Uro - Vaginal Fistula repair – Critical auditing of our failures

Authors
Dr Fanindra Singh Solanki[$]
Dr Deepti B. Sharma**
Dr Anurag Dubey[#]
Dr Shabbir Hussain*
Dr Pawan Agarwal**
Dr Dhananjaya Sharma***
 # Associate professor, Department of Urology
[$] Professor & Head of the Department of Urology
**Associate professor*
***Professor*
**** Professor & Head of the Department*

,,*** Department of Surgery*
N.S.C.B. Medical College and Hospital
Jabalpur (M.P.) India
Corresponding author-
Dr Anurag Dubey
Department of Urology
N.S.C.B. Medical College and Hospital
Jabalpur (M.P.) India
Mobile number- +919926107862
e-mail address – anuragssmc@gmail.com
Word count
Abstract – 150
Manuscript - 1302
Keywords – Uro-vaginal fistula, Auditing, Failures
Financial disclaimer/conflict of interest: - none.

Introduction

Uro- vaginal fistula is a social stigma for the patients and causes physical and psychosocial disability. Obstetric injuries constitute the most common cause of Uro- vaginal fistula in developing countries. (1,2) uro- vaginal fistulas can be treated trans-vaginally, trans-abdominally, or as combination of both approaches however uniform guidelines for the management of VVF are not well established due to variable presentation. Hence, the management protocol is dependent on the type of fistula, its complexity, available tissue for repair, existing resources, and preference of treating surgeon. (3,4) Social stigma and hesitation for their treatment causes immense pressure on treating surgeons for good and

early management, once these patients approach the medical facility. Surgical auditing is important to improve outcome to identify the probable cause of failure. (5).

Material and Methods

It is a retrospective study of the cases of uro vaginal fistulas in Urology unit, department of Surgery in a tertiary care hospital over a period of ten years. (from 2007 to 2017) All the records of operated cases of uro-vaginal fistula were extracted and critical analysis was done. All the records of operated cases of uro-vaginal fistula at three different hospitals were procured and critical analysis was done by a team of Surgeons.

Demographic details such as age, medical history, duration of the urinary leak, operative details, and outcome was noted. (Table 1)

The Primary outcome was identified as the leak from the vagina within a month of operation and factors responsible for the failure was identified.

Results

82 cases with uro vaginal fistulas were included. The age range is 23 - 60 years (Mean age-32.5years). The duration of symptoms was ranging from three weeks to twelve years. There were 63 simple fistulas and 19 were complex types. Common causes include Hysterectomy (n=39) and obstetric trauma (n=33). 11 patients had a history of previous failed repair and 71 patients had primary repair. (Table -1)

The transvaginal repair was done in 44 patients and 33 patients by an abdominal route with omental interposition. 4 patients had both abdominal and vaginal routes and 1 patient was operated on by laparoscopy. 33 patients out of 44 vaginal repairs had Martius flap interposition between vagina and bladder but in 11 patients no interposition tissue was used. Martius flap was not used in some cases of small fistulas and in other cases due to technical difficulty. All the patients healed well except 9 patients developed urinary leak postoperatively. The most common cause of leak was complex fistula and no interposition of flap. one case post- hysterectomy was operated within 3 weeks in a small setup with limited resources like poor OT light and OT armamentarium because of the colleague's pressure. Table-2

In simple fistula, leak rate was 7.9% as compare to complex fistula where 21% patients had leak. 27.3% patients with transvaginal repair without any interposition flap developed fistula. (Table -2)

Discussion

Uro-vaginal fistulas causes severe physical, and psycho-social burden on patients. The exact incidence of fistulas is difficult to estimate however the incidence varies between 0.3% and 2.0%. (1,2,3) In developed countries the cause is predominantly the pelvic surgery or radiation therapy while Obstetric trauma is more common in developing countries (4,6)

There are no standard definitions of fistula characteristics. Degree of scarring, tissue loss, and bladder size are all subjectively assessed by surgeons. (7) These fistulas can be divided

into simple and complex (3) according to their size, number condition of urethra / bladder, and available nearby tissue.
All patients need a comprehensive diagnostic workup. (4) Cystourethroscopy is an essential preoperative procedure to assess the size, number, location and proximity to ureteral opening. (8) Depending on diagnostic characteristics fistula repair can be performed by a transvaginal, transabdominal, or minimally invasive approach. (4)
Principles that underpin VVF repair remain the same. The repair should be tension-free, watertight, and absence of infection(9) Delayed repair is better than earlier when there is no active inflammation, infection, and necrosis. (1,3) Waiting at least 4–6 weeks before attempting repair of a vesicovaginal fistula is highly recommended (10)
Factors other than fistula characteristics, surgeon skill, peri-operative procedure, and post operative care are equally in determining fistula closure. (7, 4)
The tissue at the site of repair should be healthy. (9) (11) Well vascularised interposition flap is an essential part of successful repair especially in complex fistulas,(11)
Complex (V VF) fistulae were challenging and a quarter of them required more than one attempt. (11) Scarring and urethral involvement were associated with poor prognosis across all outcomes. (7) Complex fistulas having Urethral loss, large fistula size, and vaginal scarring are significantly associated with failure of repair. (12)(11)(13) Management of VVF is individualized and also dependent of surgeon experience and expertise (14)

Our failures taught us that preoperative cysto-urethroscopy along with good vascularised interposition flap is an essential part of the repair. Repair should not be done in haste. A compromised operative environment leads to compromised repair and results in failure.

Conclusion - Failures were significantly associated with complete or partial urethral destruction, severe vaginal scarring, previous repair, fistula location, and the circumferential involvement. Preoperative cystoscopy is mandatory pre-evaluation. One should not compromise standard protocols for management and repair should not be done in haste. Preoperative cystoscopy is mandatory pre-evaluation and the surgeon should not compromise with unnecessary pressure and operative armaments. Meticulous repair in complex fistula with tissue interposition is important. One should learn from their failures and always try to provide the best care to these needy females.

The Authors declare that there is no conflict of interest.

References

1. Malik MA, Sohail M, Malik MT, Khalid N, Akram A. Changing trends in the etiology and management of vesicovaginal fistula. Int J Urol 2018;25:25-9.

2. Wall LL. Obstetric vesicovaginal fistula as an international public-health problem. Lancet 2006;368:1201-9.

3. Rajaian S, Pragatheeswarane M, Panda A. Vesicovaginal fistula: Review and recent trends. Indian J Urol. 2019;35(4):250-258. doi:10.4103/iju.IJU_147_19

4. Marks P, Kluth LA, Lang IJ, Fisch M. Vesikovaginale Fisteln: Diagnostik und operatives Management [Vesicovaginal fistulas: diagnosis and surgical management]. Urologe A. 2020 Apr;59(4):432-441.

5. Munabi I G, T. Makumbi T, Sebwufu R, Mirembe F. Surgical Audit of Vesico-Vaginal Fistulae Repairs by on the Job Trained Medical Officers in a Rural Hospital, Kagando, Western Uganda.. East and Central African Journal of Surgery (2006). (ISSN: 1024-297X). 11. 28-31.

6. El-Azab AS, Abolella HA, Farouk M. Update on vesicovaginal fistula: A systematic review. Arab J Urol. 2019 Apr 4;17(1):61-68.

7. Frajzyngier V, Ruminjo J, Barone MA. Factors influencing urinary fistula repair outcomes in developing countries: a systematic review. Am J Obstet Gynecol. 2012;207(4):248-258. doi:10.1016/j.ajog.2012.02.006

8. Meeks, G, Ghafar, M, *Glob. libr. women's med., (ISSN: 1756-2228)* 2012; DOI 10.3843/GLOWM.10064

9. Garthwaite M, Harris N. Vesicovaginal fistulae. Indian J Urol. 2010 Apr;26(2):253-6. doi: 10.4103/0970-1591.65400. PMID: 20877605; PMCID: PMC2938551

10. Angioli R, Penalver M, Muzii L, Mendez L, Mirhashemi R, Bellati F, Crocè C, Panici PB. Guidelines of how to manage vesicovaginal fistula. Crit Rev Oncol Hematol. 2003 Dec;48(3):295-304. doi: 10.1016/s1040-8428(03)00123-9. PMID: 14693342

11. Ockrim JL, Greenwell TJ, Foley CL, Wood DN, Shah PJ. A tertiary experience of vesico-vaginal and urethro-vaginal fistula repair: factors predicting success. BJU Int. 2009 Apr;103(8):1122-6. doi: 10.1111/j.1464-410X.2008.08237.x. Epub 2009 Jan 20. PMID: 19154500

12. Nardos R, Browning A, Chen CC. Risk factors that predict failure after vaginal repair of obstetric vesicovaginal fistulae. Am J Obstet Gynecol. 2009 May;200(5):578.e1-4. doi: 10.1016/j.ajog.2008.12.008. Epub 2009 Feb 6. PMID: 19200932.

13. Nsambi J, Mukuku O, Kakudji P, Kakoma JB. [Model predicting failure in surgical repair of obstetric vesicovaginal fistula]. The Pan African Medical Journal. 2019 ;34:91. DOI: 10.11604/pamj.2019.34.91.20547. PMID: 31934234; PMCID: PMC6945673.

14. Lo TS, Chua S, Wijaya T, Kao CC, Uy-Patrimonio MC. Clinical relevance and treatment outcomes of vesicovaginal fistula (VVF) after obstetric and gynecologic surgery. Taiwan J Obstet Gynecol. 2019 Jan;58(1):111-116. doi: 10.1016/j.tjog.2018.11.021. PMID: 30638463.