

Outcome of Transvaginal Local Repair of Vesicovaginal Fistula

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Abstract

Background: Vesicovaginal fistula (VVF) is a significant cause of physical & psychological disability with social stigmatization especially in low- and middle-income countries. Over 80% of such cases result from neglected prolonged and obstructed labour.

Objective: The purpose of the study was to observe the outcome of transvaginal local repair of vesicovaginal fistula (VVF).

Methods: This descriptive study was carried out at the Department of Obstetrics & Gynaecology, Sylhet M.A.G. Osmani Medical College Hospital, Bangladesh, from July 2007 to June 2008, on 50 patients of vesicovaginal fistula. We included women who were suffering from VVF and who were operated before and diagnosed as a failed repair of VVF. We excluded those patients who had VVF with associated problem like rectovaginal fistula (RVF), any repair through transabdominal route and unwilling to take part in this study. Before surgery, each woman was assessed by medical and surgical history, examination and necessary investigations. Typically, regional anesthesia was utilized for the fistula surgery. However, general anesthesia was given when required. During surgery, transvaginal approach was taken for repair. The vagina was packed for haemostasis. Vaginal pack was removed after 1-2 days depending on instruction of the surgeon. Repacking of vagina was also done sometimes when there was some leaking during post-operative period. Few patients developed severe constipation post operatively.

Results: The participants aged between 16 and 70 years. Among them, majority of the patient belongs to the age 31-35 years (26%) followed by 2nd common group 26-30 years of age (20%) and 3rd one in between 21-25 years of age (16%). Among them 44% patients were primipara and 22% patients were grand multipara. The mobilization during operation was excellent in 30%, satisfactory 64% cases and not enough in 6% cases. After mobilization fistula closed in double layer in 10% and in single layer 90% cases, labial fat graft was given 38% and peritoneal graft was given in 2% cases. During operation bleeding was minimum in 92% cases and in 34% cases catheter was block, urine leakage occurred in 30% cases. Among all patients 14% suffered from fever postoperatively. There was vaginal discharge in 10% cases and UTI in 12% cases which was evidenced by urine culture. Operation was fully successful in 60 percent cases, urethral incontinence in 22% cases & failed in 18% women.

Conclusion: In this study, majority of the transvaginal local repair of VVF operations were successful; however, few difficult cases were observed.

Keywords: Vesicovaginal fistula, transvaginal repair, outcome.

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INTRODUCTION

Genitourinary fistula is a devastating condition affecting the physical and psychological health of women. With advanced obstetric care, these fistulas are rare in industrialized world, but they continue to plague women in the third world. In low- and middle-income countries, including India, 90% of these fistulas are a consequence of neglected and obstructed labour as opposed to developed countries, where they are a complication of surgery or radiation therapy for cancer. Vesicovaginal fistula is an abnormal opening between the urinary bladder and vagina that result in continuous, involuntary dribbling (incontinence) of urine from the vagina.¹ The foremost cause of vesicovaginal fistula is difficult and unattended deliveries. Prolonged, obstructed and neglected labour is the primary factor associated with fistula formation. Woman with cephalopelvic disproportion or malpresentation develops prolonged obstructed labour which leads to the development of a genitourinary fistula in the puerperium. The fistula usually involves the trigone of the bladder which is nipped between the presenting part and the back of the symphysis pubis.² Major contributing factors associated with obstetric fistula include poverty, illiteracy, low status of women, sex inequality, malnutrition, social and cultural issues to family planning and the lack of emergency obstetric care.¹ Victim of obstructed labour who develops fistula remain childless which adversely affects the woman's future. If the fistula is not repaired and the woman remains incontinent and childless, she is likely to be abandoned by her husband, on whom she is economically dependent. Fistula leaves such women physically, emotionally, and socially traumatized.³ Genitourinary fistulas are not life threatening but are socially debilitating condition.^{3,4} Surgical repair is the definitive cure. The best chance of successful repair is at the first attempt. A surgeon with adequate training and experience can optimize outcome of surgery by modifying techniques according to the site, size, and complexity of the fistula. Repair of vesicovaginal fistula remains a major challenge to surgeon worldwide with many acceptable surgical techniques. It can be repaired vaginally, abdominally, transvesical or transperitoneally.³⁻⁵ Gynaecologists mostly familiar with vaginal route. Hence, they usually repair it transvaginally. Transvaginal approach is preferred because it is easier, safer with less bleeding and surgical time and also comfortable

for the patient.³ Considering advantage and disadvantage of different techniques, we have decided to do this study to observe the outcome of transvaginal local repair of vesicovaginal fistula in a tertiary level hospital in Sylhet, Bangladesh.

METHODS

This cross-sectional, descriptive study was conducted at the Department of Obstetrics & Gynaecology, Sylhet M.A.G. Osmani Medical College Hospital, Bangladesh, from July 2007 to June 2008. A total of 65 patients were admitted during our study period; among them 50 patients were selected for this study. We included women who were suffering from vesicovaginal fistula (VVF) and who were operated before and diagnosed as a failed repair of VVF. We excluded those patients who had VVF with associated problem like rectovaginal fistula (RVF), any repair through transabdominal route and unwilling to take part in this study.

At first, the purpose of study was explained to the patient with easy language. When the women understood the purpose and agreed to take part in this study they were taken as sample population. The detail history and thorough examination was done in each case. All patients had their fistula confirmed by vaginal examination using Sim's speculum. Fistula was visualized noting its number, size, anatomical location, and surrounding tissue. When there was difficulty, examination was done under anesthesia in dorsal position. Cystoscopy and intravenous urography were done whenever indicated. Before surgery, each woman was assessed by medical and surgical history, physical examination and necessary investigations. She was counseled about the procedure and signed a consent form. During surgical procedure typically regional anesthesia was utilized for the fistula surgery. However, general anesthesia was given when required. During surgery, a speculum was inserted into the vagina to assess the fistula, scarring, and vaginal caliber. When there was vaginal scarring or band (usually on the posterior vaginal wall) preventing insertion of the speculum, the scar/band was released by an incision with a scalpel at 4 o'clock and 8 o'clock position. An Auvarde vaginal speculum was placed over the posterior vaginal wall. When the fistula was large and in the mid to upper vagina then the ureteric orifices were identified first. Incision was made through the full thickness of the vagina and care was taken as too

deep an incision would involve the bladder. Dye test done to see whether there was leakage, additional suture was required over the defect and dye test performed again. When a labial fat-graft was used, stay-sutures (anchor sutures) were placed in the vagina prior to mobilization of the graft. Omental graft was used where indicated. Vagina was closed with absorbable sutures to avoid suture removal, and this was more comfortable and more compatible for women participated in the study. The vaginal pack was removed after 1 or 2 days depending on instruction of the surgeon. Repacking of vagina was also done sometimes when there was some leaking during post-operative period. Patient was also advised to bring discharge certificate during follow up. During follow up enquiry was made regarding her continence, bladder, or urethral problems, vaginal or coital problems, urinary tract infection and menstrual history.

Data was collected in pre-designed data collection sheet and data was compiled and analyzed manually. Data were then presented through tables expressed in frequencies with percentage. This study was approved by the Ethical Review Committee of Sylhet M.A.G. Osmani Medical College Medical College, Sylhet, Bangladesh

RESULTS

A total of 50 patients participated in this study. Their age varied from 16 to 70 years. Among them, majority of the patient belongs to the age 31-35 years (26%) followed by 2nd common group 26-30 years of age (20%) and 3rd one in between 21-25 years of age (16%) (Table-I). Among them, 44% patients were primipara and 22% patients were grand multipara (Table-II). Table-III shows that mobilization during operation was excellent in 30%, satisfactory 64% cases & not enough in 6% cases. After mobilization fistula closed in double layer in 10% and in single layer 90% cases, labial fat graft was given 38% and peritoneal graft was given in 2% cases. During operation bleeding was minimum in 92% cases and bleeding was more than average where blood transfusion needed in 8% cases. Table-IV shows that in 34% cases catheter was blocked, urine leakage occurred in 30% cases. Among all patients 14% suffered from fever postoperatively. There was vaginal discharge in 10% cases and UTI in 12% cases which was confirmed by urine culture test. Transvaginal repair operation was fully successful in 60% cases, while urethral incontinence was observed in 22% cases and unfortunately repair process failed in 18% of women (Table-V).

Table-I: Distribution of the patients by age (n=50)

Age group	Frequency	Percentage
16-20 years	6	12
21-25 years	8	16
26-30 years	10	20
31-35 years	13	26
36-40 years	6	12
41-45 years	7	14
Total	50	100

Table-II: Parity distribution of the patients (n=50)

Parity	Frequency	Percentage
1	22	44
2	8	16
3	5	10
4	4	8
≥5	11	22

Table-III: Preoperative and perioperative variables (n=50)

Parameters	Frequency	Percentage
Mobilization		
Not enough	3	6
Satisfactory	32	64
Excellent	15	30
Fistula closure		
Single layer	45	90
Double layer	5	10
Graft given		
Labial fat graft	19	38
Not given	30	60
Peritoneal graft	1	2
Per operative bleeding		
Average or minimum	46	92
Needed blood transfusion	4	8
Operation		
Very difficult	9	18
Difficult	21	42
Easy	20	40

Table-IV: Postoperative complications (n=50)

Parameters	Frequency	Percentage
Catheter blockage	17	34
Urine leakage	15	30
Fever	7	14
Vaginal discharge	5	10
Evidence of UTI confirmed by urine culture	6	12

Table-V: Final outcome of the operation (n=50)

Outcome	Frequency	Percentage
Fully cured	30	60
Urethral incontinence	11	22
Failed repair	9	18

DISCUSSION

During the study period, prevalence of vesicovaginal fistula at VVF corner of the hospital was reported to be 5.6% which was higher in comparison to study of Engender health (1.69%). This high prevalence is due to referral from different districts of greater Sylhet region as this is the only tertiary care center of the region. Considering the age of the patients with fistula, a study from Nigeria showed that fistula arising out of obstructed labour in the underdeveloped country where younger age group is more vulnerable.⁴ A study done in Dhaka, Bangladesh showed that majority of the patient belongs to 16-20 years in age group.⁵ In our study, majority of the fistulous patients belonged to 31-35 years age group (26%) followed by 26-30 years age group (20%). Since most of the patients live in remote area and they hardly have the information that there are available treatments in medical college hospitals to solve their problems. Hence, they come to the hospital as delayed cases.

Another study done in Bangladesh showed that 54% patient developed fistula at their first child birth⁶; similar observations were reported by Elkins et al.⁷ Our study also showed that vesicovaginal fistula is most common in primipara (44%). Hence, our findings are similar to those previous studies. Evidence showed that primipara are more vulnerable to develop

fistula due to prolonged obstructed labour,⁸ which is also in congruence with our study.

Successful repair of fistula depends on many factors. Patients presenting with vesicovaginal fistula may present with other associated problem which complicate the fistula and interfere with successful repair. Though rectovaginal fistula was excluded in this study even then 18% patients presented with associated vaginal stenosis and 18% with urethral avulsion. 6% patients had associated bladder mucosa prolapse and 4% had urethral avulsion with urethral stricture in 2% patients. This associated problem adversely affected successful repair which is similar to the findings of the previous studies⁸⁻¹⁰ All patients in our study underwent local repair through vaginal approach. The transvaginal approach seems to be faster, less morbid with relatively minimum blood loss and also had advantage in terms of patients' comfort.^{3,9}

Among 50 patients, repair was successful completely in 60%, and partially cured in 22% patients. The remaining 18% patients' health condition and symptoms did not improve. Our success rate is comparable to McFadden et al.¹⁰ and also with the results reported by Akhtarunnessa.⁶ Interpretation of peroperative and postoperative data with outcome of repair revealed causes of failure of operation. It was due to extensive scarring, large size of fistula, impairment of drainage of urine due to postoperative catheter problem and due to infection. During repair of the fistula, labial fat graft was given in 38% patient and peritoneal graft in 2% cases. Data observation revealed that grafts increased the success rate in comparison to the directly closed fistulas. The grafts were given to cover and seal off the repair. It brings new blood supply and prevent cross union between bladder and vaginal mucosa. It also fills dead space and elevates the urethra against the symphysis and it functions as a bolster in subsequent deliveries. These advantages reduce the failure rate associated with attempted closure of complicated fistula.¹¹⁻¹⁴ In the present study, it has been proved that grafts increase the success rate which is in congruence with other evidence from low- and middle-income countries.^{8-10,13,14}

CONCLUSION

In our study, most of the patients cured completely; however, few cases developed urethral incontinence and some cases failed totally. The facts of failure by

transvaginal approach were blockade of catheter, infection, leakage of urine and failure to maintain perineal hygiene of the patient. This means to some extent that there was inadequate postoperative care. Hence, it can be concluded that along with some important factors for success e.g., site, size, number, fibrosis, training of surgeon, technique of operation and severity of lesion, postoperative care is very crucial one for increasing success rate in transvaginal repair of VVF.

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