

# Vesicovaginal Fistula Seen in Southern Punjab-Etiology and Management

Vesicovaginal  
Fistula-Etiology  
and Management

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## ABSTRACT

**Objective:** To describe etiology of Vesicovaginal Fistula (VVF) to investigate surgical outcome of Vesicovaginal Fistula repair after use of different management techniques.

**Study Design:** Retrospective study

**Place and Duration of Study:** This study was conducted at the Urology, Multan Institute of Kidney Diseases Multan, Urology Department BVH Hospital Bahawalpur from January 2017 to November 2018.

**Materials and Methods:** Surgical repair of urinary fistula was performed in 40 patients included in the study. Main variables of study were etiology of VVF, site, previous failed repair, size, presentation, surgical repair technique and outcome.

**Results:** Mean age of patients in study was 33.9±3.6 years. Most of the patients developed fistula due to gynecologic surgery(60%)out of which abdominal hysterectomy was more frequent cause(45%).In 12 patients (30%) VVF occurred following obstructed and prolong labor and in 4 patients VVF was seen after cesarean sections due to reasons other than obstructed labor. Abdominal approach was used in majority of patients 75% and remaining patients underwent vaginal repair. The outcome was successful in 87.5% of cases.

**Conclusion:** Gynecologic surgery is the most common cause of urinary fistula. In cases of previous failed repairs abdominal approach can be used due to its high success rate.

**Key Words:** Vesicovaginal fistula, Surgical management, Failed repair, Abdominal approach.

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## INTRODUCTION

Vesicovaginal fistula (VVF) is an abnormal passage between the genital and urinary tract. It is more often seen in Africa and Asia. Prevalence rate of VVF is 1.6/1000 in reproductive age women in sub-Saharan Africa and 1.2/1000 in South Asia.<sup>1</sup> A recent review shows just over thirteen percent of fistula were iatrogenic, obstetric complications of surgery including cesarean sections(80%) while remaining (20%) occurred during gynecologic surgery not related to pregnancy.<sup>2</sup> Risk factors for VVF development include age>20 years, first pregnancy ,labor greater than 24 hours, delivery at home, height<150cm, lack of education, poor antenatal care and having male fetus.<sup>3-5</sup>

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Women present with continuous urinary incontinence as they develop urogenital fistula.<sup>6</sup> Following cesarean section women suffer from incontinence of urine after 7-10 days postoperatively while this complaint is noted immediately due to obstructed labour.<sup>7</sup> Injury to uterus or ureter following cesarean section may occur leading to different symptoms. The cause of obstetric fistula is the lack of labor and delivery services. Poor infrastructure such as communications and transportation, lack of female education, social and economic dependence are other etiological factors. The areas where women are affected, quality data collection is much difficult.<sup>8</sup>

There is high degree of depression, exclusion from social network, role loss, and economic deprivation in fistula women. There is a report from a study that small number of women avoided child bearing after fistula repair. They get isolated and develop marital conflict.<sup>9</sup> Prolong and obstructed labor was the most common cause of VVF but now there is increase in number of vesicovaginal fistula formation due to gynecologic surgeries.<sup>10</sup> More or less these etiological factors are seen in our community especially Southern Punjab Districts. We aim to study etiology and management of obstetric VVF and VVF development after gynecologic surgery.

## MATERIALS AND METHODS

Retrospective study was completed in the department of urology, Multan Institute of Kidney Diseases Multan,

Urology department BVH hospital Bahawalpur from January 2017 to November 2018. Forty patients were included in the study after taking written consent. Patients with history of previous failed repair of fistula were also included. Complete history about parity, age, etiology, presentation, previous surgical repair and their outcome was taken. Examination of patients for size, site of fistula, and vaginal stenosis was also taken. Complete urine examination, x ray KUB, USG abdomen, blood urea, serum creatinine and intravenous urography was done in all patients. Patient's urine sample was taken for sensitivity with sterile speculum in taking aseptic measures. Number, size of fistula, location in relation to trigone and involvement of ureteral orifice was assessed with cystoscopy.

The fistula was repaired through transabdominal approach. After giving lower midline incision, rectus sheath was cut and recti muscles were split. Peritoneum was reached and incised. Urinary bladder was approached and opened. Fistula was identified and small fols catheter was passed into fistulous tract to make it more prominent. Fistulous tract was excised and flap of anterior vaginal wall was raised. Then vaginal rent was closed with 3/0 vicryl in two layers and in second layer margins of rent were inverted. Rent in posterior bladder wall was closed with 3/0 vicryl. For better drainage of urine suprapubic and urethral catheter was passed. Continuous drainage was ensured for two weeks.

For those patients in which fistula location was subtrigonal, repair of fistula was done through transvaginal route. Flap splitting technique was used in which after identifying fistula patriotic Foleys catheter was inserted through fistulous opening. Fistulous tract was made more accessible as traction on Foley catheter was applied. A vaginal flap was separated away from bladder by giving circular incision around the fistulous opening. Flap was made for tension free defect closure. Vicryl 3/0 was used to close bladder wall. Vicryl 3/0 was again used for closing of vaginal mucosa in running interlocking manner. Bladder drainage was confirmed and ensured for period of two weeks. Broad spectrum antibiotics were given. Patients were followed up at I month, 2 months and 6 months after surgery. After two weeks of surgery, cystogram was performed to exclude presence of fistula. The success of repair was also assessed by clinical evaluation.

Data was entered and analyzed by using SPSS version 23. Continuous variables like age, symptoms duration. Frequency and percentages were calculated for qualitative data like frequency of outcomes after VVF repair. Student t test and Chi-square test was applied to see association among variables. Probability of  $p \leq 0.05$  was considered statistically significant.

**RESULTS**

Mean age of patients in our study was  $33.9 \pm 3.60$  years (26-39). Median duration of symptoms was 9 months.

The etiology of fistulae is shown in table 1. Most of the patients developed fistulae due to gynecologic surgery(60%) out of which abdominal hysterectomy was more frequent cause (45%). There were two fistulas that occurred after cesarean sections for reasons other than obstructed labor. There was densely adherent placenta accreta in these patients. On cystoscopy location of fistula seen in majority of patients was supratrigoal 75%,10% near to bladder neck and 15% below in trigonal area. Fistulas were divided into two types simple and complicated based on characteristics of fistula such as number, size, site, ureteral involvement and number of previous repairs. Simple fistulas were present in 22 patients (55%) and eighteen women(45%) had complicated one. In twenty seven patients(67.5%) repair of fistula was done first time and thirteen(32.5%) had at least one failed repair. Those fistulas which were supratrigoal were repaired intraabdominal and trigonal or below trigone located were repaired vaginally.

At six months follow up, 35 patients(87.5%) had a successful result and five(12.5%) had failed repairs. Surgical outcomes were compared between simple versus complicated group and also regarding the number of previous repairs as shown in table 2. No statistical significant difference was found between the success rate of simple and complicated fistulas or between primary and previous repairs.

**Table No.1: Etiology of Fistula**

Etiology of fistula		n=40(%)
Obstetric	Vaginal delivery after prolong and Obstructed labor	10(25)
	Cesarean section following obstructed Labor	2(5)
	Cesarean section for reasons other Obstructed labor	4(10)
	Total	16(40)
Gynecolog	Total abdominal hysterectomy	18(45)
	Vaginal hysterectomy	4(10)
	Vaginoplasty	2(5)
	Total	24(60)

**Table No.2: Result of VVF repair based on type of fistula and previous failed repairs**

		Outcome	n=(%)	P Value
Type of Fistula	Simple	Successful 20(90)	Failed 2(10)	0.471
	Complicated	15(83.3)	3(16.6)	0.5
Number of Previous Repairs	No Previous Repairs	24(92.3)	3(7.7)	.70
	Previous repairs $\geq 1$	9(64.2)	5(35.7)	

## DISCUSSION

Mean age of the patients in present study was 33.9  $\pm$  3.60. In recent study of Etabbal AM et al; mean age of the patients at presentation was 29.4  $\pm$  8.4 years which is close to present study<sup>11</sup>. Giedam in 2016 reported higher incidence of vvf in younger patients, the mean age was 22.3  $\pm$  7.24 years. Most of the women were between 15-24 years.<sup>12</sup> In past years obstetric fistula was the main cause of genitourinary fistula. Poor management of obstructed and prolonged labor is the primary cause of fistula in developing countries.<sup>13</sup> Now there is change in trend of VVF development regarding etiology. In present study hysterectomies including abdominal and vaginal contribute to 60% of the fistulas formation. Rates of developed nations as gynecologic surgeries mainly abdominal hysterectomies rather than obstetric traumas are causes of fistulas are closure to our calculations.<sup>14</sup> There should be meticulous dissection of bladder from cervix and proximal vagina, sutures be placed only on vagina without involving fibers of detrusor muscle in order to avoid VVF development.

Excessive use of electrocautery should be avoided while working in close proximity to the bladder. Women with fistula come late to health care facility. Median duration of symptoms in our study was 9 months. This is social debilitating condition and women are neglected in their families that may be the cause of delay in seeking treatment.

There is difference of opinion in route of repair. However it depends upon surgeon experience and nature of fistula. In transvaginal approach simple excision and repair is preferred in some centres with high rates of success.<sup>15</sup> Tatar B et al; used vaginal approach for VVF repair and found less hospitalization time for these patients.<sup>16</sup> Different other techniques have been described but consensus about ideal approach is still needed. Success was seen in 87.5% of patients in present study. In other studies open abdominal approach was used with success rate of 94%<sup>17</sup> higher than our study. Inferior success rate is probably is due to presence of 18 patients with complicated vesicovaginal fistulas. In literature it is reported that extravesical VVF repair has similar cure rates as transvesical VVF repair.<sup>18</sup>

In our study abdominal repair was performed in patients with fistula located at supratriangular area or when there was involvement of ureter. Combined vaginoabdominal approach has been used in many studies for management of VVF.<sup>19</sup> Less invasive techniques also have given excellent results in VVF repair. Some studies show laparoscopic for prevention of infection, postoperative care and duration of catheterization are related with complications of fistula surgery.<sup>22</sup> Vaginal approach for VVF repair has shown excellent results in different studies as well.<sup>23-24</sup> In our study subtrigonal

located fistula was repaired through transvaginal approach. The limitations of our study were relatively small sample size and retrospective nature.

## CONCLUSION

Result of our study reveals that gynecologic surgery is the most common cause of urinary fistula. In cases of previous failed repairs abdominal approach can be used due to its high success rate.

### Author's Contribution:

Concept & Design of Study:	Asif Imran
Drafting:	Tanvir-ul-Haq
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Revisiting Critically:	Asif Imran, Tanvir-ul-Haq
Final Approval of version:	Asif Imran

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

## REFERENCES

- Adler AJ, Ronsmans C, Calvert C, Filippi V. Estimating the prevalence of obstetric fistula: a systematic review and meta-analysis. *BMC Pregnancy Childbirth* 2013;13(246):1–14.
- Raassen TJIP, Ngongo CJ, Mahendeka MM. Iatrogenic genitourinary fistula: an 18-year retrospective review of 805 injuries. *Int J Urol* 2014;25:1699–1706.
- Tebeu PM, Fomulu JN, Khaddaj S, de Bernis L, Delvaux T, Rochat CH. Risk factors for obstetric fistula: a clinical review. *Int Urogynecol J* 2012;23(4):387–394.
- Wall LL. Preventing Obstetric Fistulas in Low-Resource Countries: Insights From a Haddon Matrix. *Obstet Gynecol Surv* 2012;67(2):111–121.
- Roka ZG, Akech M, Wanzala P, Omolo J, Gitta S, Waiswa P. Factors associated with obstetric fistulae occurrence among patients attending selected hospitals in Kenya, 2010: a case control study. *BMC Pregn Childbirth* 2013;13(56):1–7.
- Mellano E, Tarnay CM. Management of genitourinary fistula. *Curr Opin Obstet Gynecol* 2014;26:415–23.
- Wong MJ, Wong K, Rezvan A, Tate A, Bhatia NN, Yazdany T. Urogenital Fistula. *Female Pelvic Med Reconstr Surg* 2012;18(2):71–78.
- Tunçalp O, Tripathi V, Landry E, Stanton CK, Ahmed S. Measuring the incidence and prevalence of obstetric fistula: approaches, needs and recommendations. *Bull World Health Organ* 2015;93(1):60–62.
- Donnelly K, Oliveras E, Tilahun Y, Belachew M, Asnake M. Quality of life of Ethiopian women after fistula repair: implications on rehabilitation

- and social reintegration policy and programming. *Cult Health Sex* 2015;17(2):150–64.
10. Ghoniem GM, Warda HA. The management of genitourinary fistula in the third millennium. *Arab J Urol* 2014;12:97–105.
  11. Etabbal AM, EIKawafi RM, Griew AS. Vesicovaginal fistula diagnosis and repair, Benghazi, Libya (nine years of experience). *Libyan Int Med Univ J* 2016;1:93-105.
  12. Geidam AD, BarkaE. The management of vesicovaginal fistula. *Br J Medicine Med Res* 2016;17(1):1-6.
  13. Hawkins L, Spitzer RF, Christoffersen-Deb A, Leah J, Mabeya H. Characteristics and surgical success of patients presenting for repair of obstetric fistula in western Kenya. *Int J Gynecol Obstet* 2013;120(2):178–82.
  14. Oakley SH, Brown HW, Greer JA, Richardson ML, Adelowo A, Yurteri-Kaplan L, et al. Management of vesicovaginal fistulae: a multicenter analysis from the Fellows' Pelvic Research Network. *Female Pelvic Med Reconstr Surg* 2014;20:7–13.
  15. Sori DA, Azale AW, Gameda DH. Characteristics and repair outcome of patients with Vesicovaginal fistula managed in Jimma University teaching Hospital, Ethiopia. *BMC Urol* 2016;16:41.
  16. Tatar B, Oksay T, Cebe FS, Soyupek S, Erdemoğlu E. Management of vesicovaginal fistulas after gynecologic surgery. *Turkish J Obstet Gynecol* 2017;14(1):45.
  17. Montoya-Martínez G, Ledesma-Rodríguez AG, Serrano-Brambila E, Moreno-Palacios J. VVF: laparoscopic versus open surgical abdominal. *Ginecol Obstet Mex* 2013;81(10):587-92.
  18. Miklos JR, Moore RD, Chinthakanan O. Laparoscopic and robotic-assisted vesicovaginal fistula repair: A systematic review of the literature. *J Minim Invasive Gynecol* 2015; 22(5): 727-36.
  19. Razi A, Mazloomfard MM, Ajami H, Moeini A. Combined vagino-abdominal approach for management of vesicovaginal fistulas: a 10 years' experience. *Arch Gynecol Obstet* 2015; 292(1):121–5
  20. Javali TD, Katti A, Nagaraj HK. A simplified laparoscopic approach to repair vesicovaginal fistula: the M.S. Ramaiah technique. *Urol* 2015;85(3): 544–6
  21. Mallikarjuna C, Nayak P, Reddy KP, Ghose SM, Ragoori D, Bendigeri MT, et al. The AINU Technique for Laparoscopic Vesico-Vaginal Fistula Repair: A Preliminary Report. *Urol Int* 2015; 95(3): 357–60.
  22. Barone MA et al. Breakdown of simple female genital fistula repair after 7 day versus 14 day postoperative bladder catheterisation: a randomized, controlled, open-label, non-inferiority trial. *Lancet*. 2015;386(9988):56–62.
  23. Fang G, Hong L, Li B, Liu C, Wu D, Hong S, et al. Transvaginal genital fistula repair with of Foley catheter via fistula tract. *J Obstet Gynaecol Res* 2015; 41(7): 1049–1055.
  24. Phsak T, Nikolavsky D, Terlecki R, Flynn BJ. Is tissue interposition always necessary in transvaginal repair of benign, recurrent vesicovaginal fistulae? *Urol* 2013; 82(3): 707–712.