

Vesico Vaginal Fistula Repair with Wide Bore Tube for Urinary Drainage

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ABSTRACT

Objective: To assess the efficacy of wide bore tube in vesicovaginal fistula repair for urinary drainage.

Study Design: Observational / descriptive / cross sectional study.

Place and Duration of Study: This study was carried out in the Department of Gynae & Obs at Medical College/District Headquarter Hospital Mirpur Azad Kashmir from May 2009 to July 2012.

Materials and Methods: All the patients were evaluated with history, physical examination and required labs. Cystoscopy was done in all patients before surgery. Repair was done in two layers. Bladder was drained with 20fr open end drain for first 72 hours, which was replaced with Foley catheter.

Results: Total 28 patients with mean age 31 years (18-49 yrs), twenty three (82.1%) patients were having primary fistula while five (17.9%) had undergone surgical repair before. Location of fistulas were trigonal in 20 (71.4%) patients, supra trigonal 6 (21.4%) patients and 2 (7.1%) were involving the urethra. Twenty one (75%) patients were managed through vaginal route which include both trigonal and supra trigonal fistulas, remaining 7 (25%) repairs were done through the abdominal route. In twenty seven (96.4%) patients the repair was successful on removal of catheter.

Conclusion: Approach for repair of VVF depends upon the preference and experience of surgeon. Success rate can be improved by following basic principles and good urinary drainage with drain.

Key Words: Vesicovaginal fistula, Wide bore tube, Transvaginal Repair, Transabdominal repair

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INTRODUCTION

Vesicovaginal fistula (VVF) is a social problem and a stressful condition for a woman all over the world for the centuries. The most common cause of VVF especially in developing countries is prolonged labor and factors influencing this rate are lack of modern delivery facilities, trained staff, anemia, malnutrition, intrauterine fetal death (IUFD) and young maternal age (physical immaturity of the mother's body leads to cephalo pelvic disproportion).¹ Malnutrition, anemia, IUFD, obstetric labor, PPH followed by forceps delivery in a rural set up followed by obstetric hysterectomy with delay of 6-8 hrs are the few contributing factor.² In developed countries VVF formation because of obstetrical labor is uncommon; the common causes are related to operative injuries, malignant diseases and radiation therapy.³⁻⁴ Hysterectomy as cause of VVF in developing countries is 1/1800 hysterectomies.⁵ The risk factors of VVF formation in hysterectomies are previous uterine

surgeries, pelvic radiations, endometriosis and anatomical distortion as large fibroid uterus.⁶ Complicated VVF can be defined as those fistulas of size more than 3cm, fistula having previous repair attempt, having radiation therapy, malignancy, and fistula involving bladder neck or urethra.

Regarding management commonly followed practice for small fistulae is conservative management with proper undisturbed urinary drainage, antibiotics and in few cases some success (7-12.5%) with fulguration of that area has been reported.⁷ Conservative management of a small VVF relies on spontaneous closure of the defect during a period of catheter drainage of bladder. Its success has been reported in small no of cases following hysterectomy, with catheterization times ranging from 19-54 days.⁸ Vesicovaginal fistula remains a condition with divesting physical and social consequences for the patient, regardless of etiology. The successful management poses a significant challenge. Correct diagnosis and timely repair by an experience surgeon will improve outcomes and limit the clinical insult and distress that a vesicovaginal fistula invariably causes.⁹ Controversies always exist regarding timing and method of repair it is stated the best outcome of successful surgical repair is with the initial repair.¹⁰

MATERIALS AND METHODS

This Cross sectional case series study was conducted at DHQ Hospital Bagh and Sheikh Khalifa Bin Zayed

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Alnahayan Hospital / CMH Muzaffarabad Azad Kashmir from May 2009 to July 2012. A total of 28 patients with mean age of 31 years (18-49 yrs) were included in this study who presented in Urology OPDs or referred from different health units and consultant clinics.

All the patients were evaluated with detailed history, physical examination, lab investigations, abdomen pelvic USG and IVU. In two patients CT-KUB with contrast was also performed. All the patients were booked for elective surgical list. Cystoscopy was performed before surgery in every patient to determine the site, size and number of fistula and to see ureteric orifice. Ureteric stenting was done if required. Vaginal speculum examination was also performed to see the vaginal capacity and mucosal integrity. On the basis of cystoscopy the route of repair was decided. In seven cases abdominal route was the choice, five were high up fistulas while two fistulas were involving the ureteric orifice in which ureteric re-implantation was done, rest of all the cases were repaired through vaginal route. In both routes repair was done in two layers, guide wire was passed in fistulus tract and pulled out from vagina and small size, Foley catheter was slid over it, traction was applied to bring the fistula in to closer view. Circular incision was made around the tract and a generous plane between the vagina and bladder was created. The margins were refreshed and repair was done in two layers without tension at 90° i.e. first layer repaired in horizontal while 2nd layer in vertical direction. Bladder was drained with 20fr open end drain (usually chest tube) for first 72 hrs which was replaced with Foley catheter later on for 10-15 days. Patients were followed with 3 and 6 months' time.

RESULTS

This study include 28 patients with mean age 31 years (18-49 yrs), twenty three (82.1%) patients were having primary fistula while five (17.9%) had undergone surgical repair before. Same number and ratio were seen in nature of fistula i.e. simple and complex accordingly. Location of fistulas were trigonal in 20 (71.4%) patients, supra trigonal 6 (21.4%) patients and 2 (7.1%) were involving the urethra (Figure 1).

The most common etiological factor of VVF was obstetrical trauma i.e. 21 (75%) patients while post hysterectomy VVF in 7 (25%) patients. Twenty one (75%) patients were managed through vaginal route which include both trigonal and supra trigonal fistulas, remaining 7 (25%) repairs were done through the abdominal route, five were complex fistulas and two fistulas were high up. In 2 (7.1%) patients ureteric re-implantation was also done. Comparing the two different route of repair there is less blood loss (250ml vs 450ml) in transvaginal route. There is also shorter mean operation time, shorter hospital stay and lesser

post op. analgesia requirement in transvaginal route (Table 1).

Twenty seven (96.4%) out of twenty eight patients repair was successful on removal of catheter. In one patient there was a small recurrent fistula for which re-catheterization done for next three weeks which healed spontaneously. In 11 patients we observed marked urgency which was treated first with antibiotics after C/S and with tolterodine if required.

Table 1: Comparison of transvaginal and transabdominal routes

Parameters	Transvaginal Rout	Transabdominal Rout	P-value
Mean age	31 years (18-49 yrs)		
Blood loss (ml)	250	450	<0.05*
Operation time (minutes)	66.56	71.21	<0.05*
Catheter drainage time	10	16	<0.05*

*P-value is significant at 5% level of significance.

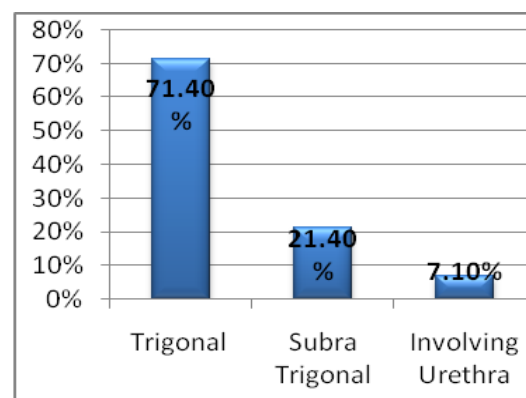


Figure No. 1: Location of Fistula

DISCUSSION

The occurrence of vesicovaginal fistula is rare in developed countries on the other hand this problem exists in reasonable size in underdeveloped countries. The obstetrical causes are commonest etiological factor in third world causing destruction of bladder base and urethra with compression against pubic bone during prolonged obstructed labor, instrumental deliveries or handling by untrained birth attendants.¹¹

Vesicovaginal fistula in developed countries mostly occurs after pelvic surgery i.e. abdominal hysterectomies, which occur in 0.05-0.5% cases. The obstetric etiology of VVF in developing countries is almost 70-95%.^{12,13}

In Pakistan studies conducted at different centers have shown that 53.3-89.4% cases of VVF are due to complication of difficult labor. In another study the

cause of VVF was noted abdominal hysterectomy in (57.7%) patients and obstructed labor in (38.3%) patients.¹⁴ Although these statistics are different from previously recorded in our country.^{15,16}

In this present study we found that the most common etiological factor of VVF was obstetrical trauma in 75% patients while post hysterectomy VVF in 25% patients.

The technique used for surgical repair in this study is almost same as in different studies except the use of wide bore tube instead of Foley catheter and have observed good result i.e. 96.4% proper bladder drainage always play a key role in success. In some studies drainage with suprapubic catheter has been observed. The use of limited anterior cystotomy has improved the historically used morbid O, Connor procedure in which the bladder is bivalved to the level of fistula.¹⁷ We performed repair in almost all the cases 3 months after developing fistula. Although there is no consciences on the definition and no statistical difference in the outcome or superiority of result in early and delayed repair, ideally early repair of VVF need diagnosis within 72 hrs of injury.^{18,19} However different recent reports shows that there is no benefit in delaying repair as the acute inflammation subsides, and early repair have success rate equal to those previously mentioned strategy.⁹

The timing of repair after the occurrence of VVF is the most controversial aspect of repair of VVF. This contentious aspect of fistula management for shortening of waiting period is of both social and psychological benefit to whom who is always very distressed patients. One must not trade these issues for compromise to surgical success. Although early repair is now being advocated by some authors.¹⁴

In our setup mostly patient have a trend of late treatment or surgical intervention that is delayed repair of months is commonly seen. In this present study the average delay time for repair was three months.

Most of simple fistulas irrespective of their locations are easily accessible transvaginally while in complex fistulas it is recommended that trans-abdominal approach should be considered.²⁰ Endoscopic VVF fulguration appears to be a safe and effective day care procedure for small vesicovaginal fistula, with decreasing morbidity and reduced hospital stay and improving cosmesis.²¹ Two third (2/3) of patients with obstetrical fistulas can be cured, through transvaginal surgical approach with complete restoration of continence.⁶

According to the results of our study it was noted that by comparing the two different route of repair there is significantly (p value <0.05) less blood loss (250ml vs 450ml) in transvaginal route. There is also shorter mean operation time, shorter hospital stay and lesser post op. analgesia requirement in transvaginal route.

There is no "best" approach for all patients with vesicovaginal fistula different factors such as size,

location and need of ancillary procedures have an impact on the choice of approach, the most important factor is commonly the experience of the operating surgeon.²² WHO recommends that 90% of the closed fistula should be also continent, and this implies the complete cure of the patient.²³ The key to successful repair of VVF lies in the classic principles defined by Couvelaire in 1953" good visualization, good dissection, good approximation of the margins and good urine drainage.²⁴ In our study we achieve the 96.4% success rate on removal of catheter; this is because of proper technique and good drainage of urine post operatively.

CONCLUSION

The cause of vesicovaginal fistula remains largely due to obstetrical reasons. Management of VVF should be individualized depending upon site, size and local findings; approach for repair depends upon the preference and experience of surgeon. Transvaginal approach is cost effective and less invasive having comparable results were common that much better results can be achieved by following basic principles of repair and good urinary drainage with the help of wide bore drain.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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