

Surgical Treatment of Advanced Urogenital Prolapse Using Transobturator Cervicocolpopexy

Surgical management of the advanced urogenital prolapse using a technique that involve the use of only one polypropylene mesh combined with the classic technique of colpoperineoraphy

**Gheorghe Bumbu¹,
Mihail-Claudius Berechet²,
Adrian Bumbu³,
Claus Schulte-Uebbing⁴**

1. MD, PhD, Romania, Oradea Urology Clinic
2. MD, Romania, Oradea Urology Clinic,
3. MD, Romania, Oradea Urology Clinic
4. MD, PhD, Deutschland, Frauenarzt und Geburtshilfe München (Altstadt-Lehel)

Correspondence:
Mihail-Claudius BERECHECH, MD
e-mail: berechet.mihail@yahoo.com

Abstract

In the treatment of advanced urogenital prolapse the princeps procedure consist in strengthening the anterior and posterior compartments and fixation of the vaginal apex using two polypropylene meshes (inert material easily incorporated and accepted in the tissues of a patient). This procedure was used in Oradea Urology Clinic (67 procedures in 5 years) each time when a patient was able to afford the price of the implant. Between April 2010 and December 2010 a new procedure was performed on 9 patients with advanced urogenital prolapse using only one synthetic implant in combination with the colpoperineoraphy classic technique. After the initial experience the use of this technique compare to the princeps procedure stress out the reduced number of intra and post operatory complications (hemorrhage, erosions) determined by the less number of trajects (four instead of six), offering in the meantime a better financial solution for the patient (the financial costs are supported by the Romanian state insurance system).

Keywords: transobturator cervicocolpopexy, advanced urogenital prolapse, polypropylene mesh

Introduction

Polypropylene mesh for advanced urogenital prolapse technique involves fitting up one subvesical mesh with the role of strengthening the anterior vaginal wall and another prerectal one to both reinforce the posterior vaginal wall and fixate the vaginal apex to the sacrospinous ligament⁽¹⁾. Those synthetic implants are resistant, definitive and determine a minimal foreign body reaction being embedded in the surrounding tissues within 3-4 weeks.

Therefore, these interventions require two switches of polypropylene with a different configuration supplied by different companies.

The subvesical mesh (the anterior compartment) has four arms (two with a transobturator trajectory through tendinous arch of endopelvine fascia just retropubic and the other two just before ischiadic spine through or above tendinous arch of the levator ani). There are also surgeons using six arms implants for the anterior compartment.

The 2 (two) arms of the prerectal mesh may be short (in this case they must be joined to the sacrospinous ligament) or long (in which case they must perforate the sacrospinous ligament).

So, in order to attach the mesh through the 6 (six) arms (three on each side) it is necessary to use special

devices (tunnelers) in order to form 6 trajects (4 (four) through obturator foramen, and 2 through ischioirectal fossa of each side)^(2,3). Ischioirectal fossa enter point is given by a bilateral para-anal skin marker (figure 1).

Due to the high costs this textbook intervention is used when the patients are able to afford it.

Creation of 6 (six) tunnels (trajects) are maneuvers that are not risk-free during surgery (mostly hemorrhage risks) and also post surgery. Mounting



Figure 1. A - ischioirectal fossa point of entry

two meshes can lead to cartoning and can increase up to 50% the risks of vaginal erosions together with major sexual intercourse difficulties.

Material and method

Therefore a new technique, combining the modern procedure of synthetic implant with a classic one (levator ani mioaphie plus reconstruction of the tendinous center), is presented in the following pages.

Only one 4 (four) arm polypropylene mesh is necessary (financial costs supported by the Romanian state insurance system) which solve in the same surgery not only the high grade cystocele (lateral, central or mixt defect) but also the fixation of the cervix and or vaginal apex by the inferior arms of the mesh. These are necessary in order to prevent the loss of support from the vaginal apex correlated with the loss of the support from the anterior wall.

Surgical technique

Spinal anesthesia is performed on the patient in classic gynecological position. The vaginal wall is incised from the urethrovesical junction up to the cervix or up to the hysterectomy scar. The isolation of the bladder from the bladder mucosa, apex and cervix follows shortly. The lateral dissection (paravaginal) must reach 9 to 10 cm retropubic and pararectal all to the ischiatic spine. The breaches of the pubocervical fascia should be sutured on the median line whenever is possible (figure 2).

The opening of the peritoneum and solving an anterior enterocele (if it is the case) should be done at this moment using the classic technique (figure 3).

Mounting a "tension free" polypropylene mesh should be done following a few steps in strict relation with known anatomical landmarks:

- fixation of the superior half margin of the mesh to the urethrovesical junction using 3.0 vycril suture followed by another two lateral sutures to the pubocervical fascia in order to avoid shifting;
- subvesical unfolding of the mesh and its fixation at vesico-uterin pouch using three 3.0 vicryl to the pubovesical fascia;
- continuous unfolding of the mesh and its fixation to the anterior surface of the cervix on the median line using 0 vicryl. The unfolding of the mesh on to the cervix is possible due to the excess material of the mesh (figure 4).

In case of a vaginal vault prolapse the mesh will be fixated with 2 (two) marker sutures to the vaginal apex. All apical and all posterior wall support is lost in this case leading to a complet eversions of the posterior wall. The uterosacrat ligaments are better to be used in this case only if they are still resistant.

Dealing with the arms of the mesh assumes better knowlodge of some anatomical landmarks (figure 5).

- the superior arms will be led retropubical and over the ATFE with the help of special devices (tunneler system) (figure 6);

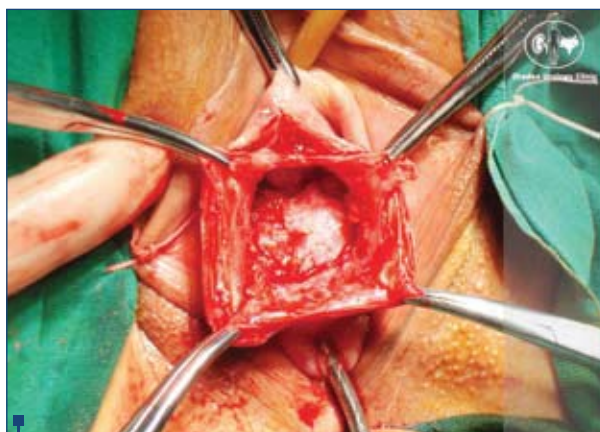


Figure 2



Figure 3. Previously enterocele surgery



Figure 4

- the lower arms will be led (using a device of a different kind) through or over ATRA penetrating the internal obturator muscle ahead of the ischiatic spine (figure 7);
- the lower arms of the mesh will be pull on in order to align the cervix or the vaginal apex to the level of the ischiatic spine followed next by the subcutaneous fixation of the arms at the point of entry. This maneuver will be performing only after

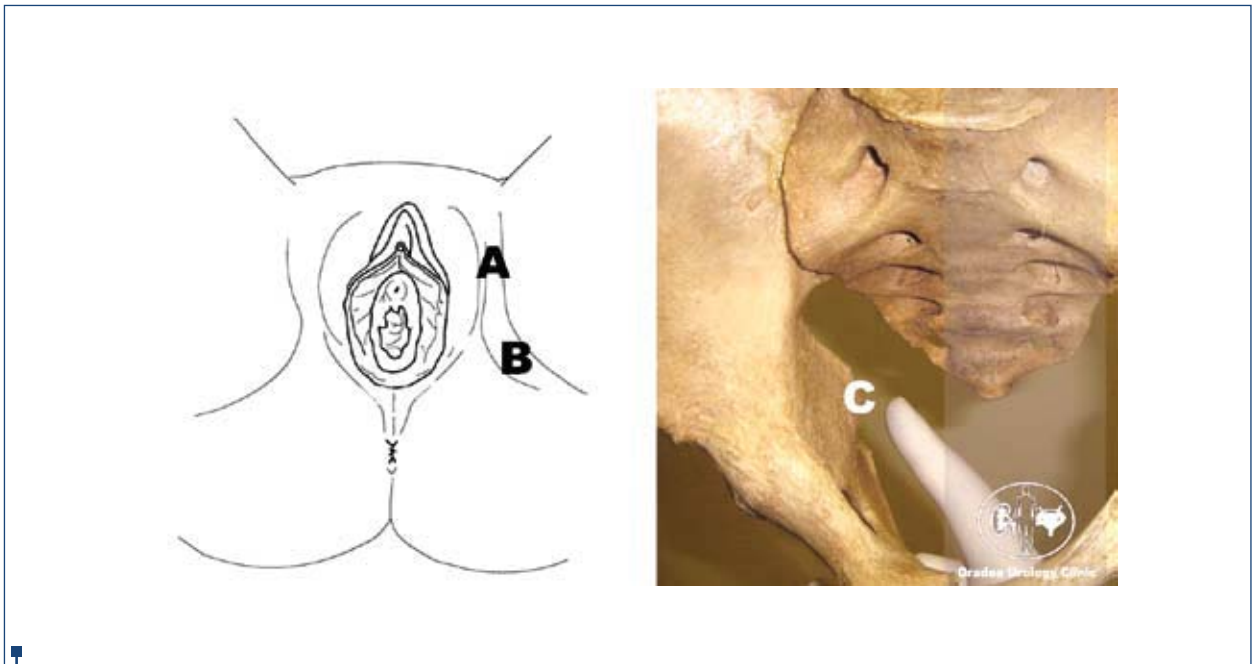


Figure 5. Anatomically landmarks. A - first obturator point of entry (conjunction point of urethral line with the lateral margin of the descending branch of pubic bone). B - second point of entry (3 cm lower and 1 cm lateral). C - ischiatic spine

posterior myoraphy and after reconstruction of the tendinous center (perineal body) (figure 8).

Results

9 (nine) patients (average age 71) were surgically treated using the technique described above between april - september 2010.

No intraoperative incidents were recorded. Post operative evolution was normal for this kind of procedures (perianal pain linked to the reconstruction of the perineal body was recorded on two patients).

Following 48 hours Foley catheter removal, all patients have resumed normal micturition without difficulties or postmictional residue. No urinary incontinence procedures were performed on these patients.

The procedure is still under time evaluation dealing with the fact that the longest post operative follow-up is only 9 (nine) month on a 62 old patient with very good results until now (well sustained apex, resilient perineal body and flexible vagina with length and orientation proper for normal sexual intercourse).

This procedure offers also a better financial solution for the patient (the financial costs being supported by the Romanian state insurance system).

Discussions

Almost every woman with symptomatic prolapse presents level one loss of support - paracolpium (uterosacral ligaments, cardinal ligaments).



Figure 6



Figure 7

A grade 3 or 4 cystocele (after POP-Q) is clinically manifested.

The vaginal wall at a nulliparous is harsh, and the quality of the insertion of the anterior wall to the ATF could be verified with palpation of the two indentations at 2 and 10 hours marks. The loss of the anterior wall harshness equals to the loss of the subjacent fibro muscular tissue.

“Aa” point is located at 3 cm from the urethral meatus (urethro vesical junction) at a nulliparous. At a woman that gives birth vaginally the “aa” or the “ap” point is located at the level of the hymen.

The need for restoration genital hiatus is suggested by clinical examination and is facilitated by the levator ani muscle complex. When this muscle group is functionally underdeveloped one can observe at clinical examination a large vaginal opening easily palpated when performing vaginal touch, an opening that could or could not coexist with other lesions of the perineal body (figure 9).

The perineal body of a nulliparous is well developed and the distance from meatus to anal orifice is shorter compared to multiparous (3 cm).

The surgical approach of the perineal body plays an important role in the overall surgery of the prolapse. It must be correctly rebuilt in order to have the necessary supporting strength and to avoid post operative dyspareunia. The lengthening of the perineal body must represent in this case a target for the surgeon due to the importance of the cosmetic aspect along the functional one.

The suture and the attachment of the vagino-rectal septum to the perineal body, whenever is possible, is also important in order to establish more resistance and to ensure a good defecation.

Clinical examination and vaginal touch can often point out a posterior commissure skin bridge (due to previous inappropriate surgery) that can hide the integrity of the perineal body. Those patients show dyspareunia and a permanent pressure due to the prolapsed organ (figure 10).

In the surgical strategy, the history and clinical examination of the patient is very important followed by identification of the urinary disorders including urinary incontinence and transit disorders. Many times these patients must deal themselves with their cystocele in order to urinate or their rectocele in order to defecate.

Urogenital prolapse and urinary incontinence goes together due to pelvic denervation that determined functional dysfunction in both of the above. Pudendal nerve neuropathy, conjunctive tissue defects, loss of tissue elasticity due to aging, all of those had a major impact on urinary incontinence and urogenital prolapse. Some patients show no incontinence due to obstruction or are not able to void their bladder; some had incontinence and then when the prolapse advanced the urinary incontinence stopped. Unfortunately, today there are still patients with urinary incontinence after anterior colporaphy for cystocele⁽⁴⁾. ■

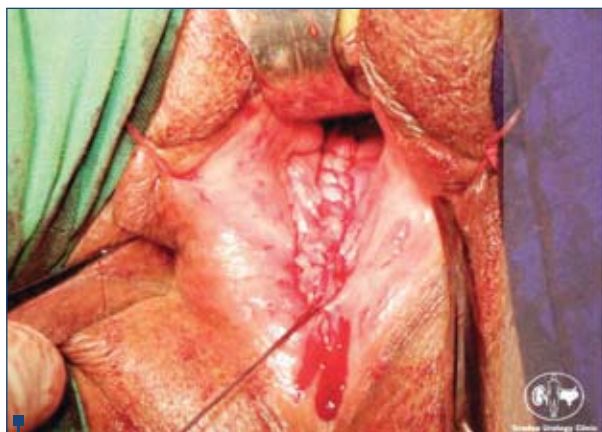


Figure 8



Figure 9



Figure 10. Skin bridge at the posterior commissure

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