

OUTCOME OF VESICOVAGINAL FISTULA REPAIR, WITH AND WITHOUT OMENTAL PATCH

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ABSTRACT

Background: Vesicovaginal fistula is a very unpleasant condition faced by women, mainly caused by obstetrical reasons. **Objective:** To determine the outcome of vesicovaginal fistula repair with and without omental patch. **Patients and Methods:** It was a quasi-experimental study, in which consecutive patients presented with vesicovaginal fistula were included and randomized into two groups. Group A, was repaired with using omental patch, whereas, group B was repaired without omental patch, and the study was conducted in the department of Urology, Bahawal Vitoria Hospital, Bahawalpur from 30th September, 2010 to 31st August, 2011. The data was entered and analyzed by using SPSS version 10. **Results:** Age distribution showed that, 2 (9.52%) were in 20-30 years of age group in group A, 1 (4.77%) in Group-B, 8 (38.1%) were in 31-40 years age group in Group-A and 10 (47.61%) in Group-B, 7(33.3%) were in 41-50 years age group in Group-A and 8(38.10%) in Group-B while 4 (19%) were in 51-60 years of age group in Group-A and 2 (9.52%) in Group-B. Duration of illness for VVF repair revealed that 14 (66.67%) in Group-A and 16 (76.19%) in Group-B have <3 months duration while 7(33.33%) in Group-A and 5 (23.81%) in Group-B were having >3 months duration. Success of repair was 16 (76.19%) in Group-A and 12 (57.14%) in Group-B. **Conclusion:** In our study, vesicovaginal fistula repair was more successful with omental patch than without omental patch.

Keywords: Vesico-vaginal fistula, Fistula repair, Omental patch.

INTRODUCTION

Vesicovaginal fistula (VVF) is an abnormal communication between the bladder and the vagina which allows the continuous involuntary dribbling of urine through vagina. The existence of VVF as a clinical entity is believed to have been known to the physicians of ancients Egypt, with examples present in mummies from 2000 BC.¹ Approximately 500,000 new cases of fistula occur due to obstetrical injury throughout the world annually.² Vesicovaginal fistula (VVF), is commonly caused by prolonged obstructed labor. This unpleasant complication leaves affected women with continuously leaking urine, excoriation of vulva and vagina, often rendering them social outcast.³ Industrialized nations data shows that causes of VVF was abdominal hysterectomy in 83%, vaginal hysterectomy in 8%, irradiation in 4%, and miscellaneous in 5%. In direct contradiction to the epidemiology of VVF in the industrialized world, 96.5% were temporally associated with labor and delivery.⁴ Fistula can be simple where tissues are healthy and

access is good or complicated, where tissue loss is more, access is impaired or ureteric orifices are involved. True incidence of VVF is not Known.⁵ In the past, vesicovaginal fistula was thought to be an incurable problem but with advanced surgical practice, availability of good suture material and antibiotics it can be cured surgically.⁶

Principles of surgical repair of VVF include optimal tissue condition, adequate vascular supply and freedom from infection, inflammation, necrosis and malignancy. Option of complete excision of fistulous tract, tension-free, water-tight, multiayered closure with avoidance of overlapping suture lines, interposition of healthy vascularized tissue between the bladder and vaginal suture lines and continuous postoperative bladder drainage. Transabdominal repair described by O' Connor adheres to these guiding principles.⁷ Outcome of vesicovaginal fistula repair is directed at prevention of repair failure (recurrence) and thus improving the physical and psychosocial wellbeing of the patient. VVF repair done through abdominal route showed variable results with success rate of 100% and 63% with and without omental interposition, respectively.⁸ Another study conducted in Pakistan showed success rate with omental patch interposition was 88%.⁹

Various conservative or noninvasive treatments for vesicovaginal fistulas exist. The most simple conservative treatment is bladder drainage alone. Although usually futile, a small reported series of four patients underwent successful postoperative

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vesicovaginal fistula closure by simple bladder drainage.¹⁰ Small fistulas, usually less than 3 or 4 mm in diameter, may be amenable to simple fulguration, which can be performed at the time of cystoscopy.¹¹ Fibrin therapy has been used to treat rectal fistulas with varying degrees of success and is now being applied to treat vesicovaginal fistulas. Case reports have shown success when using this treatment in fistulas that are smaller than 3 mm.¹² Other methods of treatment for vesicovaginal fistula repairs include electrofulguration and laser ablation of the fistulous tract.¹³ Because most medical therapies have proven to be ineffective, surgical correction remains the primary method for repairing vesicovaginal fistulas. When planning a repair of these fistulas, the surgeon must take into account, the etiology, location, and duration of the fistula because these factors will ultimately dictate the timing of repair and the approach. The timing and approach of vesicovaginal fistula repairs, however, remain controversial.^{14,15,16}

Historically, the approach chosen by the surgeon has been dictated by the location of the fistula. The approaches include vaginal, abdominal, or combined. The abdominal approach has traditionally been used for supratrigonal fistulas, whereas the vaginal approach has been traditionally used for infratrigonal, bladder neck, and proximal urethral fistulas.¹⁷ Transvaginal repairs do not require the excision of the fistulous tract, thus negating the need to perform ureteral reimplant. For simple, small mature fistulas, a transvaginal procedure, such as the Latzko procedure (partial colpocleisis), works extremely well.¹⁸ Combined procedures are often reserved for complicated fistulas requiring the use of omentum or rectus muscle or for vesicovaginal fistulas with ureteral involvement. Fistulas near or at the ureteral orifice may require ureteral reimplantation at the time of VVF repair. This type of requirement would usually mitigate against a completely transvaginal attempt at repair. Success in repairing complex fistulas requires the use of a reinforcing layer as they have failed prior attempts at repair, have persistent induration, or are more than 2 cm in size, necessitate the use of adjuncts such as a martius labial flap¹⁹ or a combination peritoneal and labial flap or a fasciocutaneous flap.²⁰ The objective of present study was to

determine the outcome of vesicovaginal fistula repair, with and without omental patch.

PATIENTS AND METHODS

This quasi experimental study included 42 patients presented to department of Urology, Bahawal Victoria Hospital, Bahawalpur directly or via the Department of Gynecology, from 30th September, 2010 to 31st August, 2011. All the consecutive VVF patients were included in study and randomized to one of the two repair groups. Group A, included the patients in which VVF repair was done with interposition of omental patch. Whereas, in group B, no omental patch was used for repair. All the patients of aged 20 to 60 years having VVF, with or without supra trigonal involvement. Outcome of vesicovaginal fistula repair was measured in terms of repair success and failure. Patients were labeled having vesicovaginal repair failure, when there was persistent leakage of urine from vagina after 06 weeks of surgery with cystoscopic confirmation of the fistula. The exclusion criteria included, vesicovaginal fistula due to radiation, malignancy, recurrent VVF and Vesicovaginal fistula with bladder neck involvement.

The purpose, procedure, risks/benefits of study were explained to the patients and written informed consent was taken. Selected patients who had given written informed consent were allotted either of two groups i.e. Group A and Group B.

Surgery was performed by the senior surgeons having an experience of more than 2 years in vesicovaginal surgery. The patients were divided in two groups; Group A included those patients in which vesicovaginal fistula repair was done with interposition of omental patch. Group B included those patients in which vesicovaginal fistula repair was done without interposition of omental patch. General anesthesia was used in all these patients. Vesicovaginal fistula was repaired through trans abdominal route. Abdomen was opened and rectus muscles were split in the midline incising linea alba. Bladder was vertically opened from dome along posterior wall up to fistula site. Ureteric openings were identified, 5 Fr feeding tubes were passed in both ureters. The bladder was dissected from vaginal wall up to 1-2 cm below the fistula opening. In group A, bladder and vagina was closed separately and omental interposition was made posterior to the bladder and anterior to the vaginal repair site. In group B, the bladder and vagina were closed

separately without interposition of omentum. The ureteric tubes were brought out through bladder and abdominal wall, as ureteric stents. Bladder closed in two layers. Per urethral Foleys catheter was also passed. Drain was placed in abdomen. Abdomen was closed and povidone iodine soaked gauze was placed in the vagina. This gauze was removed after 24 hours. Postoperatively, patients were assessed about the dribbling of urine from vagina prior to discharge by checking the soakage of sanitary pads and on subsequent follow-ups. Final outcome was assessed at the end of 06 weeks after removal of Foley's catheter.

Data of the patient, who fulfilled the inclusion criteria, were collected through a pre-designed questionnaire, data was collected, coded and analyzed on SPSS version 10. Frequency and percentages were calculated and tables were formed for variables such as age distribution, cause of fistula and outcome of VVF repair. Mean \pm standard deviation for age of patient and duration of disease was calculated. Chi-square test was used to compare the VVF repair outcome in both groups. P-Value of <0.05 was taken as significant. Stratification was done in terms of age, etiology of VVF.

RESULTS

In this study, a total of 42 patients were recruited after fulfilling the inclusion/exclusion criteria to determine the outcome of vesicovaginal fistula repair with and without omental patch interposition.

Age distribution of the patients is shown in Table I, where 2(9.52%) were in 20-30 years of age group in group A, 1(4.77%) in Group-B, 8(38.1%) were in 31-40 years age group in Group-A and 10(47.61%) in Group-B, 7(33.3%) were in 41-50 years age group in Group-A and 8(38.10%) in Group-B while 4(19%) were in 51-60 years of age group in Group-A and 2(9.52%) in Group-B.

Duration of illness for VVF repair revealed that 14(66.67%) in Group-A and 16(76.19%) in Group-B, have <3 months duration while 7(33.33%) in Group-A and 5(23.81%) in Group-B were having >3 months duration. (Table I)

Success of repair was 16(76.19%) in Group-A and 12(57.14%) in Group-B while 5(23.81%) in Group-A and 9(42.86%) in Group-B were

recorded as failed, with a p value of 0.03, for difference.

Table I: Stratification for success of VVF repair for patients

Age (Years)	Group A	Group B
	No of patients (% age)	No of patients (% age)
20-30	02 (9.52%)	01 (4.77%)
31-40	08 (38.10%)	10 (47.6%)
41-50	07 (33.33%)	08 (38.1%)
51-60	04 (19.05%)	02 (9.5%)
Duration		
< 3 months	14 (66.67%)	16 (76.1%)
>3 months	07 (33.33%)	05 (23.8%)
Duration of illness (mean \pm SD in days)		
	56.21 \pm 11.16 days	51.176 \pm 9.32 (days)
Outcome		
Success	16 (76.19%)	12 (57%)
Failure	05 (23.81%)	09 (42.8%)

Table II: Characteristics of patients (N=42)

Age (years)	Group A		Group B	
	No. of Patients	Success No. (%age)	No. of Patients	Success No. (%age)
20-30	2	2 (100)	01	1 (100)
31-40	8	7(87.7)	10	6 (60)
41-50	7	5(71.43)	08	4 (50)
51-60	4	2 (50)	02	1 (50)
Etiology				
Surgical	11	9 (81.82)	13	7 (53.85)
Obstetrical	10	7 (70)	08	5 (62.5)
Duration of disease				
< 3 months	14	12 (85.7)	16	10 (62.5)
>3 months	07	4 (57)	05	2 (40)

Stratification for success of VVF repair for age of the patients showed that 2(100%) out of 2 patients in Group A and 1(100%) out of 1 in Group-B, between 20-30 years of age, when having successful repair. 7(87.5%) out of 8 in Group-A and 6 (60%) out of 10 in Group-B, between 31-40 years, 5 (71.43%) out of 7 in Group-A and 4 (50%) out of 8 in Group-B

between 41-50 years while 2(50%) out of 4 in Group-A and 1(50%) out of 2 in Group-B, between 51-60 years of age, were having successful repair. (Table No. II)

Stratification for success of VVF repair for etiology of the disease showed that 9 (81.82%) out of 11 patients in Group-A and 7 (53.85%) out of 13 in Group B with surgical etiology were having successful repair while, 7 (70%) out of 10 in Group A and 5 (62.5%) out of 8 in Group B with obstetrical etiology, were having successful repair. (Table II)

Stratification for success of VVF repair for duration of disease showed that 12 (85.71%) out of 14 patients in Group A and 10 (62.5%) out of 16 in Group B with <3 months of duration were having successful repair while, 4 (57.14%) out of 7 in Group A and 2 (40%) out of 5 in Group B with >3 months of duration of disease, have successful repair. (Table No. II)

DISCUSSION

The prevalence of the morbidity varies from country to country and continent to continent due to the main causative factors. According to World Health Organization (WHO) estimation, in developing countries each year five million women suffer severe maternal morbidity, obstetric fistulae being on the top of the list. It is also estimated that currently more than 2 million women are waiting for surgery worldwide and about 50 to 100,000 new cases are added each year mostly in Africa and Asia. In developed countries on the contrary, fistula are related to Gynaecologic surgery.²¹

We conducted this study, considering the discrepancy of results of VVF repair with omental interposition, hence needs further evidence and very few studies have been published.

The transabdominal approach was adopted due to the reason that most of the cases had complex or supratriangular fistulae and in our setup, we used this approach mostly due to strong believe that VVF should preferably be close with multiple layers without tension and using tissue interposition so the greater omentum is commonly used when the abdominal approach is chosen. We recorded 76.19% success rate in omental patch group as compared to 57.14% in without omental patch, our results are comparable with the results

of Evans and colleagues,²² recording more success with omental patch as compared to without omental patch, but the success rate of their study was 100% versus 63%, the difference in lower success rate may be due to the reason that we had only 2 years of experience regarding repair of fistula which may not be very much sufficient, but the higher success rate shows that repair with omental patch is better than without.

Our results are in agreement with a study conducted by Uprety D and co-workers,²³ who recorded 56% of success rate in VVF repaired without omental patch. Results of Nawaz H and workers,⁸ showed success rate of 87.93% for repair of VVF with omental patch. Another study by Tariq M and colleagues,²⁴ who evaluated the outcome of vesicovaginal fistula repair with and without interposition of omental patch, revealed 96% success rate as compare to 84%, these findings are also in agreement with the result of the current study regarding more success in Group-A patients who were treated with omental patch.

Langkilde NC, in a study,²⁵ to find out the outcome of vesicovaginal fistula closure procedures over a 10-year period, 23 had an abdominal repair and 7, have vaginal repair of the 30 patients with postoperative fistulae. A success rate of 90% was achieved after a first closure procedure; the results of this study are also in agreement with the current study. Stratification for age, duration of disease, and type of etiology of vesico-vaginal fistula also revealed almost equal success in both groups.

CONCLUSION

The results of the study showed that outcome of vesicovaginal fistula repair with omental patch is superior to vesicovaginal fistula repair without omental patch and can be used in our routine practice, which may be further increased with the increase in experience.

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