Vesicovaginal fistula: A complication after colposacropexy

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ABSTRACT

Mortality and morbidity due to surgical complications in the field of gynecological surgery have decreased considerably during last years but early clinical diagnosis and treatment are decisive for these patients' survival. Herein is reported a case of vesicovaginal fistula as a surgical complication of colposacropexy.

A case of a 54 years old woman who underwent a subtotal hysterectomy and promontofixation with placement of an ALYTE® Y-Mesh who developed a vesicovaginal fistula. A conservative treatment was attempted at first, but due to its failure, the patient had to be reoperated to correct the defect.

Although postoperative complications can be diminished with a good knowledge of anatomy as well as good exposure sometimes can be unavoidable and may even go unnoticed. The morbidity of patients to these unforeseen depend on a correct diagnosis ideally intraoperatively and a correct management.

Key Words: Colposacropexy; Vesicovaginal fistula; Surgical complications

BACKGROUND

Fistulas are one of the most feared complications in gynecological surgery and more than 50% of them occur after hysterectomy, for benign causes. Although the true incidence is unknown, it has been estimated at around <1% (1).

The consequences of fistula can be painful and disabling, hence the importance of carrying out a proper diagnostic evaluation and repair either by conservative or surgical treatment. The main complication of surgery is the recurrence of the fistula (2).

Herein a case of a patient diagnosed with cystocele, rectocele and uterine prolapse, who underwent subtotal hysterectomy and placement of mesh for promontofixation, subsequently presenting with a posterior vesicovaginal fistula (VVF), as a post-surgical complication. With this clinical case our objective is to try to unify the steps to follow to this type of complications and to review the recent literature on the diagnosis and treatment of fistulas.

CLINICAL CASE PRESENTATION

A 54-year-old patient with no known drug allergies, BMI of 22 kg/m², blood group O+, menarche at 13 years old and carrying a Mirena IUD. Her past medical history includes previous hysteroscopic myomectomy, tubal ligation, tonsillectomy and two vaginal deliveries, one of which was a twin pregnancy.

Family history includes maternal hypertension as well as dyslipidemia.

The patient complained of having symptomatic uterine prolapse for two years. Physical examination revealed a grade 2 cystocele, a grade 2 rectocele and a grade 3 uterine prolapse with vulvar dehiscence and a normal vaginal examination. A subsequent urodynamic study was normal and the patient went on to have a laparoscopic colposacropexy.

Subtotal hysterectomy and promontofixation with placement of an ALYTE® Y-Mesh were performed. The mesh was fixed by two sutures to the pubococcygei, a stitch on the vaginal surface, two fastening stitches on the vaginal anterior fascia and uterosacral ligaments and a final stitch on the puborectalis. The mesh was fixed by two sutures to the vaginal anterior fascia and uterosacral ligaments and a final stitch on the puborectalis, a stitch on the vaginal surface, two fastening stitches on the vaginal anterior fascia and uterosacral ligaments and a final stitch on the puborectalis, a stitch on the vaginal surface, two fastening stitches on the vaginal anterior fascia and uterosacral ligaments and a final stitch on the puborectalis, a stitch on the vaginal surface, two fastening stitches on the vaginal anterior fascia and uterosacral ligaments and a final stitch on the puborectalis.

A month later the patient was systemically well and her only complaint was of stress urinary incontinence. On physical examination, the vaginal defect was minimal and inflammation had completely disappeared. Treatment with Silodosin 10 mg and a further checkup one month later was recommended. When she came back she reported continued urinary incontinence. The examination showed that the vaginal defect had closed, with no further obvious complications from the wound site. A CT scan was requested for evaluation of the urinary tract which revealed a vesico-vaginal fistula medially orientated and above the superior to the ureteral meatus, which radiologically did not appear to be affected (Figure 2).

The patient came 15 days later reporting decreased leucorrhoea but had persistent pain.

Micturition remained normal. On physical examination, decreased size of the suture dehiscence was observed. The MRI revealed a 44 × 26 × 8 mm hyperintense collection in the posterior fornix of material which had spread into the abdominal cavity (Figure 1). Due the patient's satisfactory progress overall, it was decided to continue with the conservative treatment and a new follow-up appointment in a month was scheduled.

Figure 1) MRI revealing a 44 × 26 × 8 mm hyperintense collection in the posterior fornix

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Due to these findings she underwent a cystoscopy where a small fistulous tract between fundus and posterior wall and away from both ureteral meatus was observed. Both edges and ureteral jets were normal (Figure 3) so a conservative approach was used, with the insertion of a permanent vesical catheter and further follow-up in one month with CT urography.

The CT did not reveal any changes (Figure 4), so a final surgical laparoscopic correction of the fistula in combination with the Urology Department was decided with prior catheterization of the left ureter. The procedure started with a cystoscopy which revealed a fistulous tract in the posterior vesical wall 2 cm away from the left ureteral meatus. A catheter was inserted into this meatus and a further one through the fistulous tract emerging in the vagina.

Laparoscopy demonstrated the absence of adhesions and inflammation, and correct placement of the mesh was observed. We proceeded to fill the bladder with saline solution mixed with methylene blue solution and a transverse incision was performed on the bladder peritoneum 1 cm above the cervix to find the correct dissection plane between the bladder, and the mesh on the cervical stump. A central dissection was made towards the cervix until the mesh was seen. Once located, the dissection was continued over its surface until the posterior bladder wall was completely released. The inserted catheter was observed through the fistulous tract revealing both vaginal and bladder openings which allowed the continuation of the dissection between both orifices until healthy tissue was identified. After sectioning the catheter through the fistula, the vaginal orifice was enlarged by excising scar tissue until healthy edges were identified. This was sutured with simple absorbable stitches. The same procedure was carried out with the bladder hole, and the bladder was filled again with methylene blue solution verifying its physical integrity. Finally, an omentoplasty was performed between the two sutures to prevent recurrences. The patient was discharged four days after the surgery, once the ureteral catheter had been removed by the Urologists. One month later, a cystography was performed which was normal and the urinary catheter removed. All subsequent check-ups were normal.

The information given in this case report has the approval of our institutional IRB.
of the communication but also maintain proper bladder and vaginal capacity and adequate urinary continence.

In 10% of cases the fistula closes spontaneously after approximately half to two months with bladder catheterization and anticholinergic treatment, especially if the fistula is small, detected in time, and if no epithelialization has taken place.

Electrocoagulation, electrofulguration or sealing fibrin are options that have been considered in cases of late diagnosis with evidence of epithelialization of the fistula, although in cases of complex VVF or those with moderate inflammation such techniques have shown indeterminate results, and even the possibility of extending the defect and devitalization of adjacent tissues. Unfortunately, in most cases this type of conservative treatment often fails, as with the case of our patient.

In cases where the diagnosis is not conducted in the first 48-72 hours it is recommended to delay the correction between three and six months allowing for the reduction of inflammation and edema, and serial checkups must be performed until the optimal date of repair is established. A hasty correction may have negative consequences.

In the case of our patient a conservative approach with antibiotics, anti-inflammatory and anticholinergic therapy was first tried. However, the presence of a non-repair defect, likely secondary to the presence of a high degree of inflammation, required us to perform serial follow-ups until surgery was indicated, four months after the initial intervention.

There is no single optimal surgical approach for patients with VVF. Whether a vaginal, open abdominal or laparoscopic approach is used, will depend on both the clinical context of the patient and the surgeon's experience.

The excision of the fistula should be carried out, followed by layered closure and placement of an omental flap that will maintain the bladder and vagina separated, as well as will provide neovascularization at this level.

The presence of urinary leakage immediately after the repair will be the most important negative prognostic factor (11).

The UVF usually resolve by conservative treatment with percutaneous nephrostomy or double J catheter. If this fails, or in the case of more complex fistulas, abdominal surgical repair may be required.

Finally, in UVVF, a urinary catheter should be placed until the inflammation subsides as although spontaneous healing is uncommon, conditions will be more optimal for a good correction.

Bladder injuries are another feared complication with an incidence of <3% in gynecologic surgeries, incidence being similar in laparoscopic and conventional surgery (12).

They usually occur more frequently than ureteral injuries but the intraoperative diagnosis is also higher due to gas output through the urinary catheter, the evidence of the vesical balloon or by a verification cystoscopy. Rarely they occur during entry into cavity but if this occurs, it is usually during placement of suprapubic trocar.

If detection is immediate, bladder suture with simple or continuous stitches with absorbable material must be performed and a permanent urinary catheter for 7-10 days should be placed.

Those not identified intraoperatively are usually secondary to thermal injuries during dissection, presenting as urinary ascites, pain, oliguria, nausea, vomit, abdominal distension and increased creatinine. Most cases will be resolved with a urinary catheter for 1-2 weeks and surgery should be considered in cases with no improvement.

It has been shown that over 75% of ureteral injuries are secondary to gynecological surgery with an incidence of <2%. Are about preventable injuries if anatomy and most frequently damaged locations are well known such as the infundibulum-pelvic ligament, the uterosacral and at the junction of uterine vessels. The continuous display of the ureter and ureteral dissection whenever necessary contribute to reducing these complications.

The treatment is based on placing a doble J stent or in specific cases an end-to-end anastomosis or ureteral reimplantation (depending on the distance to the bladder) (13).

CONCLUSION

To conclude, although the real incidence and impact of all the complications reviewed during the article is not exactly known due to the imprecise definitions and variations in population the importance of conducting an early diagnosis and management is obvious. There is no single pattern or a single optimal treatment or surgical approach if needed hence the importance of individualizing each case. Resolving the defect is not only the objective but also that the patient must be guaranteed a correct capacity and quality of life.

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