TREATMENT OF VESICOVAGINAL FISTULA THROUGH TRANSVAGINAL APPROACH

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Keywords:

vesicovaginal fistula, cervical cancer, hysterectomy Abstract: Vesicovaginal fistulas are possible complications of hysterectomy. This paper aims at highlighting the advantages of transvaginal approach in order to solve these fistulas, what are the indications, optimal timing of surgery, surgical technique and causes of failures. We conducted a perspective study on 20 clinical cases of vesicovaginal fistula after hysterectomy via abdominal approach, hospitalized within the Urology Clinic of Sibiu, between 2007 and 2013. Of these, 8 were cases of cervical cancer and 12, cases of uterine fibroids. Diagnosis was based on the local clinical examination, cystoscopy and cystography, which revealed the pathological communication path with a diameter of 0.5-1 cm in the retrotrigonal space (11 patients) and trigonal (9 patients), at a variable distance from the urethral orifices. Fistula was installed shortly after surgery (on average, 5 days), with the total or partial loss of urine vaginally. The results were favourable, one case healed spontaneously after the endoscopic removal of suture synthetic threads and prolonged bladder drainage and per primam healing in 17 patients. The remaining patients were operated vaginally through the technique of clogging the fistulous traject. In 3 cases, it was found the reopening of the fistulous traject, requiring transperitoneal abdominal approach. The following are considered as possible causes of relapse: the large size of vesicovaginal communication orifice, immature fistulous traject with inflammatory reaction maintained by hysterectomy stitches and urinary infection. In conclusion, the high percentage of success rate, of 17/20 patients (85%), and the simple approach without visceral or bleeding complications, recommend this type of surgery with the observance of the following principles: late intervention at 2-3 months after the installation of fistula, installing urethral probes where the fistulous traject is near the urethral orifice, the separation of the bladder wall from the vaginal one around the fistulous traject, clogging the fistulous treject with purse-string suture, interposition of vascularised tissue flap between the bladder suture line and the vaginal one, where possible.

Cuvinte cheie: fistula vezico-vaginală, cancer de col uterin, histerectomie Rezumat: Fistulele vezico-vaginale sunt complicații posibile ale histerectomiei. Lucrarea își propune să evidentieze avantajele abordului transvaginal pentru rezolvarea acestor fistule, care sunt indicațiile, momentul operator optim, tehnica operatorie și cauzele insucceselor. Am efectuat un studiu perspectiv asupra unei serii de 20 cazuri clinice de fistulă vezico-vaginală post-histerectomie pe cale abdominală internate în Clinica de Urologie Sibiu, în perioada 2007-2013. Din acestea, 8 cazuri cancer de col uterin și 12 cazuri pentru fibrom uterin. Diagnosticul s-a stabilit pe baza examenului clinic local, cistografiei și cistoscopiei, care au evidențiat traiectul de comunicare patologică, cu diametrul de 0.5-1 cm. în spațiul retrotrigonal (11 paciente) și trigonal (9 paciente), la distanță variabilă de orificiile ureterale. Fistula s-a instalat la scurt timp postoperator (în medie 5 zile), cu pierderea totală sau parțială a urinei pe cale vaginală. Rezultatele au fost favorabile, un singur caz care s-a vindecat spontan, după îndepărtarea endoscopică a firelor sintetice de sutură și drenaj vezical prelungit și vindecare per primam la 17 paciente. Restul pacientelor au fost operate pe cale vaginală prin tehnica înfundării în bursă a traiectului fistulos. În 3 cazuri s-a constatat redeschiderea traiectului fistulos care a necesitat rezolvare prin abord abdominal transperitoneal. Sunt analizate ca posibile cauze ale recidivei: dimensiunea mare a orificiului de comunicare vezico-vaginală, traiectul fistulos imatur cu reacție inflamatorie întreținută de firele de sutură de la operația de histerectomie și infecția urinară. În concluzie, procentul ridicat al reușitei 17/20 paciente (85%), precum și calea simplă de abord, fără complicații viscerale sau hemoragice, recomandă această operație cu respectarea următoarelor principii: intervenția tardivă la 2-3 luni de la instalarea fistulei, montarea sondelor ureterale acolo unde traiectul fistulos este aproape de orificiul ureteral, separarea peretelui vezical de cel vaginal în jurul traiectului fistulos, înfundarea cu fir în bursă a traiectului fistulos, interpoziția flapului de țesut vascularizat între linia de sutură vezicală și cea vaginală, acolo unde este posibil..

INTRODUCTION

Gynecological operations, especially hysterectomy, via abdominal approach, are the main causes of vesicovaginal

fistulas. Rarely, the obstetric manoeuvres at birth represent causes of complex vesicovaginal fistula associated with urinary incontinence and sphincter involvement. Iatrogenic

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vesicovaginal fistulas (after hysterectomy) are the result of tissue necrosis and erosion produced by vaginal stump suture with non-absorbable threads, transfixed through the bladder. Another possible cause is bladder damage, unrecognized intraoperatively, with the formation of an urinoma in the vesicovaginal space, which subsequently will be drained through the vaginal stump and will form the fistulous traject.

PURPOSE

The paper proposes an analysis of how to address these vesicovaginal fistulas after hysterectomy, with a view to assess the effectiveness and benefits of transvaginal approach by purse-string suture and clogging the fistulous traject.

METHODS

There have been analysed 20 cases of vesicovaginal fistula after hysterectomy via abdominal approach, hospitalized within the Urology Clinic of Sibiu, between 2007 and 2013. Of these, 8 were cases of cervical cancer and 12, cases of uterine fibroids. The diagnosis was based on the local clinical examination, cystoscopy and cystography, which revealed the pathological communication path with a diameter of 0.5-1 cm. in the retrotrigonal space (11 patients) and trigonal (9 patients), at a variable distance from the urethral orifices. The age of patients ranged between 45-62 years old. In all cases, the fistula was installed shortly after surgery, on average 5 days, with total or partial loss of urine, vaginally. Patients had no urinary history, inconstant hematuria postoperatively.

For the morphological and functional assessment of the urogenital system, the local clinical examination was performed including vaginal exam and valves examination, abdominal-pelvic ultrasound, renal function tests, urine examination, urine culture, urography with cystographic times. Cystoscopy examination confirmed the presence and location of the fistula with its morphological characteristics, followed by the removal of nylon threads through the bladder or vaginally, present in all cases, and the curettage of the fistula. In 11 patients, the fistula was retrotrigonally placed and in 9 patients, it was trigonally, at a distance of 1-2 cm from one of the urethral orifices. Vesical catheter was preserved, under antibiotic protection for 10-14 days after the endoscopic assessment and removal of the transvesical nylon threads. A single case of small fistula of a diameter less than 0.5 cm healed spontaneously after prolonged vesical catheterization. In the other cases, partial or total losses of urine vaginally continued even under vesical drainage, reason for which the probe was removed, and the patient was operated vaginally after at least two months of fistula maturation.

The surgical technique involved an endoscopic reassessment, fixing the protection bladder probe in 11 patients, fixing the Foley catheter 12-12 Ch, with the balloon in the bladder, on the fistulous traject through the use of a tractor vesicovaginal urethral probe. Vaginal time consisted of a circular incision in the vaginal wall around the fistulous orifice emphasized by the transfistulous Folley catheter (A), vesicovaginal dissection space under the continuous traction of Foley catheter (B) purse-string 0 vicryl suture (B) and ligature with clogging the fistulous traject into the bladder after the removal of the probe (C), cystoscopic check-up and verifying the suture permeability, followed by restoring the vaginal wall (F); urethro-bladder drainage for 5-7 days.

RESULTS

The results were favourable, one case healed spontaneously after the endoscopic removal of suture synthetic threads and prolonged bladder drainage and per primam healing in 17 patients. The remaining patients were operated vaginally through the technique of clogging the fistulous traject.

In three cases, the fistula relapsed after an interval of 10-14 days. We have identified: two cases of vesicovaginal fistula with large diameter (1 cm) early operated with inflammatory tissues which did not allow a good dissection of the vesicovaginal space and one case, in which hysterectomy for cervical cancer was followed by irradiation, with friable tissues unsuitable for this type of suture. Relapses were solved by transperitoneo-bladder approach with epiploic mesh interposition (Diettel-Forgue-Legueu procedure). There were no lesions of the ureter.

DISCUSSIONS

The factors that increase the risk of vesicovaginal fistula after hysterectomy are previous uterine surgeries including caesarean section, bladder history, endometriosis, preoperative pelvic radiotherapy, genital neoplasms, infections including urogenital TBC. The possibility of developing a fistula exists in the cases with postoperative hematuria, which is a consequence of bladder damage. Patients complain of urine loss, which prove to be vaginally immediately after surgery, but in most of the times, the losses occur 5-10 days after surgery. In the case of large fistula, vaginal loss of urine is total, while in the case of small fistula, the patient loses urine particularly when the bladder is full. The differential diagnosis must be made with urinary incontinence by vesico-urethral dysfunction, vaginal drainage of peritoneal fluid, other anatomopathological forms of urogenital fistula: ureterovaginal fistula, uterovesical fistula, uterovaginal fistula.(1) For this, a complete vaginal examination is necessary, in which fistula is usually evidenced at the level of the vaginal stump suture. Bladder instillations with coloured solutions help establishing the anatomopathological form of fistula. Cystoscopy simultaneously with vaginal examination localize the fistula in relation to the ureteral orifices.(2)

Biopsy of lip fistula is necessary for patients with genital cancer to capture any tumour remaining. Intravenous urography is needed to assess the morphological and functional status of the upper urinary tract and possibly to exclude any ureterovesical fistula that can accompany a vesicovaginal fistula in 10% of cases. If urography did not reveal ureters or if unexplained changes occur, retrograde ureteropielography is the investigation that accurately indicates the existence of some ureteral injuries.

Regarding the treatment of vesicovaginal fistulas, it should be noted that once the diagnosis established, the bladder probe should be fixed at the same time with the administration of antibiotics and antispasmodics. The use of estrogens can be beneficial for improving the blood supply of the vaginal wall. A small percentage of small fistulas (according to our statistics, 1/20) can be cured by these conservative measures. In literature, there have been suggested methods, such as transvesical or transvaginal electrocautery of fistulas of 1-3 mm with inconsistent results and the risk of fistula increase.(3)

Failure of conservative treatment is an indication for surgery, following a few key principles for a successful operation. No compromise should be done, especially in the first intervention that always has the best chance of success. Therefore, always take into account many factors including etiology, duration of fistula, quality of tissues to be repaired and even the experience of the urologist surgeon.(5) The principles of primary surgery are also important and should be applied (lightened, uninfected and dry sutures). Where suture quality is questionable, the interposition of a vascularised graft (e.g. Martius labial fat pad flap) is recommended.(6)

CONCLUSIONS

- Iatrogenic vesicovaginal fistulas are possible undesirable complications of gynecological operations.
- Wound bladder can be recognized and solved simultaneously surgically, only the incorrect suture of the bladder may cause vesicovaginal fistula.
- The transfixing non-absorbable vesical thread is the most common cause of vesicovaginal fistula; post surgery hematuria may raise this suspicion.
- For the experienced ones, clogging the fistulous traject in purse-string vaginally is an easy method of solving vasicovaginal fistula when some key principles are observed: preoperative preparation, operation time, surgical technique suitable to the anatomopathological form of the fistula and postoperation care.
- Simple, small and medium fistulas, with retrotrigonal positioning are indications of choice for this procedure, avoiding the abdominal approach and the possible complications related to it.
- Urethral catheter ensures the integrity of the ureter when it is in the neighbourhood of the fistulous treject.
- The positive results achieved, 17/20 (77%), represent arguments of the authors to use this method for solving the vesicovaginal fistula.
- Relapses are caused by preoperative protocol failure or due to technical difficulties related to the strength of the damaged tissues.

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