

## Outcome of Vesicovaginal Fistula Repair at Urology Department STH Swat

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### ABSTRACT

**Background:** Vesicovaginal fistula is an abnormal passage between the bladder and the vagina, which leads to continuous, involuntary loss of urine through the vagina. It is the most usual type of acquired genitourinary fistulas.

**Objective:** To determine outcomes of vesicovaginal fistula repair at Urology Department, Saidu Teaching Hospital, Swat.

**Material and Methods:** This descriptive study was conducted in Department of Urology, Saidu Group of Teaching Hospitals, Swat from September, 2016 to February, 2019. Patients with age group of 25-65 years, diagnosed with VVF were repaired either through abdominal or vaginal route. These patients were prospectively analysed and the demographic profile, route of surgery and outcomes were noted down.

**Results:** A total of 58 patients were included in the study. The causes were obstructed labour in 26 patients, post-operative trans abdominal hysterectomy and caesarean section in 24 and 6 cases respectively. There was 100% success rate in abdominal repairs as compared to combined approach. Among the post-operative complications, bladder storage dysfunction was on the top, followed by urinary tract infections and wound infections.

**Conclusion:** The most common cause of VVF was prolonged obstructed labour. Overall, the success rate was 96.5%. Irritative lower urinary tract symptoms were most commonly observed post operatively.

**Key Words:** Vesicovaginal fistula, outcomes, repair, complications.

This article may be cited as: Nizamuddin, Elahi F, Ali M, Akbar F, Hussain M, Gul S.

Outcome of Vesicovaginal Fistula Repair at Urology Department STH Swat. J Saidu Med Coll Swat 2020;10(2): 132-134

### INTRODUCTION

Vesicovaginal fistula is an abnormal passage between the bladder and the vagina, which leads to continuous, involuntary loss of urine through the vagina.<sup>1</sup> It is the most usual type of acquired genitourinary fistulas.<sup>2</sup> Though it has become rare in the developed world but still it commonly occurs in the low resourced countries.<sup>3</sup> It has been estimated that approximately three million women have untreated vvf's in the developing countries.<sup>4</sup> Neglected obstructed labour is the major cause of vvf in the under developed world, which results in pressure necrosis which develops as a result of compression of the bladder between the symphysis pubis and impacted fetal head. Hence any instrumentation to this ischemic area can lead to fistula formation.<sup>5,6</sup> Conversely, in the industrialised countries, the most common aetiology is iatrogenic injury, about 60% of which occurs during hysterectomies.<sup>7</sup>

Small size fistulas = 0.5cm, which present as single, non radiated fistulas are termed as simple while recurrent or large sized fistulas = 2.5 cm are

complex ones. Intermediate sized fistulas 0.5 - 2.5 cm are also considered as complex fistulas mostly.<sup>8</sup>

The surgical technique, either tranabdominal (transperitoneal, extra peritoneal), transvaginal, laparoscopic or robotic,<sup>9,10,11</sup> depends upon the expertise, the characteristics of patients and the type of fistula whether it's simple or complex. Simple fistulas can be easily approached vaginally by simple devascularised tissue excision and approximation of the remaining healthy tissues in multiple layers while complex or high fistulas are better approached abdominally.<sup>12</sup> It is important to strictly follow the basic surgical principles defined by Couvelaire in 1953, "good visualization, good dissection, good approximation of the margins and good urine drainage, to maximise the chances of successful vvf repairs."<sup>13</sup>

### MATERIAL AND METHODS

This is a descriptive, prospective study conducted at Urology Department, saidu group of Teaching Hospitals Swat, from September 21, 2016 to February 21, 2019. During the study period, all the patients coming with continuous leakage of urine per vagina and diagnosed on the basis of history, clinical examination and investigations (cystogram and cystoscopy) as vesico vaginal fistula were included. Patients with failed previous repair were also included in the study. The total number of patients was fifty eight (58) with age group ranging between 25-65 years. Informed consent was taken from the patients. After pre

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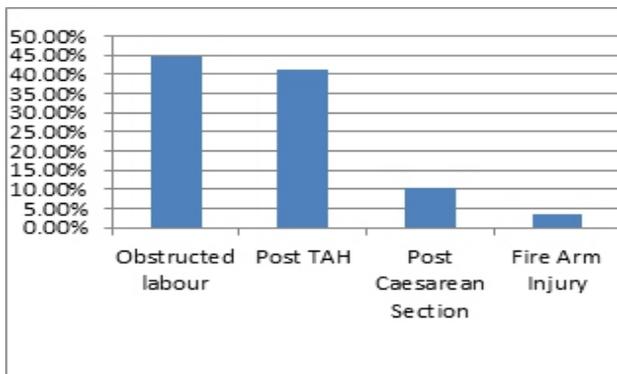
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Received: August 03, 2019 Accepted: July 09, 2020

operative work-up, fistula repair was done either through abdominal or vaginal route in two layers tension free and water tight with absorbable suture, which was decided by the type, size, number and site of the fistula. The patients were kept on antibiotics in the early post operative period and then discharged with indwelling catheter for two weeks. They were called for follow up visits at two weeks initially and then depending on the presence of symptoms later on. These patients were prospectively analysed for two and half years and the data regarding demographic profile of the patients included in the study, nature of fistula, route of surgery and outcomes of repair were noted. Data was collected on preformed designed proforma with informed consent and was analysed on by using SPSS20.

**RESULTS**

A total of 58 vvf repairs were performed over the study period of two and half years. The age range of the patients was 25- 65 years. The causes of vvf in these patients were obstructed labour in 26 cases, followed by post operative trans abdominal hysterectomy (TAH) in 24 patients, post operative caesarean section in 6 and fire arm injury in a 2 cases (see fig.1). Among them 22 were re-do cases with history of failed previous repair, 6 cases were having ureteric involvement among the re-do cases and 4 patients had multiple fistulae among the 36 fresh ones. These repairs were carried out trans-abdominally in 56 patients and via combined approach (trans abdominal & trans vaginal). 2 patients who had multiple fistulae high fistula which was above trigone were repaired transabdominally and low fistula which was lying below trigone was repaired transvaginally. All the cases approached through abdominal route were successful while those with both trans abdominal and trans vaginal approach were failed. Overall, the success rate was 96.5% (see fig.2).

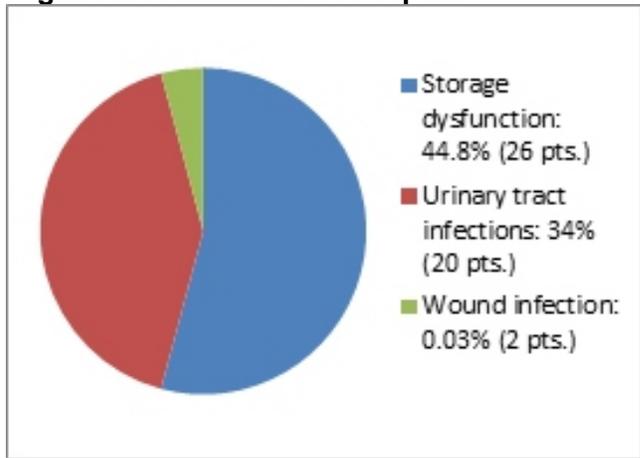


**Fig.1 Aetiology of VVF.**

26 (44.8%) patients developed storage dysfunction post operatively, which was successfully managed with anti-cholinergics. 20 (34%) patients were noted with urinary tract infections and 2(0.03%) with wound infection (see fig.3).

Route of VVF repair	No. of patients	Success rate %
Trans-abdominal	56	100%
Combined ( trans-abdominal & trans-vaginal)	2	0%
Grand Total	58	96.5%

**Fig. 2 Success Rate of VVF repair.**



**Fig. 3 Complications of VVF repair.**

**DISCUSSION**

This study revealed that prolonged obstructed labour was the leading cause of vesico vaginal fistula similar to the results in a study conducted by Wall et al.<sup>14</sup> It was estimated in a study done in West Africa that vvf occurred in 1-3 per 1000 deliveries.<sup>15</sup> This is most probably due to the lack of modern obstetric care and practice of early marriages where mothers experience labour before reaching full maturity. On the contrary, many studies showed gynaecologic surgeries, mostly hysterectomies, to be on the top for causing vvf.<sup>16,17,18,19</sup> The factors affecting success rate of surgical repair of vesico vaginal fistula are radiation, ischemia of the tissue and previously failed repair.<sup>20</sup> None of the patients included in the study had previous history of pelvic irradiation, yet 38% of them were recurrent cases.

Studies conducted by Ockim, et al. reported 75% success rate in abdominal VVF repairs and 94%

success noted by Hadzi-Djokic.<sup>21,22</sup> While our study unveiled that all the patients with vesico vaginal fistulas repaired through abdominal approach were successful. These results were found consistent with study conducted by Rahjamaheeswari.<sup>23</sup> In contrast, it was reported that abdominal fistula repair without omental flap interposition had high failure rates.<sup>24</sup> Our analysis clearly declared that surgical approach affected the outcome of surgery. Combined (trans abdominal and trans vaginal) approach was associated with higher failure rates as compared to abdominal route.

This study made it certain that 45% patients developed lower urinary tract symptoms post operatively as compared to study conducted by Dolan et al. which reported 87% patients having urinary symptoms.<sup>25</sup> The storage dysfunctions of the bladder can affect healing and be a discomfort for patients, which can be effectively managed with anticholinergics.<sup>26</sup>

## CONCLUSION

This study showed that accurate and quick diagnosis is essential for timely repair which can reduce the distress caused by VVF and improve the outcomes. It is important to strictly follow the basic surgical principles to accomplish a successful VVF repair.

This study showed that obstructed labour was on the upward trend for causing VVF. Abdominal vvf repair had increased success rates as compared to vaginal repair, both done without intervening layer. Post operative complications like bladder dysfunctions, urinary tract infections and wound infections were managed successfully.

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