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Aims of Workshop

Laparoscopic sacropexy is considered the gold standard procedure for apical prolapse repair. Given the current controversy around vaginal mesh implants, laparoscopy may be the approach of choice for any kind of female genital prolapse. However, many professionals are not familiar with the laparoscopic approach due to limited experience and inability to suture endoscopically.

We aim to offer a preclinical course on key aspects of laparoscopic sacropexy and give a hands-on workshop on laparoscopic suturing and fixation of the mesh in a pelvic model. The delegates will be split into 2 groups. Lectures will cover Anatomical keypoints – Melendez - Procedural steps of sacropexy – Deval - Typical complications – Blaganje - Hysteropexy – Cartwright.

Learning Objectives

Everything about sacropexy

Target Audience

Urology, Urogynaecology and Female & Functional Urology

Advanced/Basic

Intermediate

Suggested Learning before Workshop Attendance

1) Sacrocolpopexy for pelvic organ prolapse: evidence-based review and recommendations.

Costantini E, Brubaker L, Cervigni M, Matthews CA, O'Reilly BA, Rizk D, Giannitsas K, Maher CF. Eur J Obstet Gynecol Reprod Biol. 2016 Oct;205:60-5. doi: 10.1016/j.ejogrb.2016.07.503. Epub 2016 Aug 3. Review.

2) Mini-laparoscopic sacrocolpopexy for apical and posterior female pelvic organ prolapse.

Blaganje M, Lutfallah F, Deval B. Int Urogynecol J. 2016 Jul;27(7):1117-9. doi: 10.1007/s00192-016-2960-5.

3) Surgery for women with apical vaginal prolapse.

Maher C, Feiner B, Baessler K, Christmann-Schmid C, Haya N, Brown J. Cochrane Database Syst Rev. 2016 Oct 1;10:CD012376. Review.

Anatomical and clinical variants encountered in laparoscopic urogynaecology

Matthew Izett-Kay

This presentation utilises numerous recorded laparoscopic videos with the aim of demonstrating a range of clinical situations that may be encountered during minimally invasive pelvic floor reconstruction. Using a methodical approach starting from port entry, through to aberrant pelvic anatomy, approaching the promontory, peritoneal dissection, and the vaginal apex, attendees will gain an understanding of how to adapt their techniques to these various situations. It will also provide a re-cap and reminder of pertinent anatomical considerations.

Anatomical key points

Joan Melendez-Munoz

1.- Before any surgery:

Know your patient – previous medical history, previous surgery, potential difficulties (BMI...)

Know yourself – understand your experience, your skills, your limitations...

Know your team – Anaesthetist, nursing staff, trainee, senior physician...

Know the surgery – understand the technique you will use and the steps involved.

2.- Visualise the surgery, mentally break it into smaller steps and approach one at the time.

Think of how you will start, what equipment you will need, which trocars, which forceps, which energy devices and which technique you will use.

Try to anticipate potential difficulties and have a plan B for them.

As much as possible, don't improvise.

3.- Trocar location is important. Think which placement is best for you, how are you more comfortable, how your assistant can be more helpful.

Then think of the anatomy of the abdominal wall: vessels, nerves, deeper structures...

Be mindful of the superficial and deep vessels.

4.- It is recommended to start at the sacral promontory. At least to identify it and confirm whether is accessible and we can attach it the mesh.

Watch for the "safe" triangle, identify the boundaries to avoid vessel or ureteric injury at that level.

Tip: If you can't see the promontory clearly, start a bit lower at the peritoneum of the pelvic side wall, open the space and make your way upwards towards the space where the promontory should be.

5.- Immediately just before the sacral promontory at the fourth lumbar vertebra (L4), the abdominal aorta and inferior vena cava bifurcate.

At the level of the sacral promontory, the common iliac artery bifurcates into external and internal iliac arteries. At the same level, the ureter crosses from lateral to medial over the common iliac artery.

6.- Common iliac artery bifurcates into external and internal iliac arteries.

At the same level, the ureter crosses from lateral to medial over the common iliac artery.

Next to them run the Common iliac veins.

7.- Mesh fixation is currently recommended at the anterior longitudinal ligament of the sacrum at this level (S1)

Care must be taken during the dissection of the sacral promontory. It is recommended to approach it from the right side just medial to the right border (right common iliac artery) of the interiliac triangle.

8.- Often we will encounter patients with high BMI and identification of structures can be challenging.

Knowing and understanding the anatomy can help preventing difficulties and injuries.

9.- Superior hypogastric plexus is a retroperitoneal structure located bilaterally at the level of the lower third of the L5 vertebral body and upper third of the S1 at the sacral promontory and in proximity to the bifurcation of the common iliac vessels.

This plexus lies to the left of midline in 75% of the patients and in the midline in 25% of the patients.

10.- The hypogastric nerve is derived from the superior hypogastric plexus.

- proprioception of the bladder, the rectum, and the uterus.
- sympathetic fibers for contraction of the urethral and anal sphincters.

Risk of inadvertent damage during dissection of promontory, the right lateral pelvic wall dissection, especially close to the base of the uterosacral ligament.

11. The ureters are approximately 25 cm in length, and half of their course is in the pelvic cavity, in the pelvic side wall. The ureters enter the pelvis at the pelvic brim (L4) and cross at the bifurcation of the common iliac artery. At the level of the ischial spine, turn forward and medially where they subsequently pass underneath the uterine artery. At this level, the ureter is 1.5 cm lateral to the cervix and then travels medially and anteriorly over the vaginal fornix to enter the posterolateral wall of the bladder.

The commonest sites for injuries: lateral pelvic wall above the uterosacral ligament posterior to the infundibulopelvic ligament near the pelvic brim base of the broad ligament where the ureter passes under the uterine artery and where it enters the bladder near the insertion of the trigone

12.- The average length of the rectum is between 10 and 15 cm, and it extends from around the third sacral vertebra (S3) to the anorectal junction, which is 4 cm away from the anus.

During right lateral pelvic wall dissection, the rectum can be mobilized to the left.

The Pouch of Douglas (POD) is an avascular space that lies between the two uterosacral ligaments.

The anterior boundary of the POD is the uterus and posterior fornix of the vagina, the posterior boundary is the rectum and inferiorly the rectovaginal fold.

The dissection through this space during laparoscopic sacrocolpopexy helps to separate the posterior vaginal wall and the rectum for the posterior attachment of the mesh.

Care must be taken during this dissection to avoid rectal injury

Laparoscopic management of pelvic organ prolapse recurrence after open sacrocervicopexy

Bruno Deval

In this narrated video we present a case of pelvic organ prolapse (POP) recurrence 12 years after sacrocervicopexy, outline our management and suggest an optimal laparoscopic surgical technique that may reduce the risk of future recurrence. A 71-year-old patient, who had undergone an open sub-total hysterectomy with sacrocervicopexy 12 years previously, complained of a bulging sensation in her vagina, of 12 months' duration. On physical examination, a Pelvic Organ Prolapse Quantification (POP-Q) stage III prolapse was diagnosed, with marked apical, anterior and posterior compartment prolapse. On laparoscopy we identified the old mesh attached to the promontory and to the vaginal apex, without any fixation of the vaginal walls. Complete mesh excision was performed, followed by vaginal dissection to facilitate implantation of two new meshes and performing a new sacrocolpopexy. No postoperative complications occurred. Over 6 weeks of post-operative follow-up, there was no pelvic pain, dysuria or dyschezia. A good anatomical result was noted without any prolapse. Laparoscopy appears to be an effective approach to complete mesh excision. For the treatment of prolapse recurrence, complete excision of the old mesh with new pelvic mesh-augmented reconstruction is recommended. Thorough dissection of the vesico-vaginal and recto-vaginal spaces followed by mesh fixation to the relevant vaginal walls may reduce recurrence.

Laparoscopic ventral rectopexy using a synthetic mesh

Bruno Deval

Rectal prolapse is the bulging of the rectum into the digestive lumen and ultimately exteriorization through the anus. It affects approximately 0.5% of the population and women are more frequently affected than men (female to male ratio 6/1) mostly the elderly ones. Furthermore one woman in eight has a mixed rectal and genital prolapse. The true incidence of this disease is unknown because it is often unreported especially when associated to fecal incontinence that also affects 1 to 18% of the general population. Rectal prolapse is associated with major psychological discomfort and embarrassment, then the treatment is mandatory to improve women's quality of life.

Many surgical techniques can be indicated for the treatment of rectal prolapse. Some are abdominal and others use the perineal approach. Abdominal rectopexy can be performed by open or laparoscopic techniques, using an anterior or a posterior approach. The choice of the appropriate surgical technique for rectal prolapse correction depends on several components.

Ventral mesh laparoscopic rectopexy is indicated for the treatment of full-thickness rectal prolapse of any stage. It consists of anterior mobilization of the rectum with fixation of the mesh on the distal rectovaginal septum then stretching it towards the promontory which allows the elevation of the pelvic floor. With this technique, the dissection is maintained anterior between the anterior rectal wall and the posterior vaginal wall, in order to spare the hypogastric and the inferior rectal nerves. The prosthetic mesh along with the normal innervation will restore the normal bowel function. In early stage disease, dynamic magnetic resonance imaging or a defecography may be needed to confirm the diagnosis. Solitary rectal ulcer syndrome is also an indication for ventral rectopexy. It consists of bleeding, mucosal discharge and pelvic floor dysfunction.

The laparoscopic approach of ventral rectopexy is associated with better postoperative outcomes (less pain, faster discharge) and most importantly same rates of recurrence compared to the open abdominal technique. Studies showed high rates of functional improvement (74 to 91%) and low rates of recurrence (2 to 8%). Higher rates of relapse were observed in the male population. Despite the fact that postoperative defecatory disorders can be common 60% of patients reported an improvement in fecal incontinence after the intervention. Five years follow-up studies showed less than 5% of relapse associated with improvement in the bothersome symptoms (fecal incontinence, dyschezia). Moreover, ten years follow-up studies showed 3 to 4% of recurrence and 4.6% of mesh related complications. Furthermore, one woman in eight has a mixed rectal and genital prolapse. In these cases, the laparoscopic ventral rectopexy should be associated to hysteropexy according to the surgical

technique described in the appropriate chapter before. The combined surgery has the same rate of long-term recurrence compared to the isolated correction of rectal prolapse.

Rectal prolapse is a common condition that is associated with many bothersome symptoms and major psychological discomfort and embarrassment. Laparoscopic ventral rectopexy is a reconstructive pelvic surgery technique that can be performed by visceral surgeons as well as gynecologists in colorectal and pelvic floor clinics to improve women's quality of life.

Minimally-invasive Sacrocolpopexy: tips and tricks

Elisabetta Costantini

Sacrocolpopexy is considered a reference operation for pelvic organ prolapse repair and an important option in the armamentarium of the female pelvic reconstructive surgeon. After the introduction of minimally invasive techniques the number of procedures has increased significantly all over the world due to the excellent anatomical and functional results with durable results in the time comparable to the abdominal techniques. During the procedure, different shaped meshes are attached from the anterior longitudinal ligament of the sacral promontory to the anterior and posterior vaginal vault. This provides robust prolapse repair, with high success rates of 78–100%, especially for the apical compartment. The best results, however, are obtained by expert surgeons and in this workshop I describe the principal steps underlining the tip and tricks for each step.

The different phases of the procedure are shown by short videos.

Two learning objectives:

- To demonstrate the anatomical key points and the surgical tips and tricks
- To show the principal surgical steps to avoid complications and to obtain the best anatomical and functional results

Laparoscopic Approaches to Fistula Management

Jerome Melon

A discussion on the management of fistulas and the role of the laparoscopic approach in treating them, including a review of the literature surrounding this approach, considerations of when the laparoscopic route may be beneficial, and its advantages and disadvantages. We also showcase a surgical video demonstrating the laparoscopic repair of a vesico-uterine fistula to demonstrate surgical techniques.

Posterior mesh fixation - when, where and how?

David Atallah

Pelvic organ prolapse is a major health problem. It affects 50% of parous women, causing a significant negative impact on their quality of life. Women may present with signs of urinary, bowel and sexual dysfunction along with the sensation of a bulge and discomfort caused by the prolapse.

Surgical treatment is indicated for all symptomatic patients. Its main goal remains the amelioration of their quality of life.

Nowadays, the procedure of choice for the treatment of genital prolapse is laparoscopic sacrocolpopexy. Studies showed that anterior mesh suspension with and without vaginal colpoperineorrhaphy was associated with recurrence or de novo posterior compartment prolapse in 16% of the cases.

We believe that posterior mesh fixation in sacrocolpopexy should be systematically applied. Its main target is to reinforce the rectovaginal closure, thus it should be positioned tension free.

The posterior mesh is fixed to the levator ani muscles or the posterior vaginal wall, then it is stretched gently toward the promontory where it is fixed with non-absorbable sutures.

Laparoscopic sacrocolpopexy using an anterior and posterior mesh is the procedure of choice for the treatment of pelvic organ prolapse. It is a procedure with a long learning curve, but the operative time decreases through time and experience.

Laparoscopic meshless hysteropexy

Arvind Vashisht

There have been a myriad of different surgical treatments for uterine prolapse over the years. It is clear the vaginal apex drives much of the generation of prolapse type symptoms. Vaginal hysterectomy was historically the treatment of choice although the concomitant support of the apex is of primary importance in reducing the risk of subsequent vault prolapse.

With an increased focus on supporting the vaginal apex, there has been much work on keeping rather than removing the womb as the primary method of treating uterine prolapse. This is the concept behind uterine preservation surgery, hysteropexy. This also resonates with many women's desire to keep the uterus even if not just for fertility reasons. It is also postulated that by preserving the uterus there may be less damage to endogenous supporting structures, nerves and blood vessels, which potentially will lessen the chances of recurrence and adverse functional bowel and bladder symptoms.

The use of mesh to support the uterus has been successfully used in mainstream practice, for almost 20 years. There is favourable data for the laparoscopic wrap round mesh hysteropexy compared to other forms of uterine support, even when compared to the former gold standard of vaginal hysterectomy. There was growing evidence for the success of this technique, with good long-term data as well as high patient satisfaction rates with low risk of significant complications. Despite this, there

has been growing medical and patient concerned about the use of mesh in gynaecological practice and this has driven the quest for innovative techniques to treat the common problem of uterine prolapse.

This presentation shows one such technique, the mesh-less hysteropexy, whereby there is a coming together of different techniques used to support the apex. Attention is given to reinforcement of the key uterosacral ligament structures as well as using the sacral promontory as a bony anchor to suspend the uterus. A combination of dissolvable and permanent sutures are used in this technique.

Key messages:

1. the importance of the apex in treating uterine prolapse
2. the important anatomical structures to reinforce during uterine suspension procedures
3. the value of being able to abdominally/laparoscopically visualise the key structures and to obtain superior support

Laparoscopic Colposuspension

Natalia Price, Consultant Urogynaecologist, UK

Laparoscopic colposuspension is one of the first minimal access operations for treating stress urinary incontinence in women and it is rapidly gaining popularity. A variety of approaches and methods are used for this procedure.

As with other laparoscopically performed operations, laparoscopic colposuspension leads to a quicker recovery time, but takes longer to perform and may be associated with more surgical complications. If it is performed, it appears to be more effective to insert two paravaginal sutures than one.

The long-term outcome of laparoscopic colposuspension is uncertain. Currently available evidence suggests that, in terms of subjective cure of incontinence within 18 months, there is little difference between laparoscopic colposuspension and open colposuspension, or between laparoscopic colposuspension and midurethral sling procedures. Much of the evidence is low quality, meaning that a considerable degree of uncertainty remains about laparoscopic colposuspension.

The place of laparoscopic colposuspension within clinical practice should become clearer when ongoing trials are reported and when there is more data available describing long-term success rate.