ETIOLOGY AND OUTCOME OF VESICOVAGINAL FISTULAE SURGICAL REPAIR, AN EXPERIENCE OF 58 CASES AT INSTITUTE OF KIDNEY DISEASES HAYATABAD, PESHAWAR

Muhammad Naeem[1], Saadia Shamsher[2], Ihsan Ullah[3], Rizwan Ullah[1], Riaz Ahmad Khan[1], Bakhtawar Gul[1]

ABSTRACT

Objective: To find out the etiology and outcome of surgical repair of Vesicovaginal Fistula (VVF) in patients presenting to Institute of Kidney Diseases Hayatabad Peshawar.

Methodology: This descriptive study was conducted at Institute of Kidney Diseases Hayatabad Medical complex Hayatabad Peshawar from January 2011 to December 2017. A total of 58 patients diagnosed as having VVF were admitted either through OPD or emergency were included in the study. Patients having VVF due to malignancy or radiotherapy were excluded from the study. After taking proper history, clinical assessment, routine investigations and informed consent, patient's data was recorded on a structured proforma. Cystoscopy and vaginal examination were performed. After surgical repair the etiology of VVF and outcome of repair was recorded.

Results: This study included a total of 58 patients aged 18 - 56 years. In 39 (67%) patients, the cause of VVF was iatrogenic injury during hysterectomy while in 19 (33%) patients, it was due to obstetric injury. In 45 (78%) patients, the fistula was supra-trigonal which was operated through trans-abdominal approach while in 13 (22%) patients, it was trigonal or infra-trigonal and was operated through vaginal approach. There was urine leakage in 3 cases of post transabdominal repair and in one case of vaginal repair which were repaired on a second attempt**.** The success rate of abdominal repair was (42) 93.3% in 45 patients and of vaginal repair (12) 92.3% in 13 patients.

Conclusions: Iatrogenic injury during hysterectomy and obstetric injury are the commonest causes of VVF and there is high success rate of repair, if expert hands employ appropriate techniques.

Key words: Urinary incontinence, Vesicovaginal fistula, Transabdominal repair, Trans-vaginal repair.

INTRODUCATION

Vesicovaginal fistula (VVF) is an abnormal communication between the urinary bladder and vagina that allows continuous discharge of urine into the vagina[1]**.** VVF could be congenital or acquired which occurs as a complication of prolonged and obstructed labour[2]. Congenital VVF is rare, while acquired is still the commonest complication of gynaecological and obstetrical interventions. Although, the rate of VVF secondary to gynaecological and obstetric interventions has decreased in the developed world (5-8%) but it is still very common in the developing countries including Pakistan[3,4].

The quality of life with vesicovaginal fistulas is mesrible from multiple aspects. Most of the VVF patients develop depression as well as other social and mental problems and people consider it as a social stigma[5]. The acquired VVF is common in poor socioeconomic class where home births by untrained dais and healthcare workers is commonly practiced and where people has no access to the latest equipment for normal vaginal deliveries and gynecological surgeries[6,7]. The low socioeconomic class also has no access and knowledge of proper antenatal and post natal care which lead to prolonged labour and postnatal complications[8]. This prolonged obstructed neglected labour is associated with pressure necrosis and sloughing of the under-pressure pelvic tissues between the foetus and the pubic symphysis which lead to fistula formation[9]. Some national and international studies labeled obstetrical trauma to be the major cause of VVF in the under developed world[10], but more recently the highest incidence of VVF is seen in patients undergoing gynaecological surgeries in the periphery rather than obstetrical complication as reported by Jafari AA et al.[11]

This shift of the etiology of VVF from obstetrical to gynecological interventions is probably due to the improvement of basic healthcare facilities in the periphery and gradual awareness of referral system of difficult deliveries to tertiary care hospitals in our country. The possible explanation of the increased rate of VVF in patients undergoing gynaecological surgeries in the periphery may be due to lack of experienced surgeons at the district and tehsil headquarter level hospitals, and

1 Department of Urology IKD Hayatabad Medical Complex Peshawar
2 Department of Gynae & Obs HMC Peshawar
3 Department of Microbiology KMU Peshawar

Address for correspondence:
Dr. Muhammad Naeem
Associate Professor of Urology
Department of Urology IKD Hayatabad Medical Complex Peshawar
Cell No: 03339119697
E-mail: mnaeem04@yahoo.com

a highest prevalence of infection due to lack of proper sterilisation. Some studies have also highlighted the fact that the present prevalence of VVF in the developing world including Pakistan is just an ice-burg. The prevalence is largely under reported due to some social constraints and needs proper attention to get a full picture of the problem[12]. The World Health Organization report on VVF secondary to obstetric causes seems deficient, because their figures show only those women seeking treatment for the problem[13]. A population based survey is required to find out the etiology and actual burden of the disease.

Surgical repair is the most common treatment for VVF in most of the congenital and acquired fistulas. Multiple surgical repair methods are adopted by urologists and gynecologists and in most of the cases success rate of surgery is promising. Vesico-vaginal fistula is most commonly repaired transvaginally as most of the gynecologist finds this approach more convenient. In general up to 80% fistulae are repaired transvaginally. Transabdominal route is adopted mostly by urologists particularly in cases where the fistula is too large and lying high up which is difficult to be repaired transvaginally. In most of the cases around 90-91% of surgeries are successful as reported by Angioli et al. [14,15]

The choice of procedure in a particular patient depends upon location of fistula, presence or absence of vaginal stenosis and experience of surgeon. To increase vascularity and provide support to the repaired tissue synthetic and tissue graft interposition in between bladder and vaginal wall is done[16]. This study was conducted to find out the etiology and outcome of Vesicovaginal fistulae repair of patients admitted to Institute of Kidney Diseases Hayat Abad Peshawar.

MATERIAL AND METHODS

This study was conducted at the Institute of Kidney Diseases Hayatabad Medical complex Hayatabad Peshawar from January 2011 to December 2017. All those patients presented to our outpatient (OPD) or Emergency Department with the complaints of urinary incontinence and diagnosed as having VVF were included in the study. All the patients were admitted to the hospital after completing 3 months of initial injury to the urinary bladder causing VVF. Patients having VVF due to malignancy, radiotherapy or complex fistulae were excluded from the study. After taking proper history, clinical assessment, routine investigations and informed consent, patient's data was recorded on a structured proforma. Cystoscopy and vaginal examinations were performed to know about the site of fistulas. It was noted whether the location of fistulas was supra-trigonal or trigonal/ infra-trigonal. After preparing the patients supra-trigonal fistulae were repaired trans-abdominally with interrupted sutures after proper separation of tissues under general anaesthesia. In 2 cases, omental interposition was done between the urinary bladder and vaginal wall while in 3 cases peritoneum was interposed. Suprapubic and urethral catheters were put in. In cases of trigonal and infra-trigonal fistulae a vaginal approach was used for the repair under spinal anaesthesia and urethral catheter was put in. Catheters were removed after 7-12 days. The etiology of fistulae and outcome of surgical repair were recorded.

RESULTS

This study was conducted on a total of 58 patients from January 2011 to December 2017. Patients aged 18 - 56 years were included in the study. The highest number of patients were in between 30-40 years**.** The mean age of the sample was 35 $\pm$ 7 years**.**

Out of 58 patients, 39(67%) were having VVF secondary to an iatrogenic injury during hysterectomy where 35(60%) were having VVF from transabdominal surgeries and 4(7%) from transvaginal surgeries. While in 19(33%) patients it was due to obstetric injury where 15(26%) from lower segment C – Section and 4(7%)

Table 1: Etiological distribution of Vesicovaginal fistula (n=58)

Cause	Route	Number of patients	%age
Gyneco-logical surgeries	Trans-abdominal	35	60
	Trans-vaginal	4	7
Obstetrical causes	Lower segment C-Section	15	26
	Obstructed labour	4	7

Table 2: Position of fistulae and route of repair (n=58)

Position and Route of repair	Number of patients	%age
Supratrigonal fistulae / Transabdominal repair	45	78
Trigonal – Infra-trigonal fistulae/ Vaginal repair	13	22

Table 3: Outcome of VVF repair (n=58)

Route of repair	Number of patients operated	Success rate
Transabdominal repair	45	(42) 93.3%
Transvaginal repair	13	(12) 92.3%

cases were secondary to obstructed labour as shown in Table-1.

In 45(78%) patients, the location of fistula was supra-trigonal while in13(22%) patients it was trigonal or infra-trigonal. Abdominal approach was selected to reach supra-trigonal fistulae because it was easily approachable by this route. In 2 cases, omental patch was interposed between the bladder and vaginal wall while in 3 cases peritoneum was interposed. The trigonal or infra-trigonal fistulae were easily approached and best repaired by vaginal approach. (Table-2)

Most of the surgeries went well but only 6(13%) patients were having mild hematuria and 3 (6.6%) patients developed wound infection which were treated conservatively. 3(7%) cases of transabdominal repair and one (7.7%) case of vaginal repair developed urinary leakage which were repaired on a second attempt. The success rate in transabdominal repair was (42) 93.3% out of 45 patients while in transvaginal repair it was (12) 92.3% out of 13 patients. Table 3. The overall success rate is 92.8%.

DISCUSSION

Vesicovaginal fistulae are mostly seen in all age groups women but the highest incidence is in child bearing age group. Majority of VVF is caused by obstetrical trauma or gynecological surgery. Our study shows that 39 out of 58 patients developed VVF due to gynecological surgeries in which 35 were those who underwent abdominal hysterectomy and 4 patients under went vaginal hysterectomy, while in 19 out of 58 patients were those who developed VVF due to obstetrical complications where 15 patients had undergone lower segment C- section and 4 patients had undergone obstructed labour. Our results are in contrast to Moudini S. et al.[17] and Hafeez M et al.[18] where the incidence is higher in obstetrical surgeries. In our study most of our referred patients having VVF were operated by inexperienced surgeons in the periphery. Our study is comparable to results of the study conducted by Jafari AA et al.[11] who showed that the commonest cause of VVF is iatrogenic injury during hysterectomy either transabdominal or transvaginal .

The success of VVF has been regarded as closure of fistula so that the patient should become continent. In our study, the success rate is good and comparable to most of the national and international studies. The success rate of our study of transabdominal repair was (93.3%) while in transvaginal repair it is (92.3%). The overall success rate is 92.8%, which is quite reasonable due to trained urologist and excellent facilities at our set up than a study conducted at gynecological set up by Nargis et al.[19] which showed success rate of 67%. Similarly our results are nearly comparable to a study on vaginal repair by Rasool M et al[20] showing 100% success rate. Our study is also comparable to the study conducted by Wahab F et al [21] comprising of 30 patients showing 93.3% success rate.

CONCLUSION

Iatrogenic injury during hysterectomy and obstetric injury are the commonest causes of VVF and there is high success rate of repair, if expert hands employ appropriate techniques.

REFERENCES

1. Ghoniem GM, Hussein A.WardaThe management of genitourinary fistula in the third millennium. Arab J Urol 2014; 12 (2) 97-105
2. Sander PS. Surgical repair of vesicovaginal fistula. J Coll Physician Surg Pak. 2002; 12:223-6
3. Ramphal S, Moodley J. Vesicovaginal fistula: Obstetric causes. Curr Opin Obstet Gynecol 2006;18(2):147-51
4. Hilton P. Vesicovaginal fistula in developing countries. Int J GynaaecolObstet (Ireland) 2003;82:285-95
5. Bohio R, Brohi ZP, Bohio F. Vesicovaginal fistula; Depression among women. Professional Med J 2015;22(6):804-10
6. Khan AL, Khan M, Bano A. Vesicovaginal fistula; surgical management. Professional Med J 2004; 11:261-66.
7. Mathur R, Joshi N, Aggarwal G, Raikwar R, Shrivastava V, Mathur P, Raikwar P, Joshi R Urogenital fistulae: A prospective study of 50 cases at a tertiary care hospital. Urol Ann 2010; 2:67-70
8. Savan K, Ekin M, Kupelioglu L, Oral S, Yasar L. Surgical repair of genitourinary fistulae: comparison of our experience at Turkey and Niger. Arch Gynecol Obstet. 2010; 282:649-53.
9. Christoper J. Hillary, Christoper B.Chapple. The choice of surgical approach in the treatment of Vesico vaginal fistulae. Asian Journal of Urology 2018; 5 (3): 155-59
10. Nargis S, Raheela, Shereen. Six year experience of repair of vesico vaginal fistulae at gynae unit 11 Civil Hospital Karachi. Medical Channel 2007; 13: 67-69.
11. Jafari AA, Subhani G, Munir M, Akmal M, Javed S, Iqbal Z. Vesicovaginal fistula, causative factors and outcome of surgical management. An experience at PMC/Allied Hospital Faisalabad. Annals of Punjab Medical College 2012; (2): 150-55
12. Maimoona H, Shaheena A, Hajira H. Profile and repair success of vesicovaginal fistula in Lahore. J Coll Physician Surg Pak. 2005;15:142-4
13. Karshinia JA and Otubu JAM. Fistula In: Agboola A. (Ed) Textbook of Obstetrics and Gynaecology for medical students. Heinemann Educational Books (Nig) Plc 2006; 2nd edition:39-51
14. Angioli R, Penalver M, Muzii L, Mirhashemi R, Bellati F. Guidelines of how to manage vesicovaginal fistula. Crit Rev Oncol Hematol. 2003; 48(3):295-304.

15. Miller EA, Webster GD. Current management of vesicovaginal fistulae. Cur Opin Urol. 2001;11:417-21

16. Tariq M, Ahmed I, Arif M,Ali AM, Khan IM. Comparision of outcome of vesico-vaginal fistula repair with and without omental patch. Ann Pak Inst Med Sci. 2011; 7(3): 123-126

17. Moudini S, Nouri M, Koutani A, IbnAttya A, Hacimi M, Lakrissa A. Obstetrical vesicovaginal fistula. Report of 114 cases. ProgUrol 2001; 11:103-8.

18. Hafeez M, Asif S, Hanif H.Profile and repair success of vesicovaginal fistula in Lahore. J Coll Physicians Surg Pak. 2005; 15: 142-4.

19. Nargis S, Raheela, Shereen. Six-year experience of repair of vesico vaginal fistulae at gynae unit 11 civil hospital Karachi. Medical Channel 2007; 13: 67-69.

20. Rasool M, Mumtaz F, Tabassum SA. Vesico Vaginal Fistula Repair; Urologist's experience at Bahawalpur. The Professional Med J. 2006; 13(3): 445- 52.

21. Wahab F, Nasir A, Manan F. Outcome of VVF repair without omental interposition J Pak Med Assoc.2016; 66 (5): 590-92.