



SURGICAL MANAGEMENT OF VESICOVAGINAL FISTULA REPAIR: OUR EXPERIENCE.

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ABSTRACT... Objectives: The results of our study would generate useful baseline database which would help the surgeons to manage these fistulae and their related complications properly. **Study Design:** Non-randomized Clinical Control Trial study. **Setting:** Department of Urology, Bahawal Victoria Hospital, Bahawalpur and Shahida Islam Medical College, Lodhran. **Period:** From July 2015 to June 2016. **Material & Methods:** Total 150 women with vesico-vaginal fistula (VVF) on cystoscopy of either age were selected. Patients with history of recurrence of fistula, multiple fistulae, radiation and severe vaginal scarring were excluded. The transvaginal management was approached in cases of simple fistula, VVF located at trigone of bladder while transabdominal route was preferred when the fistula site could not be easily accessed per vagina, when VVF was above trigone or when the VVF was complex. These patients were followed for 6 weeks at 2 week time interval. **Results:** Age range in this study was from 20 to 60 years with mean age of 38.18 ± 10.64 years. Majority of patients were (41.72%) with medium sized fistula. In 92 patients, abdominal repair was done while in 52 patients vaginal repair was done. Unsuccessful repair was seen in 14 (9.33%), infection in 25 (16.67%) and recurrent fistula formation in 21 (14.0%) patients. **Conclusion:** This study concluded that the frequency of unsuccessful repair and recurrent fistula is more after vaginal repair compared to abdominal repair while infection rate was more after abdominal repair.

Key words: Fistula, Recurrence, Trans-Vagina.

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INTRODUCTION

Vesicovaginal fistula (VVF) is a tract which is created abnormally between vagina and bladder and there is involuntary leakage of urine per vagina.¹ For establishing the diagnosis of VVF, it is necessary to establish that the leakage is not from urethra and thus history and examination are very important for establishing the diagnosis but not very specific. Dye test is found to be the first investigation for its diagnosis and gynecologists claim it as the investigation of choice.²

The etiology of VVF varies geographically and it varies in different parts of the world. VVF can appear 1-6 weeks after gynecologic or obstetric surgery and recurrent fistulas can occur within three months of primary fistula repair. Other causes of VVF include trauma, foreign bodies (neglected pessaries), infection and malignancy (cervical,

endometrial and vaginal carcinomas). Main cause is iatrogenic injury during gynecological surgery.¹ Fistulas can be classified according to size as small (≤ 0.5 cm), medium (0.6 cm-2.4 cm), large (≥ 2.5 cm), and type as simple (small non-radiated, single) and complex (medium, large, radiated, multiple, recurrent) respectively.³

There are many surgical techniques for vesicovaginal fistula repair but mostly abdominal and vaginal approach are in routine practice.⁴ The better route among these two is on surgeon preference as vaginal route is used mostly by gynecologists and abdominal route mostly by urologists. As the arguments of earlier intervention and success rate have little merit as both approaches have their place.²

Different studies have reported different successful

management rates. Murray reported 100% success rate with varying complication rates such as urinary incontinence in 55% the women.⁵⁻⁹ There had been few such studies done in Pakistan which could only document the success rates of surgical repair of VVF but none of them reported complication rates. The objective of this study was to compare the outcome between abdominal versus vaginal route vesicovaginal fistula repair. The results of this study would generate useful baseline database which would help the surgeons to manage these fistulae and their related complications properly. This study would report the outcome of management followed by complication rates in our local population.

MATERIAL & METHODS

This Non-randomized clinical control trial study was conducted at the Urology Department of Bahawal Victoria Hospital, Bahawalpur and Shahida Islam Medical College, Lodhran from July 2015 to June 2016. A sample of 150 patients was selected through consecutive non probability sampling technique. Women diagnosed to have vesico-vaginal fistula (VVF) of any size on cystoscopy of either age were included. Patients with history of recurrence of fistula, multiple fistulae and history of radiation, small bladder size, urethral destruction, circumferential involvement and severe vaginal scarring were excluded. After taking permission from Institutional Ethical Review Committee, the consent of the patients was sought.

All of the registered cases were taken for history, physical examination and laboratory investigations including intravenous urogram. Defined procedures were planned after cystoscopic examination by a senior consultant having more than five years post fellowship experience. The site of fistula, the size of fistula for example small (≤ 0.5 cm), medium (0.6 cm-2.4 cm), large (≥ 2.5 cm), type of fistula such as simple (small non-radiated, single) and complex (medium and large), sphincter mechanism, surrounding fibrosis, previous attempts to repair and extent of vaginal stenosis were carefully evaluated.

The transvaginal management was approached in cases of simple fistula, VVF located at trigone of bladder while transabdominal route was preferred when the fistula site could not be easily accessed per vagina, when VVF was above trigone or when the VVF was complex. These patients were followed for six weeks at two weeks' time interval. Data was analyzed by using SPSS version 22. Quantitative variables were presented as mean and SD. Qualitative variables were presented as frequency and percentages. McNumar Chi-square test was used to compare the outcome between Abdominal versus Vaginal route for VVF repair.

RESULTS

Age range in this study was from 20 to 60 years with mean age of 38.18 ± 10.64 years. Majority of the patients 59 (39.33%) were between 31 to 40 years of age. Majority of patients 68 (45.33%) were with medium sized fistula. 103 (68.67%) fistulae were simple while 43 (312.33%) were complex (Figure-1).

In 98 patients, abdominal repair was done while in 52 patients vaginal repair was done. Unsuccessful repair was seen in 05 (5.10%) in abdominal repair and in 09 (17.31%) in vaginal repair with p-value of 0.0145. Infection was seen in 21 (21.43%) in abdominal repair and in 04 (7.69%) in vaginal repair with p-value of 0.0317. Recurrent fistula formation was seen in 13 (13.27%) in abdominal repair and in 08 (15.38%) in vaginal repair with p-value of 0.7218 as shown in Table-I.

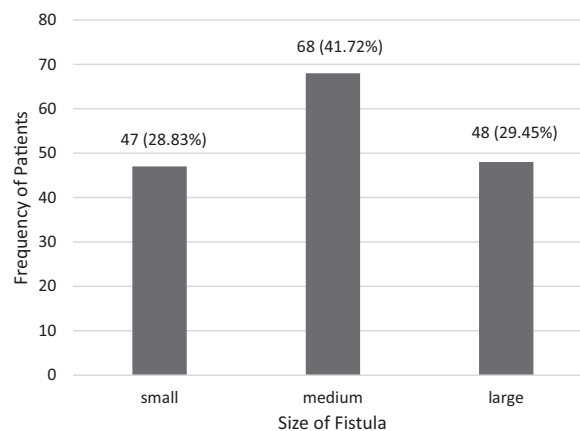


Figure1. %age of patients according to size of fistula (n=163).

Outcome		Abdominal (n=98)	Vaginal (n=52)	P-Value
Unsuccessful Repair	Yes	05 (5.10%)	09 (17.31%)	0.0145
	No	93 (94.90%)	43 (82.69%)	
Infection	Yes	21 (21.43%)	04 (7.69%)	0.0317
	No	77 (78.57%)	48 (92.31%)	
Recurrent Fistula formation	Yes	13 (13.27%)	08 (15.38%)	0.7218
	No	85 (86.73%)	44 (84.62%)	

Table-I.

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	No	85 (86.73%)	44 (84.62%)	

Table-II.

Recurrence of Fistula in Vaginal approach	Recurrence of Fistula in Abdominal Approach		Total	Chi-square Value (With Yates' correction for continuity)	DF	P-Value
	Yes	No				
Yes	3	5	8	0.0830 (With Yates' correction for continuity)	1	0.7728
No	7	37	44			
Total	10	42	52			

Table-III. Comparison of recurrence of fistula in VVF repair in Abdominal versus Vaginal approach by McNemar Chi-Square test.

DISCUSSION

For VVF repair, either of the approaches used but the most important points that should be addressed during repair is a tension free closure and adequate blood supply to the layers should be there.^{10,11} The choice of approach usually depends on surgeon preference and experience.¹²⁻¹⁴ In our study, we have done vaginal repair in 52 patients with simple fistula (small non-radiated, single), VVF located at trigone of bladder while transabdominal route was preferred in 98 patients when the fistula site could not be easily accessed per vagina, when VVF was above trigone or when the VVF was complex (medium and large).

In our study, unsuccessful repair was seen in 14 (9.33%), infection in 25 (16.67%) and recurrent fistula formation in 21 (14.0%) patients. Different studies have reported different successful management rates. Murray reported 100% success rate with varying complication rates

such as Urinary incontinence in 55% the women.⁵ Another study by Rajamaheswari reported successful outcome for vaginal repair as 86.7% while 100% success rate for abdominal repair and recurrent fistula formation was observed in 12 % of these treated cases.⁶ Kapoor R et al¹⁵ in his study on 52 VVF patients reported simple fistulas in 32 (61.5%) patients and complex fistulas in 20 (38.5%) complex fistulas. Obstetric trauma was found to be the most common etiological factor followed by post hysterectomy VVF. The author had done transvaginal repair in in 32 (61.5%) patients while abdominal repair was done in 20 (38.5%) complex fistulas patients. He has reported the overall success rate of 94.2%.

In another study¹⁶ done on 56 patients reported obstructed labour as the most common etiological factor. The author had done transvaginal repair in in 71.7% patients. He has reported the overall success rate of 73.2%. Another study from India

reported 94.8 % success rate in vaginal repair while 100 % successful repair was achieved through abdominal repair.⁷

Milicevic Set al¹⁷ has found successful primary repair of VVF in 75.00% of patients. The successfulness of primary repairs with transvaginal and transabdominal approach with the use of omental flap was 100%, and with transvesical approach, it was 68.42%. Frajzyngier reported abdominal repair to be more successful (90% success rate) compared with that of vaginal repair (81% success rate).⁸ Gupta et al reported 91.7% success rate while among complication wound infection was 25%.⁹

Some studies are also available at national level, in a study published from Islamabad reported 100% success rate through transabdominal route while 80% success rate through transvaginal route.¹⁸ In a study conducted at Rawalpindi has reported overall 95% success rate¹⁹, another study conducted at Lahore reported overall 87% success rate including 87% success rate through vaginal route while 88% success rate was reported through abdominal route.²⁰ A study conducted at Jamshoro reported 93% overall successful rate.²¹

The present study showed 83% success rate with transvaginal repair. Therefore, the success largely depends on a thorough evaluation followed by a prudent decision about the route of surgical repair. Success is also affected by many other factors, like general condition of the patient, size and site of the fistula, condition of the tissues, number of previous attempts at repair and operative facilities. Mubeen RM et al¹⁸ showed successful surgical repair through transabdominal route in all 24 (100%) cases of VVF and in 4 (80%) out of 5 (100%) cases through trans-vaginal route.

Langkilde NC et al²² conducted a study for 10 years in which he had repaired VVF in 30 patients. Abdominal repair was done in 23 patients and vaginal repair was done in 7 patients. He has found the 90% success rate in his study.

In another study done on 18 patients, abdominal approach for VVF repair was used in 15 patients

and vaginal approach in 3 patients. The author found only one patients with failure rate with overall success of almost 95%. There was no mortality following operative procedures. There was one failure with a success rate of 95%.²³ Sahito RA et al²⁴ wrote about the successfulness of the primary surgical repair with the abdominal approach in 30 patients with VVF in 86.67% of cases. On the other hand, Atiq-ur-Rehman S et al²⁵ has found the success rate of 91.67% with abdominal approach and with vaginal approach, he has found 100% success rate. In another series by Khawaja AR et al²⁶, majority of the patients (n=27) were repaired by trans abdominal route with a success in 26 patients (95.65%) and one failure.

CONCLUSION

This study concluded that the frequency of unsuccessful repair was seen in 9.33%, infection in 16.67% and recurrent fistula formation in 14.0% patients with unsuccessful repair and recurrent fistula found to be more after vaginal repair compared to abdominal repair while infection rate was more after abdominal repair. So, we recommend that abdominal approach should be adopted as a primary method of VVF repair because of its higher success rate as compared to vaginal route which will result in reducing the morbidity of these particular patients.





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2	Mudasar Saeed Pansota	Conception and design, acquisition of data, analysis and interpretation of data, drafting and critical revision, final approval of the version to be published.	
3	Fariha Mumtaz	Acquisition of data, drafting and final approval of the manuscript.	
4	M. Shehzad Saleem	Acquisition of data, drafting and final approval of the manuscript.	
5	Shafqat Ali Tabassum	Conception, acquisition of data, critical revision of the manuscript.	