

Repair of Vesicovaginal Fsitula by Vaginal Approach

ARIF QAYYUM, MUHAMMAD KALEEM, ADIL KHURSHEED, MUHAMMAD IQBAL

Department of Urology, Nawaz Sharif Social Security Hospital, Lahore

Correspondence to Dr. Arif Qayyum, e-mail:doctorarifqayyum@yahoo.com

Surgical management of vesicovaginal fistula (VVF) is a matter of controversy. This study describes our experience with transvaginal repair of VVF in fifteen patients between September 2007 to August 2009 in Department of Urology, Nawaz Sharif Social Security Hospital, Lahore. Vesicovaginal fistula developed as a complication of total abdominal hysterectomy in nine patients and as a consequence of obstructed labour in six patients. Four of these patients had undergone prior surgery to close fistula. Transvaginal surgery was successful in first attempt in thirteen patients and remaining two were successfully managed in second attempt. In conclusion transvaginal approach to repair VVF is simple, with very high success rate and low morbidity.

Key words: Vesicovaginal fsitula, Transvaginal approach, Hysterectomy, Obstructed labor

INTRODUCTION

Vesicovaginal fistula is the most distressing complication of gynaecologic and obstetric procedures.^{1,2} This is a condition which leads to serious social disruption of the patient due to urinary incontinence and constant odour and medicolegal consequences for the caring physician. The first documented medical record (Ebers papyrus) gives the reference to VVF with the advise to avoid intervention.³ In eleventh century, Avicenna (Persian physician) considered the condition incurable and advised the women at risk to avoid pregnancy. Dutch physician, Hendrik van Roonhouse described the technique of VVF closure in the first book of operative gynaecology in 1663. The first successful repair of VVF was achieved by Jhon Fatio in 1675. Marian Sims, the father of gynaecology performed VVF repair successfully in 1849. He gave detailed surgical principles to close VVF.⁴⁻⁶ Management of VVF has been better defined and standardized over the recent past.² With the improvement of surgical technique and suture material, the results of successful VVF repair have reached from 90-100% with any approach like transabdominal, transvaginal or laparoscopic.⁷⁻¹³ Transvaginal repair is the preferred method because it achieves success rate comparable with other approaches but it is simple and less invasive. Moreover operating time as well as hospital stay is short with this approach and it is more cost effective with less blood loss.^{1,13,14}

PATIENTS AND METHODS

This study was performed at Nawaz Sharif Social Security Hospital, Lahore from Setpember 2007 to

August, 2009. Patients of any age having VVF of gynaecologic/obstructed labour origin were included in this study. Vesicovaginal fistula arising from malignancy were excluded. All patients were evaluated preoperatively by detailed history including nature of trauma, duration and pattern of incontinence and previous attempt of repair if any, physical examination and investigations. In every patient blood complete examination, blood urea, serum creatinine, blood sugar, screening for HBsAg and HCV, ultrasonography, intravenous urography, X-ray chest and ECG was done. Cystoscopic evaluation was done for site and size of fistula, its relation to ureteric orifices and condition of mucosa around it. At the time of cystoscopy, vaginal speculum examination was done for localization of opening of the fistula, presence or absence of induration or fibrosis, vaginal capacity and vaginal mucosal integrity. Fistula with involvement of ureteric orifice was excluded from study.

Operative Technique: The operation was performed under general or spinal anaesthesia. Patient was placed in lithotomy position. The area was prepared with pyodine and all antiseptic measures were taken. Both the ureters were catheterized if ureteric orifices were close to the fistula. After the identification of fistula, Foley catheter 8-16 Fr was passed through it in the bladder and balloon was inflated. With traction on the Foley catheter, circumferential incision was made at the edge of the fistula on the vaginal side. A generous plane was developed between the walls of bladder and vagina at least 2 cm beyond the fistulous opening. Haemostasis was secured and edges were freshened. Closure of the fistula

was made in three layers. Edges of the bladder wall were approximated without tension with continuous 4/0 polyglycolic acid suture. Catheter was removed from the fistula tract before the placement of last few stitches in bladder wall. Foley catheter was passed per urethra and bladder was filled with normal saline to make sure the closure was water tight. Second layer was created by approximation of a perivesical fascia over the first layer with 3/0 polyglycolic acid suture. Edges of the vaginal wall were approximated with interrupted 3/0 polyglycolic acid suture in the same line. Operation was concluded by packing vagina with pyodine soaked role gauze, which was removed after 24 hours. Continuous catheter drainage was maintained for 14 days. Broad-spectrum antibiotic was given for 2 weeks.

RESULTS

Fifteen patients with vesicovaginal fistula were included in the study. Their age was between 20-60 years with mean age of 42.3 years. Ten patients (66.7%) presented after the age of 41 years (Table 1). Thirteen patients (86.7%) presented with the history of complete incontinence of urine and 2 patients with incontinence of urine along with normal voiding pattern (Table 2). They had very small fistula <0.7 cm in size. Duration of incontinence of urine ranged from 3 months to 15 years. Four patients had previous attempts of fistula repair at some other centre. In 9 patients (60%) VVF was due to abdominal hysterectomy in remaining 6 patients (40%), VVF was due to obstructed labour (Table 3). In 10 out of 15 patients, fistula was supratrighonal and in 5 patients fistula was trighonal (Table 4). In five patients, size of fistula was <1 cm, in 8 patients, it was between 1-2 cm and in 2 patients it was >2 cm (Table 5). All patients were operated transvaginally. Surgery was successful in first attempt in 13 (86.7%) patients and remaining 2 patients were successfully managed in second attempt.

Table 1: Age of the patients at the time of presentation

Age (Years)	=n	%age
20 – 30	4	26.7
31 – 40	1	6.7
41 – 50	5	33.3
51 – 60	5	33.3

Table 2: Etiology

Etiology	=n	%age
Abdominal hysterectomy	9	60.0
Obstructed labour	6	40.0

Table 3: Presenting complaints

Complaints	=n	%age
Incontinence of urine	13	87.0
Incontinence of urine along with normal voiding pattern	2	13.0

Table 4: Location of fistula

Location	=n	%age
Supratrighonal	10	66.7
Trighonal	5	33.3

Table 5: Size of fistula

Size (cm)	=n	%age
< 1	5	33.3
1 – 2	8	53.3
> 2	2	13.3

DISCUSSION

Fistula is defined as an abnormal communication between two or more than two epithelial surfaces. Vesicovaginal fistula is an abnormal communication between urinary bladder and vagina. Common causes of VVF are the complication of hysterectomy (abdominal or vaginal) or obstructed labour. Other causes include low segment caesarean section, anterior colporaphy dilatation and curettage, erosion by foreign body such as pessary, vigorous intercourse and infection like Billharziasis. Congenital VVF is very rare. The fundamental treatment principles for VVF repair (adequate exposure, tension free approximation of the fistula edges, non-overlapping suture line, good haemostasis, water tight closure and adequate postoperative bladder drainage) can be achieved through both abdominal and vaginal route depending upon the surgical experience.² The factors like size of the fistula, its closeness to ureteric orifices and its high location, now hardly affects the choice of surgical approach. Now-a-days there is a more trend towards the transvaginal approach because it is less invasive with high success rate and low morbidity.¹⁵⁻¹⁷ It is acceptable to repeat the repair through vaginal approach even if first attempt for VVF repair fails. Transvaginal repair of VVF is challenging because of difficulty in exposure of VVF and reach to the

site of surgery. The repair is facilitated by catheterization of fistula with Foley catheter and use of inflated balloon for traction to pull the fistula closer to the view and reach for the surgeon.^{15,18} It is generally recommended to avoid overlapping of suture line. In the present series, all cases had overlapping suture lines. We feel that the overlapping of suture lines permits natural approximation of the edges with less tension on the suture line.

In the developed world, obstructed labour was the main cause of the VVF in the past but with development of health care system, now-a-days VVF as a complication of obstructed labour is vanished and almost all the cases of VVF occur due to iatrogenic injury.^{13,17} Commonest cause of VVF in the developing countries is obstructed labour.^{7,13,19,20} In Pakistan, studies conducted at different centres have shown that 53.3 to 89.4% cases of VVF are due to complication of difficult labour.^{8,21,22} In our study, cause of VVF was abdominal hysterectomy in 9 (60%) cases and obstructed labour in 6 (40%) cases. Although these results are different from most of the centres^{7,21,22} but in a study reported from Bahawalpur,²³ the results are parallel to our study. The change of a trend in etiology of VVF may be due to increase incidence of iatrogenic VVF or decrease incidence of VVF resulting from obstructed labour because facilities of caesarean section are now available even in small towns. In our study, obstructed labour gave rise to wider fistula which is comparable to other studies.^{2,15} Post-hysterectomy fistulae in the present series are <2 cm in diameter which is comparable to other reported series.^{2,15,24} Transvaginal VVF repair was successful in 13 (86.7%) patients and remaining 2 patients were successfully managed in second attempt. Our results are comparable with other studies.^{17,24}

CONCLUSION

Transvaginal approach to repair VVF is simple without abdominal incision very high success rate and low morbidity.

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