ORIGINAL ARTICLE

Vesicovaginal Fistula – A-5 Years Review

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Abstract

A retrospective analysis of 25 patients who underwent surgery for vesicovaginal fistula is hereby reported. The mean age of patients was 38.48 ± 10.72 years. Gynaecological surgery was the leading factor in etiology in 60% cases followed by obstetrical trauma in 32% and road traffic accident in 8%. The primary presenting complaint was leaking of urine per vagina and the mean duration of symptoms was 41.81 months ± 9.90. Fistulas due to gynaecological surgical trauma were seen on the vault, while anterior vaginal wall was involved in obstetrical trauma. 84% of patients had single fistula, in remaining 16% two to three fistulas were demonstrated. In 20 patients, transvaginal repair was done, remaining 5 patients underwent repair via abdominal route. Success rate of 80% was reported in our series.

Key words

Vesicovaginal fistula, Cystoscopy, Incontinence

Introduction

"A urinary fistula is an infirmity which is beyond all relief and hope" stated by Sir J. Y. Simpson in 1872 no longer holds true (1). Vesicovaginal fistulas, remained a surgical dilemma for many centuries, but now in the modern era are repaired with a high rate of success by variety of transvaginal and transabdominal techniques (2).

Obstetrical trauma remains the major etiological factor in developing countries, though the number of (vesicovaginal) fistulas produced by obstetrical injuries is now decreasing with the advent of better obstetrical management. On the other hand, surgically produced fistulas, usually following hysterectomy are on the rise. These may result from direct injury to the bladder while separating it from the uterus or from a ligature applied to the bladder with subsequent devitalization of tissues. Necrosis due to radium or carcinoma may form rare causes of fistula.

Many vaginal and abdominal approaches have been described to solved this problem of suffering humanity. Successful repair would much depend upon the selection of an ideal technique apart from major considerations like site, size, number, state of surrounding tissues and familiarity of the surgeon to a technique (2).

This five year review of cases of vesicovaginal fistula was done in an attempt to determine the cause, various diagnostic methods and the techniques used to repair and results achieved by various methods.

Material and Methods

This retrospective study was conducted in the Department of Obstetrics and Gynaecology, Christian Medical College and Hospital, Ludhiana and included twenty-five patients, who underwent surgeries for vesicovaginal fistula between January 1991 and December 1995. Extensive review of records was done with reference to patients' profile, diagnostic methods and treatment. Post operative care and outcome of surgery were also studied and included in the data.

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Results

All patients included in the study were in the age group of 23 to 65 years with a mean age of 38.48 ±10.72 years.

Gynaecological surgery was the leading factor in etiology (60%). Obstetrical injury contributed to 32% of cases, while in rest 8% trauma was the causative factor for vesicovaginal fistulas (Table I).

Table I

Distribution of cases according to Etiology

Etiology	Number of cases	Percentage
Total abdominal hysterectomy	13	52%
Subtotal hysterctomy	1	4%
Cesarean Section	1	4%
Obstructed labour	6	24%
Destructive operation	1	4%
Rupture uterus	1	4%
Trauma (road traffic acccident)	2	8%
Total	25	100%

All patients had leaking of urine per vagina as the primary presenting complaint and the mean duration of the symptoms was 41.81 months ± 9.90.

Detailed pelvic examination was done in all patients. Vulval excoriations were present in 36% cases. On per speculum examination, the size, site and number of fistulas could be established in 96% cases while in rest 4% of cases, cystoscopy confirmed the findings. Most of the patients (84%) had single fistula while in 16% two to three fistulas were demonstrated. Associated complications like wound dehiscence, incisional hernia, cervical tears, vaginal lacerations were seen in 8% of cases.

Initial urine cultures taken at the time of first reporting to our OPD showed significant growth of organisms in 80% of cases. The organisms grown mostly were E. Coli, Proteus, Pseudomonas and Staph aureus (Table II).

Table II

Type of organism grown on Urine Culture

Organism grown on Urine Culture	Number of cases
E. Coli	9
Proteus	2
Pseudomonas	1
Staph aureus	1
Enterococcus	1
Mixed (E. Coli + Proteus-2 E. Coli + Pseudomonas-1	3
No organism	8

Sixty percent of the fistulas primarily due to gynae-surgical trauma were seen on the vault, while anterior vaginal wall was involved in obstetrical and traumatic fistulas (40%). In one patient, who underwent total abdominal hysterectomy, the fistula was big enough to involve both the sites. On cystoscopy 53% of fistulas were supratrigonal, base and posterior wall of bladder were involved in 46% while in 1% cystoscopic findings were inconclusive due to large defect.

Three swab test was done in only seven patients to confirm the presence or site of fistula. Intravenous pyelography was done in all patients before undergoing surgery. Normal renal functioning was seen on IVP in all patients except one, which showed bilateral hydronephrosis. VVF could be demonstrated in all films, excepting two which were inconclusive.

All patients underwent surgical repair, the mean waiting interval between injury and the repair was 43.68 ± 9.81 months. Nineteen patients were undergoing first attempt of surgical repair, four underwent second attempt due to previous one failure and in two, third attempt of repair was done. Vaginal approach of repair was adopted in 21 out of 25 patients. Lithotomy position was used in all patients undergoing repair by vaginal route. Epidural anaesthesia was given to 12 patients, while general anaesthesia and spinal anaesthesia was given to 9 and 4 patients respectively.

Ureteric catheterization was attempted in only 2 patients, one undergoing flap splitting repair and other transvesical repair due to close association of fistula with ureteric orifice.

Most of the transvaginal repairs were done by flap splitting method (20 cases). Sim's Saucerization was done in only one patient. Labia were sewn laterally to help in exposure of fistula site. Schuchardt's incision was used in only one patient. Transvesical repair was done in three patients while one underwent transperitoneal repair. Cervical stump was removed in one patient, who had undergone subtotal hysterectomy. In 2 patients, since the fistula was large, omental graft was used as an adjunctive procedure during repair. Bladder defect was closed in 2 layers with either Vicryl 3-0 or Chromic catgut 3-0 interrupted sutures. Vaginal defect was closed using nylon 2-0 or chromic catgut 1-0 interrupted sutures. Non absorbable vaginal sutures were removed 3 weeks later.

Only 2 patients needed blood transfusion during surgery. All patients received intravenous hydration for 48 hours after surgery. Bladder drainage was usually accomplished by transurethral catheter left in situ for 3-4 weeks. In 2 patients, the balloon of indwelling catheter was not inflated but catheter was anchored to urethra using sutures. Suprapubic drainage was used as alone in only 3 cases and in 2 patients along with transurethral catheter. Prophylactic antibiotics were used in all cases, while catheter was in situ.

In post operative period, 2 patients developed fever due to urinary tract infection, which was subsequently treated according to the culture sensitivity report.

Twenty patients were completely cured while post-operative leaking was seen in 5 patients, between second and fourth week. In one patient it was because of transurethral incontinence, which later on improved with perineal exercises while in the rest, leaking had occurred due to breakdown of repair. Repeat surgery was advised to them, but they were lost to followup.

Discussion

Since Sim's report on the successful closure of VVF in large series of patients, there has been little substantial change in the fundamental principles of the transvaginal approach (1). Besides detailed pelvic examination, thorough urologic work up is an integral part of the presurgery evaluation in fistula cases. It is believed that most fistulas can be cured by vaginal route and it is rarely necessary to use a transvesical or transabdominal approach (3). The results of our study are well consistent with that of various authors.

Results of VVF surgery vary with the type, size and location of fistula, whether repair is first attempt or a subsequent effort and sound surgical judgements. Over the last 40 years, various authors in the developing countries have reported successful primary fistula closure rates of 61 % to 95% (4).

To conclude, in the modern era of gynaecological surgery, closure of VVF is no longer the only parameter by which success is measured. Development of new repair techniques, anticipation and prevention of various complications associated with repair and appropriate management of these complications have become prominent goals for upcoming VVF surgeons.

References

1. Eikins TE, Drescher C, Martey JO, Fort D. Vesicovaginal fistula revisited. *Obst Gynaecol* 1988 ; 72(3) : 307-11.
2. Goodwin WE, Seardine PT. Vesicovaginal and ureterovaginal fistulas-. A summary of 25 years of experience. *J Urol* 1980 ; 123 : 370-73.
3. Vincent JO, Conor JR. Review of experience with vesicovaginal fistula repair. *J Urol* 1980 ; 123 : 367-69.
4. Falk HC, Kurman M. Repair of vesicovaginal fistula. Review of 140 cases. *J Urol* 1963 ; 89(2) : 226-31.
5. Eikins TE. Surgery for obstetrics vesicovaginal fistula.. A review of 100 operations in 82 patients. *Am J Obstet Gynaecol* 1994 ; 170 : 1108-20.