AN EVALUATION OF THE EFFICIENCY OF DIFFERENT SURGERY TECHNIQUES IN THE TREATMENT OF VESICOVAGINAL FISTULAS – OWN EXPERIENCE

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Summary
Aim. An evaluation of the efficiency of different surgery techniques in the treatment of vesicovaginal fistulas, based on own experience.
Material and methods. In the years 2008-2012, at the Gynaecology-Maternity Ward of the Kędzierzyn-Koźle Public Hospital, 7 patients were operated on due to the development of primary and recurrent vesicovaginal fistulas after abdominal hysterectomy. The patients were operated on vaginally and the operation technique was matched to the location and the size of the fistula.
Results. In 6 patients, the vesicovaginal fistula was closed after only one operation. In 1 patient, a recurrence of the fistula was observed, so the patient needed further corrective surgery.
Conclusions. All of the patients were treated successfully. Both primary and recurrent fistulas can be successfully closed vaginally. Postoperative estrogen therapy in patients operated on vaginally precipitated the healing of postoperative lesions.

Key words: vesicovaginal fistula, surgery techniques, treatment efficiency, diagnostics, complications

INTRODUCTION

Vesicovaginal fistulas are a rare but very discomforting complication. The continuous discharge of urine through the vagina causes irritation of the perineal area and inflammations. It significantly degrades the quality of patients' lives, at times hindering normal functioning in society. The main cause of the occurrence of fistulas between the urinary and genital tracts is prolonged, complicated birth (1). In developed countries, the majority of vesicovaginal fistulas occur after gynaecological and obstetric surgeries and radiotherapy (2).

Vesicovaginal fistulas occurring after gynaecological surgeries are related in 70% of cases to the removal of the uterus (2, 3). The incidence after uterus removal is 1 in 1800(4).

Radiotherapy, the highly effective method of treatment of genital tract neoplasms carries the risk of complication in the form of postradiation fistula (5, 6). Such fistulas occur due to exceeding the critical dose for the urinary bladder.

Other treatments significantly increasing the risk of occurrence of vesicovaginal fistulas are: restorative surgery of the front vaginal wall, transvaginal hysterectomy.

AIM

The evaluation of effectiveness of various techniques of treatment of vesicovaginal fistulas.

PATIENT AND METHODS

The analysis included 7 patients operated on in the ZOZ Kędzierzyn-Koźle Public Hospital in the period 2008-2012 jointly by doctors of the Gynaecology-Maternity Ward and doctors of the Urology Ward. The patients were operated on for primary and recurrent vesicovaginal fistulas. All of the fistulas had occurred after abdominal hysterectomy. Five of the fistulas were primary. Two were recurrent fistulas, each of them three times closed unsuccessfully through abdominal or vaginal routes. The average age of the patients operated on was 54 years. Before surgery, gynaecological and urological diagnoses were performed on each patient. All patients were subjected to a gynaecological examination with a vaginal speculum, during which methylene blue was administered into the urinary bladder, in order to confirm the diagnosis. In all of the patients cytoscopy was performed before and after the surgery.

All of the patients were operated on via the vaginal route. The average duration of surgery was 110 minutes.

The Foley catheter was removed from the bladder on the 14th day after surgery.

The patients were qualified for surgery depending on the diameter of the vaginal orifice of the fistula duct and the location of the vesicovaginal fistula in relation to the external urethral orifice (6). The fistulas were classified as shown below.

Vesicovaginal fistulas are divided into the following, depending on the vaginal orifice diameter:

- simple, with the orifice diameter below 0.5 cm
- complex, with the orifice diameter larger than 2.5 cm
- intermediate, with the orifice diameter between 0.5 cm and 2.5 cm

The Goh classification divides vesicovaginal fistulas into 4 types (7):

Type 1– the vaginal fistula opening is located at more than 3.5 cm from the external urethral orifice

Type 2 – the vaginal fistula opening is located at 2.5-3.5 cm from the external urethral orifice

Type 3 – the vaginal fistula opening is located at 1.5-2.5 cm from the external urethral orifice

Type 4 – the vaginal fistula opening is located at less than 1.5cm from the external urethral orifice

Three operating techniques were used in the treatment.

A surgery using the Sims technique with the Moir modification was performed on one patient. The fistula was classified as primary, simple (< 0.5 cm), Goh type 1. The operating technique involved longitudinal incisions 0.5 cm upward and downward from the fistula. The vaginal wall and the entire cicatricial fibrous tissue are excised downward, so that the excision does not include the mucous membrane of the urinary bladder. The vaginal walls are not separated from the urinary bladder walls. The edges on both sides are pulled together by applying single vertical mattress sutures from top to bottom. The patient was treated successfully.

In four patients with primary fistulas the Futh operation was performed. The fistulas were classified as intermediate (0.5-2.5 cm), Goh type 1. The surgical technique involved the excision of cicatricial edges of the fistula, wide dissection of the vaginal wall from the urinary bladder. The dissected bladder wall is sutured in two layers, and then the edges of the vagina are sutured. All of the patients were treated successfully.

Another two patients with recurrent fistulas were operated on using the Dóderlein technique – three unsuccessful attempts to close the first fistula transvaginally, three unsuccessful attempts to close the second fistula transabdominally.

The fistulas were classified as intermediate, Goh type 2. The operating technique involved the closure of the fistula opening using a 'stemmed roll' formed by rolling up the back vaginal wall and inserting it into the fistula and affixing with sutures. Operating success was achieved in one patient who was previously unsuccessfully operated transabdominally. In the other patient, the treatment was unsuccessful. The patient required another repair surgery using a different operating technique.

RESULTS

Repair surgery of vesicovaginal fistulas was successful in all patients with primary fistulas. In the case of recurrent fistulas, the operating technique chosen proved successful only in one patient. In the other patient was observed a large tissue defect of the urinary bladder and seepage of urine dyed with methylene blue into the vagina. The patient was qualified for a repeat repair operation of the vesicovaginal fistula with the Futh technique. The surgery was successful.

DISCUSSION

Vesicovaginal fistulas are a very troublesome postoperative, postnatal and postradiation complication. The complicated nature, operating difficulties, recurrence are only some of the problems which have to be dealt with by a gynaecologist or urologist. Numerous techniques of treating vesicovaginal fistulas have been described to date, however the multitude of operating techniques may be evidence of imperfection of each of these methods. Patients with vesicovaginal fistulas can be operated on via vaginal, abdominal or mixed routes (8). Most gynaecologists dealing with the problem choose the vaginal route, the least invasive and less burdensome for the patient (9, 10). Transabdominal surgery is preferred by urologists. An alternative for laparotomy is laparoscopy (11). The success rate of surgery via both routes is comparable (11, 12). The achievement of surgical closure of a vesicovaginal fistula is dependent on the choice of the operating technique and the operating doctor's experience. Recurrence of a fistula could suggest failure of the chosen operating method and causes considerable stress to patients. Another surgery is burdened with a significantly higher difficulty level and the risk of complications rises. The chance of successful treatment of a vesicovaginal fistula drops considerably with each surgery.

The success rate of surgical closure of a vesicovaginal fistula opening is comparable across various operating techniques. The lowest success rate, 87%, was achieved by Raashid Y et al. They performed transabdominal and transvaginal repair fistula surgeries (13).

A slightly higher success rate of 93% was achieved by Jatoi N et al., who performed repair fistula surgeries on 29 patients (14). A 100% transabdominal treatment rate, a 97% transvaginal treatment rate were achieved by Lee Ra and Symmonds RE. They performed repair fistula surgeries on 303 patients, using different operating routes (2). In their paper, Lee Ra and Symmonds RE evaluated the surgery success rate taking into account one, sometimes two vesicovaginal fistula closure surgeries. An equally high surgery success rate was achieved by Zambon JP et al., performing repair surgeries in 23 patients operated on through different routes (15). Rechberger T et al. performed repair surgeries using the Latzko technique on 5 patients with vesicovaginal fistulas. Successful treatment was achieved in 4 patients (16).

Our results of surgical closure of vesicovaginal fistulas are comparable with the results of other authors.

CONCLUSIONS

Both primary as well as recurrent fistulas can be successfully closed transvaginally. The degree of operating difficulty increases in the event of a prior unsuccessful repair procedure. □

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