each other either inside or outside the body cavity. The use of the flexible scope allows the conventional rigid straight forceps to be used in almost the same manner as that with the conventional laparoscopic technique.

V1_14

Small Intestinal Submucosa (SIS) and its uses in gynecological surgery

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SIS is a biological extracellular matrix graft that acts as a bioscaffold, stimulating fibroblast activity and angiogenesis. Due to this characteristic, it has the capability of integration to actually become a part of the tissue in which it is placed.

The objective of this video is to show the possibilities for this graft material in gynecologic surgery.

It can be an option for fistula prevention on simultaneous rectal and vaginal endometriosis resection.

SIS may also be a valuable resource in situations of extensive vaginal resections due to endometriosis, where it can potentially prevent vaginal shortening and postoperative dyspareunia.

In urogynecology, SIS is associated with few complications, when used for pelvic organ prolapse reconstruction, and may be a safe alternative to the use of synthetic meshes, mainly in younger women. In this video, we show examples of successful use of SIS graft at all the above mentioned situations.

V1_15

Laparoscopic Myomectomy: Is There a Limit?

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The objective of this video is to show the technique for the laparoscopic resection of large uterine fibroids.

Images of successful resection of intramural, intraligamentar and transmural nodules, all larger than 10 cm in diameter are shown. Nowadays, with better instrumentation and the improvement of the laparoscopic surgical techniques, laparotomy for myomectomy is virtually becoming unnecessary, in the vast majority of the cases.

V1_16

Laparoscopic Resection of Infected Sacrocolpopexy Mesh

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We present a case of a 65 year old female who underwent a TAH, BSO, sacrocolpopexy and posterior repair at an outside institution. At the time of surgery she was noted to have deep vaginal ulcerations and complete procidentia. She presented to us almost 3 weeks later with fever, pain and an abscess along the right pelvic sidewall extending to the promontory on CT imaging. She was also found to have a large area of erosion in the posterior fornix. Due to these findings we decided to take her to the operating room for a laparoscopic exploration and resection of the infected sacrocolpopexy mesh. We found a significant pelvic abscess during the mesh resection and were able to remove the mesh completely. She later returned for a laparoscopic uterosacral ligament suspension, paravaginal repair, anterior repair and perineoplasty. The patient was not interested in additional mesh repair or an obliterative procedure. We conclude that a mesh should not be placed in patients with significant vaginal erosions and a pelvic abscess in the setting of a recent mesh placement likely requires complete mesh removal—this can be safely accomplished laparoscopically.

V1_17

Transumbilical Single-Port Laparoscopic Hysterectomy: Feasibility of the Technique

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Objective: Total laparoscopic hysterectomy has been shown to have clinical benefits in comparison to abdominal approach. Meanwhile, multiple puncture sites may increase trocar-associated complications, such as bleeding, hernias, wound infection and the cosmetic results are not always optimal. The umbilicus, an embryonic natural orifice, is an anatomical structure that may be used to perform advanced gynecological procedures, further reducing the morbidity associated with classical minimally invasive surgery.

Materials and methods: We present our preliminary experience of transumbilical single-port hysterectomy with a multichannel port (*SILS™ Port, Covidien Ltd, USA*).

From April 2009, we have used 5 porcine models at the laboratory to develop the technique of single port access for advanced procedures, including hysterectomy, partial cystectomy, pelvic lymphadenectomy, vessel ligation and intracorporeal suturing. After the successful experience in simulation surgery, we decided to transfer this technique to live human after obtaining institutional review board approval and informed patient consent.

A 46-year-old Caucasian nulligravid woman was referred to our endoscopy unit for excessive bleeding during menses with anemia. Gynecological examination showed a 6 cm posterior intramural myoma that distorted endometrial cavity without any pelvic organ prolapse. Endometrial cytology and endometrial biopsy showed no alterations.

A 2-cm intraumbilical incision was made in order to insert the SILS Port and establish the pneumoperitoneum. Three 5-mm operating ports were placed through the multichannel port, one with a 30° endoscopic optic, and two for the use of Roticulator™ articulating instruments (Covidien Ltd, USA) and standard laparoscopic devices. A uterine manipulator (Clermont-Ferrand, Karl Storz, Ge) was inserted vaginally. A total laparoscopic hysterectomy with BSO was performed mimicking our classical laparoscopic technique. Ligasure bipolar forceps was used in order to achieve hemostasis of uterine and ovarian vessels. Uterus was extracted vaginally after morcelation with cold knife and suturing of the vagina was achieved using laparoscopic intracorporeal knots.

Results: External crowding and clashing of instruments and proper triangulation were found to be the most difficult aspects of the learning curve for this procedure. The operating time was 125 minutes and the patient was discharged uneventfully 24 hours after surgery.

Conclusions: Single-port transumbilical hysterectomy is a promising approach that may decrease trocar-site-related complications, improve cosmetics and patient recovery, maintaining the ability to convert to standard laparoscopy if special difficulties arise.

V1_18

FreeHand—A new Robotic Laparoscopic Camera Controller

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FreeHand is a new laparoscopic camera controller system recently developed by ProSurgics in the UK. FreeHand is a mobile arm, attached to the side of the operating table, which holds the laparoscope and is operated by the surgeon using a headset which transmits signals to a sensor mounted on the video screen.

Advantages for the surgeon are:

1. Ability to operate without the need for an assistant.
2. Steady visualisation of the operating field.
3. Increased ability to teach trainees laparoscopic techniques without the need for a camera assistant.

There are also potential cost savings with reduced need for theatre assistants.

Initial experience with FreeHand shows that it is easy to learn to operate. It has been of great benefit in simple laparoscopic surgery for adnexal pathology, but more experience is required to realise its potential benefits for more advanced laparoscopic surgery.

V1_19

A “Goldfinger” for Laparoscopic Cerclage

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Objective: Since more than 40 years the technique of the trans-abdominal cervical cerclage (TCC) has been introduced in women with cervical insufficiency, who had experienced unsuccessful classical vaginal cerclage or the classical vaginal procedure was technically impossible due to a short (congenital or iatrogenic) cervix.

Material and methods: In our prospectively collected case series from May 2008 to July 2009 we performed 3 laparoscopic TCC in the 13th pregnancy week and 5 unrelated to pregnancy. In all cases we used an original device (Goldfinger, Endoscopic Dissector and Gastric

Band Retrieval System, Obtech Medical Sàrl, Switzerland) for the placement of the cerclage tape.

Results: All the procedures have been performed successfully without intra- or postoperative morbidity. The operation time was 110, 120 and 180 min in pregnant women and 90 to 105 min in interval timing. The hospital stay was 2 days in all cases. Before the demission a Doppler sonography control showed a normal uterine artery perfusion. The three pregnancies ended at term with elective C-section without cerclage-removing.

Conclusions: A well established laparoscopic technique could be a great contribute for the management of the cervical insufficiency in cases where a transabdominal cervicoisthmic cerclage is indicated. It seems to be a safe procedure with a fast postoperative recovery that offers a low morbidity and an effective treatment option.

V1_20

Haemostasis with surgical glue in laparoscopic surgery

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Introduction: Recently is use, in laparoscopic surgery, of haemostatic glues for control bleeding indicate in anatomical areas at high risk or thermal damage. Interesting appears the use of haemostatic glue in surgery of adnexa especially in the conservative treatment of the ovary. In particular, the enucleation of ovarian cyst, associated with bleeding and the thermal damage related to electrical coagulation, can impair the functionality of the ovary.

Case: Patient, female, 24 years old with bilateral Dermoid cysts of the ovaries. Video shows bilateral enucleation of ovarian cysts and application of haemostatic surgical glue on the ovary for control bleeding.

Conclusion: Use of haemostatic glue during surgery of the ovaries seems to be a good alternative to electrical devices in order to avoid thermal damage and preserve ovarian activity and fertility of the patients.

V1_21

Temporary Clipping of the Uterine Arteries (Bulldog) Improves Laparoscopic Myomectomy

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Introduction: Uterine myomas are common benign uterine tumours affecting women in their reproductive age. Laparoscopic myomectomy is an important treatment option for women who wish to preserve their fertility. The temporary uterine artery occlusion with bulldog clamps during laparoscopic myomectomy as a new operative method allows a minimal invasive operative approach.

Material & methods: In a prospectively performed case series temporary uterine artery clipping has been applied during laparoscopic myomectomy from 3/2009–7/2009. In our video presentation intra-operative sequences of this new technique will be presented.

Results: The average age in our 13 patients was 35.1 years (27–40 years) with an average body-mass-index of 22.5 kg/m². The median operating time and blood loss were 189 min (120–240 min) and 305 ml (100–1600 ml) respectively. The mean number of fibroids removed was 4 (1–10) with a mean fibroid weight of 204 g (50–336 g). A mean of 13.8 minutes were required to complete one temporary uterine artery occlusion by placing the bulldog clamp. No intraoperative or postoperative morbidity was registered.

Conclusion: Transient blocking of the uterine arteries is feasible and can be performed safely. It helps to control operative blood loss without affecting the postoperative uterine perfusion. The enhanced visualisation of the operative field allows precise minimal invasive tissue preparation hence reducing the risk of an accidental perforation of the uterine cavity.

V1_22

Clinical application of Transvaginal Natural Orifice Transluminal Endoscopic Surgery (NOTES) in Gynaecology

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Introduction: Natural Orifice Transluminal Endoscopic Surgery (NOTES) depicts an emerging field in laparoscopic surgery. It seems feasible that intraperitoneal surgery may be performed without skin incisions not only in surgery but also in gynaecologic operative therapy. NOTES offers the exciting potential to be less invasive than the traditional open surgical approach. Especially the no-scar approach is of great interest in young women where aesthetics is of prime importance.

Material and methods: In the presented videos the clinical implementation and intraoperative usage of transvaginal NOTES are shown. Flexible endoscopy using a gastroduodenoscope with 2 working channels (Fa. Storz, Tuttlingen) in female tubal ligation and diagnostic transvaginal procedures in infertile patients will be presented along with limits and potentially methods related complications.

Results: We could successfully proof feasibility and safety in transvaginal appendectomy, diagnostic and smaller therapeutic operative procedures in human clinical application.

Conclusion: NOTES procedures are a new and promising advancement of minimal invasive laparoscopic surgery with a large potential in the gynaecologic field. Beside aesthetic advantages and a continuing reduction of invasiveness large scale clinical application and technical progress will determine the future indications of this technique in gynaecology.

V1_23

Laparoscopic tubal reanastomosis of 12 cases: preliminary study

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Laparoscopy is increasingly being used for tubal reanastomosis for sterilization reversal. This report gives preliminary data about pregnancy outcome after laparoscopic tubal reanastomosis. Twelve patients with bilateral tubal ligation who underwent laparoscopic tubal reanastomosis were prospectively evaluated. Tubal sterilization was performed by Pomeroy technique in all patients during a cesarean section or laparotomy. Anastomosis was performed by 4 stitch technique. The mean age of patients was 34.6 years (range 29–38 years). The mean interval between sterilization and reversal was 6 years (range 1–13 years). The operating time ranged from 105 to 150 minutes with a mean of 130. Bilateral reversal was achieved in 10 patients. In 2 patients only one sided reversal could be performed because the tube was extremely short on the other side. Patients were discharged on the next day. Hysterosalpingograms showed patent fallopian tubes in 10 patients including one of the unilateral anastomosis. Overall pregnancy rate was 66.6% (8/12), intrauterine pregnancy rate was 58.3% (7/12) and ectopic pregnancy rate was 8.3% (1/12). Of the 7 intrauterine pregnancies 1 ended in abortion at

6 weeks of gestation. This preliminary study of laparoscopic tubal reanastomosis shows favorable results in terms of pregnancy rates when compared to microsurgery through laparotomy.

V1_24

Laparoscopy miomectomy: endovascular clamps technique

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We present a film of a myomectomy with laparoscopic boarding. The technique used for the decrease of the bleeding during surgery is the interruption of the blood flow with endovascular clamps in the uterine arteries.

V1_25

X Cone: Single Access Device for the Treatment of Benign Adnexal Pathology

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We report the first cases of single port endoscopic treatment of adnexal pathology using a single trocar with multiple channels. The access for optic and instruments is achieved through this new the *X-Cone device* (Storz.Tuttlingen Germany). The trocar is inserted through the umbilicus using a the classical open entry, as described by Hasson. A combination of standard laparoscopic new curved and flexible specific instruments (scissors, dissectors, forceps) were used. Five patients, affected by ovarian pathologies: 2 serous cysts, 1 dermoid cyst, 1 endometriotic cyst and 1 ovarian mioma, underwent bilateral salpingoophorectomy (4 patients) or enucleation of ovarian cysts (1 patient) in the Department of Obstetrics and Gynecology of the University of Cagliari, Italy. All Surgeries were performed by two experienced surgeons in endoscopy. No conversion to multi-access standard laparoscopic technique and no intraoperative and postoperative complications were observed. Mean operative time was 54 minutes. The closure of the 2 cm single port umbilical access consented a perfect reconstruction of the umbilicus. All patients were discharged on day 1 after surgery. In conclusion laparoendoscopic single-port approach for adnexal pathologies is feasible safe and effective, with good results in terms of aesthetic results, postoperative pain and patients satisfaction. The utilization of specific instruments with the standardization of the technique could influence the surgical ergonomics and the operating time.

Endometriosis: Diagnosis and Surgery

V2_01

Ablative technique of ovarian endometrioma using plasma energy warrants further evaluation

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Despite an accurate surgical technique, endometrioma cystectomy leads to ovarian tissue removal in the majority of cases. We evaluated an ablative cyst technique using plasma energy, by measuring the depth of

the vaporisation effect, through a short series of women undergoing surgical management of ovarian endometriomas. First, we opened the cyst and carried out endometrial epithelium and stroma vaporisation using plasma energy in coagulation mode at low setting, at a distance averaging 5 mm. Then, we performed surgical excision of the ovarian endometrioma. Histological examination showed that the depth of plasma vaporisation was always less than the width of the fibrosis surrounding endometrial epithelium, suggesting that endometrioma vaporisation using plasma energy may not be harmful to subjacent ovarian tissue. Therefore, we believe that endometrioma ablation using plasma energy warrants further evaluation as an alternative to cyst excision, in order to prevent postoperative ovarian tissue loss.

V2_02

Outcomes of Ureteral endometriosis Laparoscopic

Surgical treatment

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Introduction: Ureteral endometriosis is unfrequent. It is define by the presence of endometrial glands in the ureteric or preureteric tissue. The prevalence reported is less than 1% and usually confined to the lower one-third of the left ureter. This pathology generates a ureteral stenosis, with an extrinsic compression of the ureteral wall by the inflammatory response and fibrosis, or an intrinsic stenosis with the invasion of the uroepithelium and submucosal layer of the ureteral wall. We present a short video describing the technique of the laparoscopic segmental ureteral resection followed by the re-anastomosis.

Methods: A descriptive retrospective study was performed to describe the outcomes of the surgical procedures due to ureteral endometriosis during the period 2005 and 2009, at the Department of Obstetrics and Gynaecology, Hautepierre Hospital and Nouvelle Hôpital Civil in Strasbourg.

Results: A study evaluating the outcomes of the different surgical treatments for ureteral endometriosis is ongoing. Primary results show that ureteral re-anastomosis is a feasible laparoscopic procedure for intrinsic ureteral endometriosis.

Conclusion: Ureteral anastomosis a feasible is a feasible laparoscopic procedure. The following up of these patients is mandatory to confirm the good results.

V2_03

Laparoscopic Reconstructive Surgery for Deeply Infiltrating Endometriosis

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Introduction: Laparoscopic surgery for severe and extensive endometriosis is a one of the most technically demanding procedures. Sometimes reconstructive surgery is required after excision of a severely affected site due to endometriosis. To make extensive surgery for deep endometriosis less invasive while completely removing all deep and ectopic lesions, we introduced laparoscopic reconstructive techniques. We will present some such challenging procedures.

Procedure: From January–December 08, 11 patients had radical segmental resection with reconstruction for ureteral and /or rectal endometriosis. As the first step, correction of anatomical distortion and delineation of the anatomical structures was required. For urinary tract reconstruction, anti-reflux ureteroneosystostomy, and for rectal reconstruction a vaginally assisted double-stapling technique was employed. Technique1. Laparoscopic transvesical anti-reflux reim-

plantation of the ureter into the bladder was achieved using intracorporeal technique after extensive adhesiolysis and segmental resection of the lower pelvic ureter. Technique 2. A vaginally assisted laparoscopic low anterior resection of the rectum after hysterectomy. The rectum was transected below the pathologic site using a linear stapler. The vagina was used for the extraction of the oral end of the transected rectosigmoid and for the placement of the anvil which made this procedure less invasive and free from any extra-abdominal trauma. The rectum was reconstructed using a circular stapler. Both procedures progressed after extensive dissection and mobilization of the relevant organs to facilitate tension free anastomosis. For both techniques only two 5 mm and two 10 mm ports are required. Results: Both reconstructive techniques are effective and safe. Case one was able to ambulate and take a regular diet the day after surgery and the second case resumed 3 days after surgery. No serious complications (like stenosis or leakage) occurred and no transfusions were required.

Discussion: Introduction of minimally invasive methods into radical resection and reconstructive surgery is an important advance in patient care. Precise and extensive dissection and identification of correct anatomy as well as mobilization of the organs facilitates intact reconstructive surgery. Following basic surgical rules and concentrating on fulfilling standard surgical requirements means a safe, effective and patient friendly result can be achieved even the most complicated procedures.

V2_04

How to cope with vaginal endometriosis: laparoscopic excision and repair

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Objective: Endometriotic lesions often spread around the rectum, the ureter, and the bladder and cause dysmenorrhea, low abdominal pains and coital pains. The vaginal mucosa is not so common for the occurrence of endometriosis, however, endometriotic lesions on the vaginal mucosa often cause the abnormal genital bleeding and coital pains, which often ruin the patient's QOL, so it is very important to excise these lesions completely. However, the massive excision of the vaginal mucosa leads to shortening the vaginal wall, and causes the difficulty of a sexual intercourse. In my presentation, we will show our original methods to cope with the vaginal endometriosis.

Method: Two women with deep pelvic endometriosis were performed total laparoscopic hysterectomy and a resection to vaginal endometriosis. Therefore, to keep enough length of the vaginal mucosa, it was needed to do vaginal extension. We removed the endometriotic lesions on the V shaped cut, and sutured along sagittal course as possible. It is effective to extend shortened vaginal wall.

Results: Two cases could excise vaginal endometriosis completely, and the recurrence of symptoms and the difficulty of a sexual intercourse were not appeared for 2 years.

Conclusion: In total laparoscopic hysterectomy, we kept enough length of the vaginal mucosa, even though complete excision of the vaginal endometriosis. It is effective to keep the patient's QOL.

V2_05

Ureteric Re-Anastomosis in a Case of Severe Endometriosis in a Young Patient—Lessons Learnt

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Objective: Ureteric involvement in endometriosis is rare (1–2%). Lesions are mostly asymptomatic but may have devastating con-

sequences. Our patient had a marked decrease in renal function, not recognised pre-operatively. An IV contrast study would have been helpful in assessing her urinary tract.

Materials and methods: A 24-year-old nulliparous woman underwent laparoscopic resection of endometriosis. An initial examination under anaesthetic revealed a “frozen” pelvis and bilateral involvement. Prior to laparoscopy ureteric stenting was attempted. The right-sided stent was inserted however attempts to insert a left ureteric stent or guidewire were unsuccessful due to an obstruction above the left ureteric orifice. After adhesiolysis using a harmonic scalpel, a large left-sided pelvic wall nodule was found, involving the ureter, bladder and lateral corner of the vagina. During dissection openings were made in the bladder and vagina. A 2 cm segment of left ureter was removed. A ureteric stent was inserted under both cystoscopic and laparoscopic control and the ureter was then re-anastomosed. The rectosigmoid junction was stenotic and nodular. It was dissected off the pelvic side-wall but not resected as it was felt that this would significantly increase the risk of fistula formation.

Results: Post-operatively the left kidney was not excreting IV contrast and a nuclear renal scan showed only 9% residual function. The ureteric stents and urethral catheter were removed 8 weeks post-op after imaging confirming no ureteric or bladder leak. Histology of the left ureteric segment showed complete obliteration of the ureter by endometriosis.

Conclusion: When managing an extensively dissected re-anastomosed ureter it is very important to leave a ureteric stent in-situ long enough to ensure adequate drainage and healing. It is equally important to leave the urethral catheter to prevent vesico-ureteric reflux and fistula formation. When treating young patients it is particularly important to maintain bowel, urinary and sexual function. In order to preserve these functions it is sometimes better to leave residual disease (in this case bowel disease), rather than perform major resective surgery, which could increase the risk of complications such as fistula formation which would greatly impact on the social life of a young woman.

V2_06

Endometriosis of the Sciatic Nerve

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Objective: 30-year-old nulligravid woman with normal periods was sent for consultation with cyclic right-sided neuralgia of sciatic nerve as suspicion of endometriosis. Symptoms began four years earlier in April, 2004 as episodic pain in right buttock and thigh lasting a day in a month. Later on pain worsened, X-ray of the spine was normal and physiotherapy was offered. MRI of lumbal spine and pelvis and electromyography were normal and piriformis sdr was suspected. Gynaecological examination was normal in October, 2005 but as symptoms increased during menstruation continuous contraceptive pills were recommended.

Materials and methods: During that time pain reduced and a laparoscopy was planned. The laparoscopy was normal and she discontinued using contraceptive pills due to heavy migraine.

With time the symptoms worsened leaving only one week pain-free time before the periods. In September, 2007 walking was difficult because of right footdrop. Menstrual pain in buttock and thigh was 8 of 10 in VAS. Electromyography in 2008 revealed severe damage in the sciatic and peroneus nerve. An 4 cm endometriotic lesion was found in the course of right sciatic nerve near in pelvic MRI. Gynaecological examination was again normal but the pain during menstruation was 10 of 10 in VAS. An operation was planned together with orthopaedic neurosurgeon. First, a laparoscopy was

performed by gynaecologists and peritoneal endometriosis was found in June, 2008. Right ovary was adherent to pelvic side wall and deep endometriosis was discovered beneath it. Sciatic nerve was exposed and endometriosis around it was removed. Sciatic pain symptoms were decreased after the operation. The second operation was performed by a surgeon by gluteal approach and a strong endometriotic fibrosis surrounding sciatic nerve was discovered and resected.

Results and conclusion: After one year the lesion was disappeared in MRI and pain was treated with GnRH agonists.

V2_07

Lateral Linear Stapler Resection for Small Endometriotic Nodules: an Alternative to Endoanal Discoid Resection

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Rectal endometriosis nodulectomy has classically been performed by discoid resection has been classically performed with circular endoanal staplers as less invasive alternative to segmental resection. The fact is that the discoid resection is associated with higher morbidity due to leakage and fistula formation.

In the past two years, we have been successfully performing lateral linear stapler resection for small rectosigmoid endometriotic nodules, with no cases of leakage or fistula.

The objective of this video is to describe the technique for this procedure.

V2_08

Rectouterine and vesicouterine peritonectomy for the treatment of multiple endometriotic lesions

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Radical resection of endometriosis is essential for recurrence prevention. In the past two years, we have been successfully performing rectouterine and vesicouterine peritonectomy on the cases where multiple endometriotic lesions are observed.

By performing a standardized approach, all endometriotic nodules—even the tiniest ones—can be excised, avoiding extensive cauterisation.

The objective of this video is to describe the standardized technique for this procedure as well as the strategies for the identification of smaller nodules, based on peritoneal light reflection characteristics.

V2_09

Laparoscopic Excision of Endometriotic Bladder and Rectovaginal Nodule

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Bladder endometriosis is not common, it is found in only about 1–2% of patients with endometriosis. We present a case of successful laparoscopic excision of severe deep infiltrating endometriosis of anterior and posterior compartment. It is showed the case of a 35 years old woman complaining of severe dysuria, dysmenorrhea, dyspareunia and dyschezia, non sensible to medical treatment. On this video is showed the laparoscopic excision of a 4 cm deep infiltrating endometriosis bladder nodule, reparation of cystostomy, excision of ureteral endometriosis and excision of rectovaginal nodule.

V2_10

Laparoscopic Approach for Deep Bladder Endometriotic Nodule with Intravesical Extension

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Objective: Deep vesical endometriosis represents less than 1% of all the endometriosis cases and symptoms are non-specific. Election treatment is partial cystectomy with complete exeresis of the lesion assuring the preservation of the vesical trigone and both ureters.

Materials and methods: A 31-year-old multiparous women consulted for a painful mass during menses at the previous C-section scar. A superficial mass of 3 cm was palpated, delimited and mobile over the scar. Ultrasound showed an image suggestive of endometrioma at the right ovary of 26 mm and a sessile irregular intravesical image of 28 mm. Cystoscopy demonstrated a wide and distensible bladder with a supratrigonal polypoid excrescent mass that did not affect the ureteric meatus. Pelvic MRI confirmed the diagnosis of vesical, right ovary and abdominal wall endometriosis.

Patient underwent general anesthesia and cystoscopic bilateral ureteral catheterization was performed. Bladder endometriotic nodule was dissected laterally and anteriorly and a controlled opening of the bladder was done in order to perform a complete identification of the disease. Lesion was completely excised with 0.5 cm margin, respecting both ureteral meatus. Bladder was sutured in two planes, checking vesical integrity with methylene blue. Right salpingectomy due to a salpingitic fallopian tube as well as haemorrhagic ovarian cyst drainage were performed. Supra-aponeurotic parietal node removal after skin incision was done at the end of the procedure.

Results: Postoperative period was uneventful and the patient underwent GnRH analogues therapy for 4 months. Two weeks later Foley and both ureteral catheters were removed, confirming the diagnosis by pathologic anatomy.

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

V2_11

Management of complication during laparoscopic treatment of DIE

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Surgical treatment of D.I.E., especially in cases of surgery of retroperitoneum, is burdened by a high rate of intraoperative complications, especially injury of organs and vascular damage. The most of the times to deal with the complication we have to convert to laparotomy with clear disadvantages for the patient. In some cases in experienced hands we can cope with complications in laparoscopy. Case Patient, 32 years old, with retroperitoneal D.I.E involving left side pelvis, starting from crossing iliac vessels up to parametrium. During nodule excision, at crossing iliac vessels on left side, we did a vascular damage to iliac vein leading to haemorrhage. To control bleeding first good vision by good aspiration, after we have increased pressure up to 14mmhg to reduced bleeding of the vein, third we have stitches with tread 3/0 with laparoscopic intracorporeal knots. Haemorrhage was stopped in few minutes.

Conclusion: over the laparoscopic surgery becomes more difficult we have to be able to manage complications by laparoscopy improving technique.

V2_12

Diaphragmatic endometriosis as cause of chronic shoulder and arm pain: case report and laparoscopic treatment

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Diaphragmatic endometriosis is a very rare condition, with an incidence of 0.34%. In the present study, we report a rare case of diaphragmatic endometriosis diagnosed during an operation for pelvic endometriosis in a 24 year-old woman, without systemic pathology or any history of previous abdominal surgery. This woman sought medical attention due to dysmenorrhoea, dyspareunia and the start of chronic pain in the right shoulder and arm, 7 months previously. Shoulder pain frequently occurred at the start of menses and was partly responsive to anti-inflammatory medical therapy. Diaphragmatic endometriosis was superficial, with the involvement of the serosal surface only, without penetration to the muscularis; for this reason the lesions were treated with bipolar electrocoagulation. From the first menstrual cycle after laparoscopy, the patient reported a significant decrease in pain in the right shoulder and arm, as well as in the pelvis, during menses. A thorough examination of the abdominal cavity is particularly important any time a laparoscopy is performed. Laparoscopic surgical treatment was efficacious for the remission of algic symptoms. However, we recommend carrying out this treatment only when there is a surgeon with relevant laparoscopic experience available, and when the diaphragmatic lesions are superficial and far from both the phrenic nerve and the left ventricle.

V2_13

Prophylactic suturing of the ureter following extensive ureterolysis during deep endometriosis laparoscopic excision

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Surgical treatment of deep endometriosis requires complete excision including extensive ureterolysis and/or bowel surgery when necessary. This excision is associated in up to 21% ureteral lesions in women with severe hydronephrosis. Ureteral lesions, both lacerations and transections, can be treated laparoscopically. For a muscularis defect of the bowel prophylactic suturing has become standard treatment given the risk of late perforations.

We today want to extend the concept of prophylactic suturing of the bowel to the ureter. Indeed, following extensive ureterolysis we had seen at least 2 late perforation, and 2 uretero-vaginal fistulae in women without and with a stent (because of an intact but very thin segment respectively). Since February 2008 prophylactic suturing of the ureter over a stent was performed whenever either the ureteral wall was possibly injured, or when a thin, and thus rather avascular segment of the ureter remained following ureterolysis. Prophylactic suturing required 2 to 5 stitches of 5*0 poliglecaprone in order to approximate the muscularis of the ureter. So far 3 patients underwent prophylactic suturing and in all 3 the outcome was uneventful, without stricture at 6 or 12 months after surgery.

Late ureteral leaks and late uretero-vaginal fistulas are even more rare complications than late bowel perforations. Hence it is practically impossible to perform a prospective randomised trial to prove the beneficial effect of prophylactic suturing of the ureter. We suggest, however that it is prudent to perform a 2–3 stitch prophylactic suturing, which moreover can difficultly be conceived to carry a risk for ureter stenosis afterwards.

In conclusion, we suggest that laparoscopic prophylactic suture of the ureter should be performed systematically whenever in doubt of a

muscularis lesion, or when a thin ureteral segment remains after resection of a deep nodule.

V2_14

Treatment of endometriosis of uterosacral ligament and rectum through the vagina: Description of an hybrid NOTES Technique

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Endometriosis is common in women of childbearing age, while involvement of the recto sigmoid requiring resection is rare. Laparoscopy has become a standard procedure in the management of endometriosis. The optimum way to diagnose endometriosis is by direct visualization of the implants. Usually for the removal of the specimen, an additional, larger abdominal incision is needed. We describe the successful treatment of deep infiltrating endometriosis of the uterosacral ligament and the rectum using a modified combined laparovaginal technique. Our technique is capable of avoiding a larger abdominal incision. This combined laparoscopic-trans vaginal approach, avoiding the extension of port-site incisions, represents a viable option for the treatment of bowel endometriosis.

Hysteroscopy: from Office to Resectoscope

V3_01

Hysteroscopic removal of IUCD with lost string in a pregnant woman

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Objectives: To determine the feasibility of removing IUDs hysteroscopically during 1st trimester of pregnancy and the subsequent improvement in pregnancy outcome.

Design and methods: 36 years old lady had her 5th pregnancy while she had 2 living children that were delivered by cesarean section, she had IUD for 1 year. Presented with amenorrhea, on physical and sonographic examination she was discovered to have a 7 weeks viable fetus.

Results: Hysteroscopy was done for the patient and the IUD was found adherent to the gestational sac, the IUD was removed successfully by hysteroscopy and the patient followed up till the end of pregnancy she had uneventful pregnancy.

Conclusion: IUD with lost string accompanied by pregnancy can be removed hysteroscopically.

V3_02

The H Pipelle for outpatient diagnostic hysteroscopy

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Abnormal uterine bleeding is one of the commonest presenting complaints encountered by gynaecologists. Be it menorrhagia, intermenstrual bleeding, postcoital or postmenopausal bleeding, many such patients ultimately undergo diagnostic hysteroscopy with endometrial sampling as part of their assessment, particularly if symptoms persist or pelvic imaging shows a uterine abnormality. Hysteroscopy is generally acknowledged to be the “gold standard” technique for investigating the uterine cavity for endometrial abnormalities and focal lesions, and is often done as an office/out-patient procedure. Traditionally, diagnostic hysteroscopy involves the use of a speculum and tenaculum to visualise

and hold the cervix while the hysteroscope is inserted into the uterine cavity. In recent years a new approach to diagnostic hysteroscopy has been developed, vaginoscopic or “No touch” hysteroscopy, which is performed without instrumenting the vagina, the cervix being identified visually by hydro-distension of vagina. Several studies have shown that this approach is effective and reduces patient discomfort. Until recently, to obtain an endometrial sample at “no touch” hysteroscopy, either an operating hysteroscope had to be used to allow the insertion of biopsy forceps, or the diagnostic hysteroscope had to be removed and a speculum and tenaculum inserted to obtain a biopsy with devices such as the Pipelle, Vabra aspirator or Vacurette. The first approach would tend to make the hysteroscopy more uncomfortable because of the need to use a relatively wider instrument, while the second technique negated the benefits of the “no touch” approach with the result that endometrial sampling often became the most uncomfortable part of the investigation. We developed a new device, the H Pipelle (Laboratoire C.C.D, Paris, France), with the specific aim of allowing an endometrial biopsy to be obtained at “no touch” hysteroscopy using a narrow-bore, single-channel diagnostic hysteroscope without the need to insert additional instruments into the vagina. The H Pipelle is based on the original Pipelle endometrial sampler (Laboratoire C.C.D, Paris, France) but has been lengthened from 23 cm to 50 cm so that it can be passed through the diagnostic sheath of a hysteroscope once the optic has been removed. The H Pipelle allows a ‘No touch’ biopsy to be taken after a ‘No touch’ hysteroscopy.

V3_03

Hysteroresectoscopic management of heterotopic cesarean scar pregnancy with preservation of intrauterine twin gestation and ongoing pregnancy: case report

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Objective: To present a case of hysteroresectoscopic removal of a heterotopic cesarean scar pregnancy and ultrasound control of operation and saved intrauterine twins right after removing scar pregnancy.

Design: Case report. Setting: Private womens hospital. Patient(s): A 34-year-old woman with heterotopic cesarean scar pregnancy and intrauterine twins. Intervention(s): Hysteroresectoscopic removal of heterotopic cesarean scar pregnancy.

Main outcome measure(s): Ongoing twins pregnancy after hysteroresectoscopic management of heterotopic cesarean scar pregnancy.

Result(s): An ongoing intrauterine pregnancy at 10–12 weeks gestation after successful removal of the heterotopic gestational mass by a hysteroresectoscopic approach.

Conclusion(s): Hysteroresectoscopic removal of the ectopic mass may be a radical approach in cases of heterotopic cesarean scar pregnancy. Hysteroresectoscopic excision of the cesarean scar pregnancy gives the opportunity to preserve the viable intrauterine gestation while maintaining a strong lower uterine segment. Ultrasound is an effective tool that enables precise location of the ectopic mass during the operation.

V3_04

Narrow Band Imaging System (NBI) Hysteroscopy for Superficial Endometrial Lesions: Video of a Novel Technique

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Objective: Narrow-band imaging (NBI) is a new real-time technique that involves the use of interference filters to illuminate

the target in narrowed red, green and blue (R/G/B) bands of the spectrum.

Materials and methods: The blue channel collects information on the fine surface architecture of the mucosa with the superficial capillary network; the red channel provides data on the collecting vessels in the depth of the mucosa and the green channel gives an intermediate image. In the final mixed image, superficial and deep details are superposed. This increases the contrast between the epithelial surface and the subjacent vascular network. Hysteroscopy actually represents the gold standard procedure for the diagnosis of endometrial diseases. Conventional hysteroscopy has sensitivity of about 99% in detecting endometrial cancer and lower for pre-neoplastic lesions with discarding data from literature.

Results: Lasmar et al. reported that sensitivity of hysteroscopic view is 80% for endometrial cancer and 56,3% in case of hyperplasia: subjective hysteroscopic appearance of morphologic changes in the endometrial mucosa is not enough for a diagnostic conclusion.

Conclusions: Hysteroscopy with direct biopsy by using narrow band imaging (NBI) is a new potentially powerful diagnostic tool for early detection of early stage endometrial cancer and hyperplasia. In this video of an operative hysteroscopy we show how NBI works to improve visualization of the endometrial surface.

Case Report

V4_01

Laparoscopic tubal milking

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Objective: To assess the feasibility of laparoscopic tubal milking. Tubal ectopic pregnancy is the most common type of ectopic pregnancy, it accounts for >95% of all ectopic pregnancy cases. Options for surgical treatment are salpingotomy, salpingectomy and tubal milking via laparoscopy or laparotomy.

Design and methods: We treated 121 cases with unruptured tubal pregnancy by laparoscopic tubal milking. Using 10 mm trocar inserted through umbilicus and 2 ancillary 5 mm trocars inserted through lower quadrants of the abdomen. 2 endograspers introduced through the latest trocars and used to milk the tube by consecutive grasping of the tube from proximal to distal end.

Results: We did not encounter any intraoperative or postoperative complications, in 8 cases rupture of tubal pregnancy occurred while trying to express the tubal gestation and salpingotomy was done. All patients were discharged on the 1st postoperative day. During follow up 1 patient had recurrent ectopic pregnancy in the contralateral tube. 56 got intrauterine pregnancy while the rest did not have desire to conceive. Of the 121 patients, 77 had IUCD, 20 were using OCP, 2 used contraceptives and 22 were not using any contraception.

Conclusion: Tubal milking (expression of tubal gestation) is a safe procedure for treatment of tubal pregnancy and conserving future fertility.

V4_02

AJUST: a new procedure for correction of stress urinary incontinence in woman

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Objective: To repair stress urinary incontinence in women due to urethral hypermobility or intrinsic sphincter deficiency.

Material: A new support launched by BARD called AJUST™ is an adjustable single-incision sling. Consists of:

- Introducer with handle and anchor release lever,
- Flexible stylet,
- Sling implant of the polypropylene, with
- Two anchors, one fixed and one adjustable,
- Sling lock introduced into the adjustment mesh and,
- Adjustment tab in the extreme to facilitate the regulation.

Method: Identify the mid-urethra by the middle distance from external urethral meatus to the bladder neck distinguish by the ball of the Foley catheter, Place Allis clamps laterally to the vaginal lengthwise incision, 1–1.5 cm at the level of mid-urethra.

Paraurethral tunnelling in a 45 degree angle with Metzenbaum scissors until the tip scissors makes contact with the ischiopubic ramus. This procedure is repeated on the contralateral side.

Procedure: Load the anchor fixed in the introducer with the lever of the handle.

After appropriate dissection is completed, pass the fixed anchor behind the ischiopubic ramus and through the obturator internus muscle until it is placed just beyond the ramus.

Pivot the introducer around the ischiopubic ramus, passing the fixed anchor through the obturator internus and membrane.

Ensure that the midline indicator is at or slightly past the midurethra in the direction of insertion (this is frequent).

Remove the introducer and apply gentle traction to the suburethral sling to confirm appropriate fixation.

Then load the adjustable anchor into the Introducer and secure by retracting the anchor release lever and repeat the procedure on the opposite side.

Stabilize the adjustable anchor at its insertion point while softly pulling on the adjustment tab.

Adjust the sling.

To loosen, apply moderate countertraction to the suburethral sling on the adjustable side of the sling implant.

Once correct sling adjustment is achieved, insert the flexible stylet into the adjusting tab opening and push the sling lock into place, up to the adjustable anchor.

Remove the stylet and trim the excess adjustment mesh lateral to the urethra at the level of the vaginal sulcus. Close the vaginal incision using suture.

Check clear urine

Results:

Not necessary vaginal packing

Does not need hospitalization

It is a short procedure (7–8 minutes)

It requires a single incision

It can be done with local anesthesia

It is not necessary cystoscopy systematically.

The patient is going home after 2 or more spontaneous normal urinations

Conclusions: It is a good system for the achievement without income, easy procedure, although it is possible that requires a learning curve short but something longer than the classic transobturator techniques. The procedure of the single-incision makes to avoid access doors to infections or inguinal retroperitoneal, for example. The procedure seems a promising technique.

V4_03

Catamenial pneumothorax and ascites

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33-year old healthy woman with regular periods was sent to hospital due to pelvic pain. She had been through infertility treatments with no

success and laparoscopy was performed and minimal endometriosis was suspected one year earlier. Now, appendicitis was suspected, gynaecological examination was normal, TVS showed ascites in peritoneal cavity and CT scan revealed a massive pneumothorax on a right side. Situation was cured with pleural suction but a recurrence happened after one month and endoscopic pleurectomy was performed. Unfortunately, a third pneumothorax occurred one month postoperatively and pleural suction was done again. After fourth episode open thoracotomy, pleurectomy and resection of diaphragmae with endometriotic lesions were performed. Pathology report confirmed endometriosis.

The woman was sent to gynaecological consultation but examination and TVS were normal except fluid in pelvis. Levonorgestrel releasing intrauterine system (Mirena) was implanted and GnRH agonist was started to achieve amenorrhea. During the follow-up there was a painful lesion in umbilicus and swelling of lower abdomen once a month though she had no periods. A laparoscopy was performed, 1400 ml of bloody ascites was aspirated from peritoneal cavity, diaphragma seemed normal but adhesions were deliberated and peritoneal endometriosis was electrocoagulated in pelvis and also umbilical endometriotic lesion was resected. Postoperatively she had spotting with Mirena but when also peroral progestin was added, she was doing fine. (Photos of diaphragma and a video of laparoscopy are presented)

V4_04

Simultaneously ectopic and cervical pregnancy

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Objective: Cervical pregnancy occurs in 1% of the ectopic pregnancies or 1/10000 pregnancies. This video presents a case with a simultaneously tubal ectopic and cervical pregnancy.

Methods and procedures: The patient was admitted with heavy bleeding 3 weeks after an laparoscopic salpingostomy.

Results: A D&C was performed but due to heavy bleeding a balloon tamponade was inserted. Trans vaginal ultrasound indicating a hourglass appearance with an empty uterus, suspicious for a cervical pregnancy. The HCG was falling from 22000 to 19670 in 1 week. The patient suffered from continuously vaginal bleeding and anemia. Hysteroscopy with loop resection was performed and the pathology showed pregnancy tissue outside the internal os. A second look 2 weeks later showed only remnants of deciduas and the irregular bleeding disappeared.

Conclusions: Ultrasound and endoscopy is feasible in this extreme rare clinical case.

V4_05

Laparoscopic treatment of interstitial (cornual) pregnancy

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Objectives: Interstitial (cornual) pregnancy is the least common type of ectopic pregnancy. The incidence of interstitial ectopic is 1 in 2500–5000 live births and it accounts for 2–6% of all ectopic pregnancies' risk factors predisposing to an interstitial ectopic pregnancy are the same as those for tubal ectopics and include previous ectopic pregnancy, assisted reproduction treatment and sexually transmitted infections and previous ipsilateral salpingectomy.

Design and methods: 32 years old patient with history of laparoscopic adhesiolysis for pelvic adhesions presented with lower

abdominal pain in pelvic examination she had a slightly enlarged uterus, Hgb 10 gm/dl, serum B-HCG 2680, ultrasonography suspected a left cornual ectopic pregnancy, with positive fetal heart pulsation. arrangements were made for emergency laparoscopy and possible laparotomy, laparoscopy confirmed left cornual ectopic pregnancy, with single trocar entry the ectopic pregnancy was recognized. First the pregnancy material was aspirated then a cut was made in cornual region by the help of endograsper the ectopic pregnancy was extirpated and sutured.

Conclusion: Interstitial (cornual) pregnancy can be treated by laparoscopic surgery.

V4_06

Fallopian Tube Torsion in a 24 Weeks Pregnancy: the Laparoscopic Treatment of a Rare Case

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Objective: Fallopian Tube torsion is a rare condition, even more during pregnancy. This brings extra problems with diagnosis and treatment. Acute abdominal pain is the most common clinical presentation.

Materials and methods: This is a case report of acute right abdominal pain in a 24 weeks pregnant woman. A differential diagnosis between adnexal pathology, appendicitis and cholecystitis was only given by laparoscopy.

Results: This video shows the laparoscopic management of a right Fallopian tube torsion.

Conclusion: Laparoscopy, even in advance pregnancy, represents the best technique of diagnosis and treatment.

V4_07

Robotic-Assisted Laparoscopic Myomectomy. Case Report

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Objective: Since the late 1990s, the use of computer-assisted or robotic technology in minimally invasive gynecologic surgery has been increased. Instrument articulation, downscaling of movements, absence of tremor, 3-D image, and comfort for the surgeon, are some of the advantages of the robotic technology. We present a case of Robotic-assisted laparoscopic myomectomy in our hospital. To report a case of a patient with a 2 myomas who underwent robotic-assisted laparoscopic myomectomy using the da Vinci S system.

Materials and methods: A 42-year-old, gravida 2, para 2, patient presented to our office with a chief complaint of methrorragia that produced anemia, a pelvic sonogram disclosed a fundical intramural myoma measuring approximately 5×5 cm, and another myoma of 5×5 cm. that deforms endometrial cavity at the anterior uterine wall. The patient desire to retain her uterus and accepted to undergo myomectomy using the laparoscopy-assisted robotic system and signed the consent form.

Results: The operation time was succesfull, with an estimated blood loss of 100 mL. The patient was discharged two days after surgery.

Conclusion: Robotic-assisted laparoscopic surgery is a new technique for myomectomy. The da Vinci system may be of great help when applying the suturing techniques. More experience with and long-term follow-up of robotic surgery may be warranted to further validate the role the robotic in gynecologic surgery.

V4_08

Laparoscopic Management of Benign Adnexal Masses with Single Site Transumbilical Access L.E.S.S.

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Objectives: At present, mini-laparoscopic procedures seem to represent the new frontier of endoscopic surgery. The new technique, named LESS (Laparo–Endoscopic Single-Site Surgery), performed throughout a single trans-umbilical access, has already achieved good results in terms of feasible, cosmetic outcome, reduced postoperative pain and length of hospital stay as far as it concerns the urological and general surgical field. The primary endpoint in this initial experience in gynaecology consists in evaluating the security and feasibility of this approach for the laparoscopic treatment of benign adnexal disease, utilizing exclusively a single trans-umbilical access to perform both bilateral adnexectomy and ovarian cystectomy. Secondary endpoints are the evaluation of post-operative pain and cosmetic outcome.

Materials and methods: A 57 years old woman (BMI 25) with familiarity for breast cancer, a 42 years-old (BMI 20) and 26 years old (BMI 21) woman affected by benign ovarian cysts underwent respectively bilateral adnexectomy and ovarian cystectomy through a Laparoscopic single site access (LESS) using standard straight laparoscopic instruments, inserted into a single trocar composed by three ports: one for the telescope and two for the instruments.

Results: The procedures required the same surgical steps of the standard laparoscopic approach without the need of further accesses apart from the trans-umbilical one. No post operative complication were registered; postoperative time was reduced and patients were discharged one day after surgery, without visible marks except for the umbilical scar.

Conclusions: The laparoscopic approach through a tran-umbilical access (LESS) emerged as a feasible, secure and effective technique for the treatment of benign adnexal diseases with good results in terms of post-operative pain control and cosmetic outcome.

V4_09

Laparoscopic Management of a Iatrogenic Vesico-Vaginal Fistula

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Objective: A lot of techniques used to repair vesico-vaginal fistulas (VVF) have been described in literature. Actually only few cases of laparoscopic repair of VVF have been reported.

Materials and methods: We are going to describe in a symptomatic 54 years old woman the technique of laparoscopic repair of VVF, diagnosed 15 days after a total laparoscopic hysterectomy for uterine fibromatosis. A cystoscopy was performed before laparoscopy, then two DJ ureteral catheters (6 Ch) was applied and another catheter was introduced through the fistula. Then the patient was positioned supine and two 10 mm trocars and three 5 mm were inserted. The vaginal vault was then released from

some adhesions to the sigmoid and the fistula route was identified with the help of the catheter previously applied. The rear wall of the bladder was then separated from the vaginal wall and the fistula tract was excised. The vaginal wall was then sutured with separate stitches (Polyglycolic suture, Serafit 0 HRX 27) and the bladder with a double continuous suture (Polyglactin suture, Vicryl 3/0). An interposing omental flap was placed and fixed between the bladder and vagina. Finally a drainage was inserted into abdomen.

Results: No complications occurred. The drainage was removed on fifth postoperative day and the catheter was removed after twelve days. Retrograde cystography on postoperative day 12 revealed no contrast leakage.

Conclusions: Laparoscopic approach in the management of VVFs can be considered a feasible therapeutic option, with the advantage of being minimally invasive and with low morbidity.

V4_10

Laparoscopic Cerclage—Tips and Tricks from 17 Cases

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In this video, we present our experience as well as tips and tricks for performing laparoscopic cerclage placement. Abdominal cerclage placement is indicated in patients with cervical incompetence who have either a prior failed vaginal cerclage or a very short cervix. Abdominal cerclage has been associated with better obstetrical outcomes in a setting of a prior failed vaginal cerclage and in our experience perioperative outcomes are significantly improved. A cost analysis of our initial 17 cases confirmed that laparoscopic cerclage is less costly than the abdominal approach. We have been successfully performing these cases for two years and perform approximately 10 cases per year. We would therefore like to present our experience with this procedure.

V4_11

Laparoscopic Creation of Neovagina in a Patient with Mayer-Rokitansky-Küster-Hauser Syndrome

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Objective: Vaginal agenesis is an uncommon Müllerian malformation, the most common syndrome is the Mayer-Rokitansky-Küster-Hauser. Since 1965 Vecchiatti reported the creation of an artificial vagina in this syndrome, in 1994 Fedele published a laparoscopic neovagina creation modifying the Vecchiatti surgery. To present a case of a creation of neovagina in a patient with Mayer-Rokitansky-Küster-Hauser syndrome.

Material and methods: We present the case of a 16 years old female who was evaluated for primary amenorrhea and normal primary sexual characters who showed vaginal agenesis at physical examination. Ultrasonography, MRI, hormonal function, and karyotype confirmed the diagnosis of Mayer-Rokitansky-Küster-Hauser syndrome.

The surgical technique was Vecchiatti laparoscopic operation, with Karl Storz device. The function was assessed with the Rosen's Female Sexual Function Index questionnaire.

Results: The time of hospitalization was 10 days, at the discharge the vaginal length was 9 cm. The patient was evaluated monthly, 2 and 3 months after the use of dilators, with a final vaginal length of 8 cm. The follow-up was 18 months. According to the questionnaire of Female Sexual Function Rosen the results were good.

Conclusion: The creation of neovagina with the Vecchiatti laparoscopic technique is an option with good anatomical and functional results.

V4_12

Laparoscopic Interventions During Pregnancy

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Since 1995, there were performed over 7000 laparoscopic and hysteroscopic interventions in The University Clinic of Ob/Gyn "Bega" Timisoara, Romania.

48 cases represented interventions during the first trimester of pregnancy out of which, 28 cases of cystectomy, 18 cases with partial ovary resection and 2 cases of hyper stimulation syndrome.

The indications were: the volume and structure of the cyst, symptomatology and the response of the cyst under treatment.

The particularities were represented by difficulty in manipulating the uterus without injuring it, conservation of the corpus luteum and anaesthesia.

There were no complications intra or post operatory, the average time spent in hospital was 48 to 96 hours.

Laparoscopic surgery represents the ideal surgical treatment during pregnancy.

V4_13

Uterine Scar Dehiscence Repair in "Rendez-Vous" Technique

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Objective: Our days the population of fertile women who have had at least one caesarean section is growing. In this population a defect in the anterior uterine wall in the area of the previous uterotomy can be easily diagnosed by a transvaginal ultrasound examination. The clinical implications of this "new" anatomical condition are post-menstrual bleeding, secondary infertility, scar-EUG and risk of uterine rupture during an eventual following pregnancy and vaginal delivery.

Materials and methods: In this case series we describe an original endoscopic procedure for the repair of a symptomatic postcaesarean uterine scar dehiscence in eight women. It consists of a hybrid endoscopic technique with a simultaneous hysteroscopic and laparoscopic approach. The uterine scar dehiscence has been repaired laparoscopically with return to a normal uterine conformation under hysteroscopic control. The average operating time was 105 minutes (90–120 min) and no intra- or postoperative complications occurred.

Results: One patient underwent an elective C-section after an uneventful pregnancy. In one case we found endometriosis in the dehiscence, suggestive for a longterm complication of the uterine suturing during caesarean section.

Conclusions: The "rendez-vous" technique is safe and feasible and it allows to restore the anatomical conformation of the uterus with a minimal invasive endoscopic procedure.

V4_14

Treatment of Prolapse of Pelvic Organ by Collocation of Total Mesh, and Collocation of Suburetral Mesh for the Urinary Incontinence of Effort in Corpse with Later Dissection

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The aim is to value the possibility of teaching on surgery of the prolapse in fresh corpses and the later study of the anatomical

relations of the meshes and of the placing of the needles through the tissues.

Material and methods: Collocation of a total mesh (Prolift) and of a TOT in-out in a fresh corpse of a 80-year-old woman. Later dissection with the collaboration of the group of professors of anatomy of the University of the Vasque Country. Video recording of the whole meeting for the later assembly of explanatory DVD.

Results: See attached photographs as sample of the images in DVD. The DVD that one will present will combine images encouraged with those of the corpse both of the surgery and of the dissection.

Conclusion: It is verified the suitability of fresh corpse tissue for the accomplishment of the surgery for its great similarity with the alive patient. The later dissection confirms the safety of a ruled surgery but the need to be very strict in the technique for the scanty safety margin available.

Hysterectomy and related Techniques

V5_01

Total Laparoscopic Hysterectomy (TLH) "Tricks of the Trade!"

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Objective: Video presentation to choreograph simple reproducible techniques, which make Total Laparoscopic Hysterectomy (TLH) a very safe, and achievable operation to master.

Materials and methods: Safe entry and normalisation of anatomy is first emphasised. Ureteric identification at the three common sites of injury is demonstrated. Broad ligament fenestration and trans-peritoneal techniques to identify ureters facilitate safe isolation in securing of the infundibulo-pelvic / tubo-ovarian and uterine artery pedicles are shown. Ergonomic use of the "Pelosi" uterine manipulator to maintain cephalic orientation and flexion of the uterus. This helps to avoid bladder/ureteric injury and presents the uterus for securing the uterine artery. Suturing, tie and concurrent dual energy modalities (ERBE Biclamp and ETHICON Harmonic scalpel) techniques used to prevent venous back bleeding in achieving meticulous haemostasis of pedicles, are demonstrated. The use of the "McCartney" transvaginal colpotomy tube to safely remove the uterus, displace the bladder, suture the vaginal vault and perform McCall's Culdoplasty is presented.

Conclusions: Techniques described replicate many of the principles of open and vaginal surgery. Our group have performed over 150 TLH's safely using these described techniques with no injuries to ureter, bladder, bowel or major vessels. Operation time now rarely exceeds one hour.

V5_02

Total laparoscopic hysterectomy in a patient with a large inter-ligamentous fibroid: A two-step technique

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Objective: To present a two-step technique of total laparoscopic hysterectomy in a patient with a large inter-ligamentous fibroid.

Materials and methods: A 44 years-old patient presented deep dyspareunia. During her gynecological evaluation a 8 cm inter-ligamentous fibroid, was found to the right completely displacing the uterus to the left and back. The patient was scheduled for laparoscopic hysterectomy with preservation of her ovaries.

Results: The position of the fibroid made safe ligation of the uterine vessels tricky. Furthermore the course of the right ureter was not

possible to identify, and it was decided to enucleate the fibroid, identify the ureter and proceed with the hysterectomy, which was then safely concluded.

Conclusions: In cases with large inter-ligamentous fibroids where the uterine vessels are difficult to reach, a two step technique can convert a difficult procedure into a straightforward and safe one.

V5_03

Total Laparoscopic Hysterectomy With Single Trans-Umbilical Access (L.E.S.S.)

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Objective: At present, mini-laparoscopic procedures seem to represent the new frontier of endoscopic surgery. The new technique, named LESS (Laparo-Endoscopic Single-Site Surgery), performed through-out a single trans-umbilical access, has already achieved good results in terms of feasibility, efficacy and safety with demonstrated benefits regarding cosmetic satisfaction, post-operative pain, fast recovery and short hospitalization as far as it concerns the urological and general surgical fields. Moreover, recent reports in literature have attempted some applications also in the gynaecologic field, confirming these advantages in the treatment of benign adnexal diseases.

We report for the first time a total hysterectomy performed by a trans-umbilical LESS procedure.

Materials and methods: A 42 years old woman (BMI 21), with no familiarity for cancer diseases, affected by endometrial hyperplasia and right ovarian cyst with benign US features and negative Ca125 serum levels, underwent total laparoscopic hysterectomy with mono-lateral adnexectomy through a single trans-umbilical access using standard straight laparoscopic instruments, inserted into a unique multiport trocar composed by three operative channels: one for the telescope and two for the instruments. Moreover an intrauterine device was utilized to facilitate structures isolation and traction during the procedure and then to perform colpectomy.

Results: Port placement was successful, without accidents or inadvertent port removal. The procedure required the same surgical steps of the standard laparoscopic hysterectomy without the need of further accesses apart from the trans-umbilical one. No vascular or visceral injuries, loss of pneumoperitoneum or intraoperative port-site bleeding occurred during the procedure and no post-operative complications were registered. Post-operative recovery was rapid with only optional analgesic therapy to control post-operative pain. Patient was discharged home one day after surgery, without visible marks except for the umbilical scar.

Conclusions: Trans-umbilical LESS approach emerged as a feasible, safe and effective technique to perform a total laparoscopic hysterectomy with good results in terms of post-operative pain control and cosmetic outcome.

V5_04

Total laparoscopic Hysterectomy with 'Port Hopping'

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We present a case of a 57 year old nulligravida with symptomatic uterine fibroids. A pelvic ultrasound demonstrated a uterus measuring 18.3×14.1×16.5 cm. On exam the uterus extended beyond the umbilicus. Due to the size of the uterus and history of a midline incision, direct optical entry at the left upper quadrant was chosen. A

12 mm trocar was placed through the umbilicus and two other peripheral 5 mm ports were placed as well. The video demonstrates the advantage of "port hopping", i.e. moving the camera and instruments from one trocar to the other depending on the anatomical site of interest. This adds a level of flexibility that is not available using robotics or angled scopes. The total laparoscopic hysterectomy lasted 2 hours with minimal blood loss and a specimen weight of 1674 grams.

V5_05

Laparoscopic Hysterectomy: Modified Technique

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We present a modified technique of total laparoscopic hysterectomy done because of benign uterine disease. Setting: Department of Gynecological Sciences and Human Reproduction, Padua University.

Interventions: All time periods of procedure were made by ultrasonic scalpel (Ultracision, Ethicon Endo-Surgery, Cincinnati, Ohio). The first time period was to display by manipulator the anterior fornix and the vesicouterine fold and pubo-cervical fascia was dissected. The anterior peritoneal layer of the broad ligament was opened, then the uterine pedicle was skeletonized and the vessels were coagulated and dissected. The coagulation and section of uterine arteries was obtained with variability one with instrument harmonic ACE. The uterus-ovarian ligament and salpinx or infundibolopelvic if salpingo-oophorectomy was made, were coagulated and transected. The uterosacral ligaments and upper part of the cardinal ligaments were coagulated and dissected, the vaginal wall was opened and cut completely looking at fornix thanks to uterine manipulator. The uterus was removed transvaginally, with previous morcellement in cases of huge uterus. The vaginal vault was sutured endoscopically by interrupted intracorporal sutures, two laterally incorporating anterior vaginal wall (pubocervical fascia) and uterosacral ligament stumps and one middle.

Oncology

V6_01

Laparoscopic total lymphadenectomy

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Objective: 99 cases were studied to assess the efficacy and safety of laparoscopic lymphadenectomy, 12 of ovarian carcinoma, 66 cases of endometrial ca, 21 cases of cervix ca, age of patientes ranged between 29–77 years average 58, the number of excised lymph nodes ranged between 40–55 average 48.

Design and method: A ten mm trocar was placed through the umbilicus as well as a suprapubic region. Two five mm trochars were placed in the bilateral lower quadrants. Retroperitoneal space was entered, blunt dissection was used to isolate ureters, graspers were used to grasp lymph node packets. Lymph nodes up to the level of renal arteries were dissected.

Results: In one case intra-abdominal hemorrhage occurred due to injury of inferior vena cava and laparotomy was done. No other intra-operative or postoperative complication was encountered.—estimated blood loss 80 cc—operative time 90 minutes—discharged home on postoperative day 2—folly catheter was removed on postoperative day 1.

Conclusion: Total laparoscopic bilateral pelvic lymphadenectomy is feasible and safe. Advantages include shorter hospital stay, less morbidity, overall quicker recovery period. Shorter interval to adjuvant therapy.

V6_02

Conservative treatment of Borderline tumor

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Objective: Patients with borderline tumors of the ovary, FIGO stage I, have a favorable prognosis, and laparoscopic treatment with less complications might be favorable. Frozen sections, especially for the mucinous borderline ovarian tumor group are difficult and often gives wrong diagnosis intraoperatively.

Methods and procedures: Transvaginal ultrasound combined with minimal invasive endoscopy is beneficial for these typically young patients with fertility future wish. Intraoperative tumor rupture is more frequent with laparoscopic approach than with laparotomy and protection of the abdominal wall and peritoneum by use of endobag without spilling might be of clinical importance.

Results: A video showing the ultrasound pictures as well as primary operation and the relapse with tumor excision in bag in order to protect the operative field are demonstrated.

Conclusions: Endoscopic treatment and the follow up is important and relapses might be treated conservatively.

V6_03

Laparoscopic Debulking surgery for Advanced Ovarian Cancer

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Introduction: Laparoscopic surgery is traditionally regarded as a contraindication for advanced ovarian cancer. However, standard laparotomy is a very invasive procedure which is sometimes difficult to perform with very poor performance status patients and also may cause a delay of the main therapy; chemotherapy. In contrast, the laparoscopic approach allows quick recovery from surgery meaning a quick return to primary treatment. It also has the advantage of decreasing bowel morbidity, which also frequently causes delays in administration of chemotherapy. We have introduced laparoscopic debulking surgery into the management of advanced ovarian cancer.

Procedure: From November 1998 through March 2007 eighty cases of stage I–IV epithelial ovarian cancer underwent laparoscopic interventions, of these, 39 advanced cases as a cytoreductive surgery. The basic procedure for these cases includes hysterectomy/bilateral adnectomy, retroperitoneal lymph node dissection, sampling of ascitic fluid, multiple peritoneal biopsy, appendectomy and omentectomy. Cytoreductive surgery included elimination of peritoneal dissemination using an argon beam coagulator, removal of the pancreas tail and spleen because of metastatic tumors to the splenic hilus and diaphragmatic stripping. In some cases stripping of the total pelvic peritoneum including segmental resection of the rectosigmoid due to bowel wall invasion was combined with an extraperitoneal hysterectomy to complete the pelvic part of the procedure. Survival analysis was assessed using the Kaplan-Meier method and log-rank test. We compared the laparoscopic group data (excluding the cases in which the observation period was less than two years N=46) and a traditional open surgery group (historical controls from January 1995 through May 2005 N=32).

Results: The survival analysis of our laparoscopy group revealed no significant differences ($P=0.81$), even when restricted to advanced cases (stage III, IV) ($P=0.75$). No cases were converted to laparotomy, and only one case experienced bowel obstruction. One case experienced bowel injury and another two cases experienced bladder

injury. All were repaired laparoscopically. 2 cases have suffered from port site metastasis.

Discussion: In order to achieve a new stage in management to increase the quality of life of patients, it is necessary to break traditional patterns and attempt a new approach. This was our motivation in applying this technique to ovarian cancer cases.

V6_04

Laparoscopic Radical Hysterectomy with Vaginectomy and Vaginal Reconstruction Using Pelvic Peritoneum in Stage I Primary Vaginal Carcinoma

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Objective: The objective of this presentation is to evaluate the technique, feasibility and oncological safety of laparoscopic radical treatment of early-stage vaginal carcinoma and to describe the vaginal peritoneal reconstruction by Davydov technique. VIDEO PRESENTATION.

We assess different therapeutic options for vaginal cancer, as well as different ways to preserve sexual function. Literature review.

Materials and methods: We present a case of a 55 year old woman with primary vaginal carcinoma stage I who wishes to preserve coital function. We performed a radical surgery with immediate reconstruction as the technique described by Davydov.

Results: The operating time was 300 min and the estimated blood loss was 450 mL. There were no intraoperative complications. All surgical margins and nodes removed (29) were histopathologically negative and the length of the neovagina was 9 cm. The patient is clinically free of disease and has satisfactory sexual life.

Conclusions: From to our knowledge, this is the first reported case of laparoscopic radical surgery combined with peritoneal reconstruction of the vagina in patients with early-stage primary vaginal cancer. We demonstrate the oncological safety and feasibility of the laparoscopic procedure which allows a quicker recovery and less postoperative morbidity as it has been demonstrated in other oncological surgeries. Sexual function preservation with a neovagina created with peritoneum is effective and technically less complex than the isolated colon segment reconstruction. The experience with this technique in patients with congenital vaginal agenesis with a long follow-up has demonstrated excellent anatomical and functional results.

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V6_05

Laparoscopic Management of Diaphragmatic Metastases in Ovarian Carcinoma

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Objective: Ovarian carcinoma frequently develops diaphragmatic metastasis. There is difficult to resect in open surgery. Laparoscopy can not only diagnose it but to resect them in minimally invasive approach.

Materials and methods: We present two patients with antecedent of ovarian cancer treated with surgery and chemotherapy, which developed diaphragmatic nodes of 3 cm of diameter in right diaphragm. In both case we made a laparoscopy to confirm diagnosis and to resect them if possible.

Results: After a paroscopic exploration of the abdominal cavity, in both cases we confirmed the diagnosis and resected the metastatic nodes including a fragment of diaphragm, we sutured the diaphragm directly in one case and with mesh in the other one. The histology showed a whole tight diaphragm invasion. Both patients returned to chemotherapy treatment in less than ten days.

Conclusions: Laparoscopic approach is good for diagnosis, staging and resection of diaphragmatic nodes in ovarian cancer and allows restarts quickly the chemotherapy treatment.

V6_06

Total laparoscopic radical hysterectomy (PIVER II–III) with pelvic lymphadenectomy in early cervical cancer

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Introduction: Laparoscopy (LSC) has evolved rapidly in the treatment of uterine malignancies. Our aim was to study the feasibility of total LSC radical hysterectomy (TLRH) for early stage cervical cancer.

Methods: We analyzed retrospectively the data of 20 patients operated in LSC for cervical cancer at our unit, a regional teaching hospital between 11/00 and 10/08. Pelvic lymphadenectomy was performed prior to hysterectomy. TLRH (Piver II and III) was performed similar as described for open surgery. 13 patients with cervical carcinoma stage FIGO IA2 (n=4) or IB (n=9) were eligible for radical LSC hysterectomy, 7 cases showed parametrial infiltration or LN metastasis. In the video presentation sequences of a TLRH will be presented.

Results: The median weight of the patients was 59 kg (49–76 kg), median operating time 258 min (154–300 min), estimated blood loss

250 ml (100–1150 ml). The mean number of LN found was 21 (13–40) and median hospital stay was 9.3 days. We observed 3 bladder infections and 1 fever of unknown origin. No late postoperative complications were registered. Median follow-up was 37 months (range, 2–63 months).

Conclusion: LSC is an excellent staging tool and total LSC radical hysterectomy with pelvic lymphadenectomy is a feasible and safe treatment. Operation time and blood-loss are similar as described for open procedures. Total LSC radical hysterectomy is technically demanding and should be performed in specialized centers.

V6_07

Laparoscopic Radical Parametrectomy-Type 3 and Type 5

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Objective: To demonstrate a minimally invasive procedure for cases where unexpected invasive cancer of the cervix is found after simple hysterectomy along with an ultra-radical procedure for cases of recurrent endometrial cancer. One standard case and one ultra-radical case, which required extensive resection and reconstructive techniques, will be presented.

Materials and methods: For cases where invasive cervical cancer or stage II endometrial cancer were discovered after simple hysterectomy, we perform a laparoscopic lymphadenectomy, then the parametria are completely isolated before being excised at the pelvic side wall. Because of post-operative fibrosis and anatomical distortion, it is difficult to dissect following the appropriate surgical plane, a vaginal cuff delineator and a vaginal cuff suspension technique (by suture) are used. Accurate dissection during this procedure is of paramount importance to avoid pelvic organ injury and incomplete resection. For recurrent cases, we need a much more radical excision in order to maintain the appropriate surgical margin because of possible extensive spread of the tumor. The presented case is a recurrent endometrial cancer case which required a radical parametrectomy with partial resection of the bladder and ureter. En-bloc resection of the parametrium, upper vagina and a part of the bladder along with the pelvic ureter is required to achieve complete removal of the vaginal and parametrial recurrence. To compensate for large urinary tract defects we use ileal substitution. All of this complicated procedure is performed totally laparoscopically.

Results: No cases required blood transfusion and no serious post-operative complications occurred. No patient experienced bowel complication and post-operative recovery was quick.

Conclusion: The laparoscopic radical parametrectomy is a long-standing theme in minimally invasive second surgery. This procedure is important for preventing under or over post-operative treatment due to accurate surgical staging. Usually in cases such as these, postoperative treatment involves radiation or chemotherapy. Radiation therapy, if combined with the re-laparotomy, has a tendency to cause extensive adhesion and bowel morbidity. In order to minimize these outcomes as much as possible, we applied our minimally invasive parametrectomy. Also, introducing reconstructive techniques makes it possible to reach a new stage in malignancy management by expanding the radicality for early invasive and locally recurrent gynecologic malignancy without increasing the invasiveness.

V6_08**Laparoscopic staging of advanced epithelial ovarian cancer**

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It has been clearly demonstrated that the prognosis of advanced ovarian cancer depends primarily on the realization of a complete surgical excision.

The preoperative evaluation is crucial, and at the present day, we do not have any imaging technique capable to predict totally the possibility of a complete surgery.

Presurgical laparoscopic staging has limitations also: inability to assess the retroperitoneum, poor assessment of diaphragmatic involvement, besides the evaluation is subjective.

We propose the use of an adapted approach to improve the valoration of most of the abdominal cavity and the Peritoneal Cancer Index as a reliable method of preoperative evaluation of epithelial ovarian cancer.

We demonstrate the effectiveness of this type of approach and how it allows an assessment to reduce the number of sub-optimal interventions.

We present a video with “Tips and Tricks” of the technique and key points to prevent incomplete surgery.