Results in treatment of vesico-vaginal fistulae

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Abstract

Introduction and objectives: the indications for surgical approach and the results of the surgical treatment in vesico-vaginal fistulae occurring in gynecologic surgery are analyzed.

Material and methods: a number of 165 cases of vesico-vaginal fistulae were operated during the last 30 years in our clinic. Three of them, proceeding from other medical institutions, were relapsed ones. The clinically suspected diagnosis was confirmed through endoscopy. Ultrasound exam and/or IVP were used to assess the state of the upper urinary tract. The uretro-vesical drainage preceded the surgical treatment in all cases. The surgical treatment was performed transvesical (110 cases), transperitoneo-vesical (52 cases) and transvaginal (3 cases), 2-3 months after the onset of the disease.

Results: healing was obtained in 100% of the cases, two of them resolved only with prolonged uretro-vesical drainage (30-40 days).

Conclusions: vesico-vaginal fistulae still remain a reality in gynecologic surgery. It is possible to cure them. The uretro-vesical drainage must precede the surgical treatment as it can rarely cure the disease by itself.

Key words: gynecologic trauma, heeling 100%, vesico-vaginal fistulae

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Introduction

Surgical traumatisms of female urinary tract are usually consequences of gynecologic interventions (1-7). Surgical repair of intra-operative recognized surgical trauma prevents the onset of urinary fistulae. Vesico-vaginal fistula is the most common but it can be associated with urethra- vaginal, uteri-vaginal fistulae (8). All fistulae can be repaired with good results using one of the techniques described below.

In this paper we present our experience of more than 30 years in the treatment of female posttraumatic vesico-vaginal fistulae.

Materials and methods

A number of 165 cases of vesico-vaginal fistulae were operated during the last 30 years in our clinic. Three of them, proceeding from other medical institutions, were relapsed ones. The clinically suspected diagnosis was confirmed through endoscopy. Ultrasound exam and/or IVP were used to assess the state of the upper urinary tract. The uretro-vesical drainage preceded the surgical treatment in all cases. The surgical treatment was performed transvesical (110 cases), transperitoneo-vesical (52 cases) and transvaginal (3 cases), 2-3 months after the onset of the disease.

Results

Healing was obtained in 100% of the cases, two of them resolved only with prolonged uretro-vesical drainage (30-40 days).

Discussion

Intraoperative injury of the urinary bladder during gynecologic or obstetrical surgery is more likely to appear in obese patients with pelvic inflammatory disease, prior uterine surgery and prior radiation therapy (11,13,15). Bladder injury can be recognized intraoperative and repaired by the trained gynecologist or urologist and prevent the vesico-vaginal fistula (20, 21).

Patients with vesico-vaginal fistula complain of constant urinary drainage per vagina, with or without preservation of micturition, and onset postoperative after removal of the urethral catheter or sometimes 1-3 weeks after the operation. It is important to distinguished from other causes of urinary incontinence including stress, urge or overflow incontinence.

Physical examination is the most important diagnostic component in the evaluation of a woman with a suspected genitourinary fistula (5, 8, 10). Vaginal examination should not only attempt to identify the fistulous tract but also assess the overall vaginal capacity, vaginal mucosal integrity (estrogen effect and friability of lining tissue), and presence or absence of significant induration or fibrosis around the suspected tract, which may preclude adequate mobilization for surgical closure purposes (12, 17,19).

Cystoscopy is a crucial adjunct to demonstrate the location and size of the fistula as well as proximity to one or both ureteral orifices. This method also assesses the bladder mucosa for edema and persistent necrosis, which may complicate planned surgical repair I believe this information is critical for appropriate timing of surgical intervention. The possibility of multiple fistulae sites as well as serpiginous tracts between bladder and vagina may also be indicated by cystoscopy (Fig.1). In the patient with a prior history of pelvic malignancy (cervical, uterine, vaginal), biopsy of the fistula tract is crucial to determining appropriate therapeutic approaches for these patients. Biopsy can be performed by either a vaginal or a cystoscopic approach.

Most patients with urinary fistulae were admitted in our department with the fistula recognized by the gynecologist. Rarely urinary incontinence was the diagnosis at admittance. Small fistulae can be diagnosed by instillation of blue methyl in the bladder. Upper urinary tract was assessed by ultrasound, IVU and CT. Cystoscopy was performed after IVU to asses the position and dimension of the fistula. Small fistula can be cured after drainage with urethral catheter for 30-40 days. Endoscopic fulguration at the initial cystoscopy can heal fistulae up to 3 mm diameter. Fistulae tracts that remain open after 3 weeks of drainage need to be treated by surgery. Timing of surgery should consider emotional and psychologic distress of the patient but certain medical and surgical factors as well. Periodic reexamination of the vaginal tissue can rule out inflammation at the level of the vaginal cuff.

Fig.1 Endoscopic aspect of (A) single and (B) multiple VVF
Vaginal repair for uncomplicated VVF is presented in Fig. 2.

![Fig. 2 Vaginal repair of VVF: A retraction with Foley catheter in VVF tract; B Mobilization of anterior vaginal flap; C Mobilization of posterior vaginal flap and excision of VVF tract; D, F closing of the bladder and perivesical fascia with Lembert type sutures; F vaginal wall flaps are advanced to avoid overlapping of suture lines (22) ](image)

Although factors such as size, location and the need for adjunctive procedures often influence the choice of approach, the most important factor is the experience of the operating surgeon. Tissue interposition can be used as adjuvant procedures of repair of VVF. The Martius flap, the peritoneal flap or the great Omentum can be used for tissue interposition (11)

![Fig. 3 Suprapubic repair of VVF A: exposing the fistula after opening the bladder B: excision of VVF tract C: bladder and vagina are closed D: omentum is interposed in cases of large VVF(11,22) ](image)

Principles of surgical repair of vesicovaginal fistula are adequate exposure of the fistula tract with debridement of devitalized and ischemic tissue after removal of foreign bodies or synthetic materials from the region of fistula (at the first examination if possible), careful dissection and anatomic separation of the bladder and vagina, watertight multiple layer closure with tension-free, nonoverlapping suture lines. Adequate bladder drainage and prevention of infection will heal the patient (7).

**Conclusions**

Vesico-vaginal fistulae still remain a reality in gynecologic surgery. It is possible to cure them. The ureterovesical drainage must precede the surgical treatment as it can rarely cure the disease by itself. The surgeon involved in the treatment of VVF has to know all surgical techniques to give the patient the best chance for healing.

**References**