

Infracocccigeal sacropexy and sacrospinous fixation in the treatment of masive enterocele and posterior fornix syndrome

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Abstract

Enterocele is a pelvic floor disorder that can lead to posterior fornix syndrome: urgency, frequency, nocturia, pelvic pain, difficulties in emptying the bladder. Infracocccigeal sacropexy is a minimally invasive procedure that offers support of the vaginal vault, and reattaches the vagina to the levatorial plate. Sacrospinous fixation is also a minimal invasive technique that ensures a very solid suspension of the vaginal vault. It is presented the case of a 61 years old woman with voluminous enterocele and posterior fornix syndrome. A bilateral sacrospinous fixation and an posterior vaginal slingplasty were performed; this combined technique was not described in literature before. The urinary diary is the best tool for the evaluation of the severity of the posterior fornix syndrome symptoms and was completed before and after surgery. Significant improvement after surgical treatment was observed.

Keywords: enterocele, posterior fornix syndrome, sacrospinous fixation, posterior intravaginal slingplasty

Introduction

Enterocele is a pelvic floor disorder that is anatomically represented by a prolapse of the vaginal vault, and clinically can determine a complex of symptoms: urgency, frequency, nocturia, pelvic pain and difficulty in emptying the bladder, called posterior fornix syndrome^(4,5). No correlation between the size of the enterocele and severity of symptoms has been found so far⁽³⁾.

Infracocccigeal sacropexy, also known as posterior IVS (intravaginal sling), is a minimally invasive procedure, performed by transvaginal route, which consists in inserting a polypropylene mesh, via ischioirectalis fosses that suspends the vaginal vault. This tape recreates a part of the uterosacral and cardinal ligaments.

A review of the anatomical landmarks, especially of the suspension system of the vagina, which is the cornerstone of pelvic static disorders, is welcomed. According to De Lancey, there are 3 levels vaginal suspension^(2,3).

Level I: the higher paracolpos, includes the first 2 to 3 cm of the vagina. Suspension at this level is ensured by the continuity of fibers found in uterosacral and cardinal ligaments, fibers opposing the eversion of the vaginal vault. Thus the upper vagina is suspended by a conjunctive tissue to the pelvic walls^(1,2). Damages at this level are responsible for the posterior fornix syndrome symptoms. This is the level that we have to restore in order to cure the enterocele and the posterior fornix syndrome.

Level II: ensures the suspension of the vagina to the tendinous arch of the endopelvic fascia.

Level III is provided by the connective fibers that merge with the tendinous center of perineum and perineal membrane⁽³⁾.

Thus the vagina is connected to the pelvic walls and levatorial plate, being held tight as a trampoline that supports the bladder base⁽³⁾. This is an extremely important aspect, because bladder base is an area with an essential role in triggering micturition. A lack of support in this area will determine a premature reflex of micturition, triggered before the complete filling of the bladder (frequency, urgency)^(3,5).

Technique: For the insertion of the posterior IVS (intravaginal sling) tape a colpotomy under the cervix and dissection of both pararectal spaces is necessary. The ischial spine and sacrospinous ligaments are identified. The passage of the needle must be 2 cm medial to the ischial spine, in order to avoid pudendal artery injury^(1,4). The tape is inserted, then sutured to the vagina. The edges of the tape are brought out 2- 3 cm posteriorly and laterally to the anus.

For the sacrospinous fixation: 2 polypropylene threads are passed trough the sacrospinous ligaments, using the Sacrofix device. Those threads are then passed trough the IVS tape. When tensioned, the sacrospinous threads are lifting the IVS tape and the vaginal vault ensuring a proper and most important, physiological suspension.

Case report

It is presented the case of a 61 years old woman (3 vaginal deliveries) with voluminous enterocele.

The patient reported pelvic pain, nocturia (4-6 episodes per night), urgency, frequency, but no urinary stress incon-

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tinence. She was invited to fill in the urinary diary each day for a week (Table 1).

The patient had 3 vaginal deliveries and presented no chronic disease. She had a body-mass index of 30 (obese). Blood pressure, blood cell count, glycemia and urinalysis in normal parameters. Also urine culture was performed and found sterile. The patient reported to be sexually active.

Abdominal ultrasound exam was performed and residual urine after voiding was found.

A gynecological exam was performed: a big bulge of the posterior vaginal wall was noticed, the cervix and anterior vaginal wall had normal aspect.

A bilateral sacrospinous fixation and posterior IVS were performed. The postoperative evolution was very good, urinary probe was removed after 12 hours and the patient was discharged 24 hours after surgery.

For the assessment of the surgical treatment efficiency the patient was asked to fill in the urinary diary again (Table 2). We noticed significant improvement: no more nocturia, urgency and frequency, and disappearance of the pelvic pain.

We repeated the ultrasound exam after voiding, and no more residual urine was found.

Discussions

Vaginal vault prolapse with enterocoele occurrence can be found both in patients with uterus in place, as well as at those with total hysterectomy.

Total hysterectomy with removal of the cervical ring and damage to the vascularization of the uterosacral ligaments is a risk factor for the occurrence of vaginal vault prolapse^(1,3,7).

Vaginal delivery is also a contributing factor to generate the vaginal vault prolapse⁽¹⁾.

Using of the urinary diary is indicated for the accuracy of diagnosis, especially in order to assess frequency, urgency and nocturia.

In this particular case, we decided to combine the infracoccygeal sacropexy and bilateral sacrospinous fixation in order to provide a long term support for the vaginal vault, at a rather young and sexually active patient. We also considered that the minimally invasive, vaginal route is the best

Table 1 Urinary diary before surgery

No.	Hour	Urinary vol.	Whitout imp.	Small imp.	Big imp.	Loss
1	6:45	100		x		-
2	7:30	100		x		-
3	8:30	150			x	x
4	9:15	100	x			-
5	10:00	100		x		-
6	11:40	200			x	x
7	13:00	200			x	-
8	14:10	150		x		-
9	15:00	100		x		-
10	15:45	100			x	-
11	16:30	150			x	-
12	18:00	200			x	x
13	19:10	150		x		-
14	20:30	150			x	-
15	22:00	200		x		-
16	23:30	200			x	-
17	02:10	150		x		-
18	04:30	100			x	-
19	06:00	150			x	-
20						

Table 2 Primary diary after surgery

No.	Hour	Urinary vol.	Whitout imp.	Small imp.	Big imp.	Loss
1	06:50	150		x		-
2	09:20	250		x		-
3	11:30	200	x			-
4	13:45	250	x			-
5	15:15	250	x			-
6	18:00	300		x		-
7	20:15	250	x			-
8	22:50	300		x		-
9	02:20	200				-
10	06:00	250	x			-

option for an obese patient. The Integral Theory, issued by Petros, highlights that it is necessary to correct the anatomy in order to restore the function⁽³⁾. In our case, we wanted to tailor our surgery according to the Integral theory.

What did we obtain performing a sacrospinous fixation and a posterior IVS in his case:

- anchoring the vaginal vault ensures a proper support of the bladder base;
- better support of the bladder base → avoids triggering premature micturition reflex (no more frequency, urgency and nocturia)^(5,6);
- reattaching the vaginal vault to the levatorial plate → disappearance of bladder evacuation disorder^(7,8).
- a decrease in the tension of the uterosacral ligaments, that cures the pelvic pain⁽⁸⁾.

The outcome in this case was very good, the anatomy was corrected and the symptoms disappeared.

Using the polypropylene mesh for added strength in the restoration of pelvic statics has gained ground lately and it seems a promising solution. It remains to evaluate the importance of vaginal erosion phenomena.

The technique described is a minimally invasive one, allowing a quick recovery and short hospitalization.

Filling in the urinary diary becomes a mandatory step in the evaluation of posterior fornix syndrome.

For our particular case we used a combination of sacrospinous fixation and posterior vaginal slingplasty together, we did not find a description of this combined approach in literature. The use of combined anterior vaginal wall mesh with one of those two techniques: sacrospinous fixation or posterior intravaginal slingplasty for uterovaginal prolapse was described by some authors⁽⁹⁾. In our case, we had no anterior vaginal wall prolapse, only a big enterocele, so we used a different technique. We consider our approach superior

to the sacrospinous fixation with mesh interposition for vaginal vault repair described by other authors⁽¹⁰⁾, because in our case the arms of the posterior sling are passed through the muscular plane, reconnecting the vagina to the levatorial plate and offering a better pelvic floor physiology.

Conclusions

A detailed history and careful clinical examination can differentiate between overactive bladder and enterocele with posterior fornix syndrome. The combined bilateral sacrospinous ligament fixation and posterior intravaginal slingplasty that was not described in literature before, restored the anatomy, but also offered good results in terms of pelvic floor physiology. Some of the patients diagnosed and treated for overactive bladder may have surgically treatable anatomical defects. ■

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