

Resection of longitudinal vaginal septum and vaginal repair of supratrigonal vesicovaginal fistula

¹Dr Anuja Bhalerao, MS, Head of Department, Department of Obstetrics and gynaecology, N K P S I M S and Lata Mangeshkar Hospital, Nagpur, Maharashtra

²Dr. Snehal Ashok Naphade, MS, DNB, FMAS, FICOG, Senior Resident, Department of Obstetrics and gynaecology, N K P S I M S and Lata Mangeshkar Hospital, Nagpur

³Dr Kritika Bhalerao, MBBS, Resident, Department of Obstetrics and Gynaecology, J N Medical College, Sawangi, Wardha, Maharashtra

Corresponding Author: Dr. Snehal Ashok Naphade, MS, DNB, FMAS, FICOG, Senior Resident, Department of Obstetrics and gynaecology, N K P S I M S and Lata Mangeshkar Hospital, Nagpur

Citation this Article: Dr Anuja Bhalerao, Dr. Snehal Ashok Naphade, Dr Kritika Bhalerao, “Resection of longitudinal vaginal septum and vaginal repair of supratrigonal vesicovaginal fistula”, IJMSIR- October - 2021, Vol – 6, Issue - 5, P. No. 36 – 40.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Introduction: Vesicovaginal fistulae (VVF) are an unpleasant complication of pelvic surgery in women. Improved obstetric care has minimized the occurrence of obstetric fistulae, and high percentage of VVF encountered these days is of gynecological origin.

An interesting and rare case of post hysterectomy supratrigonal VVF with longitudinal vaginal septum managed successfully with septum resection and fistula repair vaginally is being reported.

Objective: To report this case as it is rare to see combination of VVF and vaginal septum.

To impress the appropriateness of vaginal approach for gynecological supratrigonal vesicovaginal fistula repair with resection of longitudinal vaginal septum.

Results: Septum resection and subsequent vaginal repair was done successfully for post hysterectomy supratrigonal VVF.

Conclusion: Presence of Mullerian duct anomalies with Vesicovaginal fistulae doesn't change the approach for repair of supratrigonal VVF. Vaginal approach should be preferred over abdominal approach for repair of vaginally accessible supratrigonal VVF of gynecological origin even in presence of a longitudinal vaginal septum.

Keywords: gynecological supratrigonal vesicovaginal fistulae, vaginal repair

Introduction

Vesicovaginal fistulae (VVF) is a dreadful complication of pelvic surgery in women, leaving affected women with continuously leaking urine, excoriation of vulva and vagina, often rendering them social outcasts. Improved obstetric care has minimized the occurrence of obstetric fistulae ^{1,2} and high percentage of VVF encountered these days are of gynecological in origin.

In the early and middle of 19th century, all the urogenital fistulae were repaired by gynecologists by vaginal route irrespective of their location. Subsequently, as specialization emerged, surgical management of fistulae was shared between gynecologists and urologists.

Both vaginal^{3,4} as well as abdominal approach^{5,6,7} are described for VVF repair. Each approach has its merits and demerits. The key to successful repair of VVF lies in the classic principles defined by

Couvellaire in 1953, "good visualization, good dissection, good approximation of the margins and good urine drainage post operatively."⁸

Anatomical proximity of genital tract to lower urinary tract explains the more frequent occurrence of lower urinary tract fistulae, more so when they are associated with mullerian duct anomalies.

The incidence of mullerian duct anomalies is 0.001 to 10%⁹. A longitudinal vaginal septum develops during embryogenesis when there is an incomplete fusion of the lower parts of the two Mullerian ducts.

The septum divides the vagina partially or completely. It may present clinically as difficulty in inserting tampons, persistent bleeding despite the presence of a tampon, or dyspareunia. On the other hand, it may be asymptomatic.

This article shares a rare case of Longitudinal Vaginal Septum with gynecological supratrigonal VVF.

Case Summary

A 42 years old, unmarried lady who had attained surgical menopause 1 year back. came with history of continuous dribbling of urine since 11 months following an abdominal hysterectomy for fibroid uterus. she started urinary leak on 10th postoperative day, for which she was catheterized for 2 months. she

was able to pass urine, there was no history of UTI or hematuria. She was unmarried and surgical history revealed that she underwent myomectomy for fibroid uterus 13 years back for menorrhagia and an abdominal hysterectomy for fibroid uterus 11 months back.

On P/A examination a midline scar of laparotomy and hysterectomy was there, on general examination her vitals were stable, cardiovascular system and respiratory system were normal. As she was unmarried per speculum and per vaginal examination was not done.

Patient was evaluated preoperatively by history, physical examination, serum creatinine, ultrasonography KUB which was normal.

Cystoscopy was performed to determine the site, size and number of the fistulas along with the assessment of the mucosa around the fistulous opening. There was 1cm size, single supratrigonal fistula more towards left orifice. Methylene blue test was done and blue colored fluid was seen coming through vaginal opening. After preoperative assessment woman was posted for surgery. Vaginal speculum examination was done in operation theatre to assess the vaginal capacity and vaginal mucosal integrity, a incomplete thick, fleshy AP vaginal septum was detected of 1cm thick, 4 cm in size which was partial and was excised carefully. On the basis of site, size, etiology and associated longitudinal vaginal septum, fistula was labelled complex.

Publications in both national and international literature recommend surgery in all cases of Longitudinal Vaginal Septum. Excision is the procedure of choice for the treatment of longitudinal vaginal septum; however, care should be taken not to provoke any accidental injury to the rectum or bladder.¹⁰

Surgical excision of the longitudinal vaginal septum was done followed by vaginal repair of VVF in lithotomy position under regional anesthesia. Circumferential incision was made around the fistulous opening after infiltrating the vaginal edges of the fistulous tract with saline adrenaline mixture. Adequate mobilization of vagina from the underlying bladder ensured tension free closure. Suprapubic catheter was placed vaginally through the fistulous tract. Bladder end of the fistula was trimmed in case of extensive fibrosis. Bladder was closed in two layers using 3-0 vicryl, first layer as full thickness by continuous interlocking sutures. Sero-muscular layer of bladder was approximated by interrupted sutures as second layer.

Bladder was drained with per urethral catheter and suprapubic catheter for 14 days postoperatively.

Discussion

Vesicovaginal fistulas are among the most distressing complications of obstetric and gynecologic procedures. The condition is a socially debilitating problem with important medicolegal implications. In contrast to the western world, obstetric VVFs remain a major medical problem in many underdeveloped countries with a low standard of antenatal and obstetric care. In contrast to the postsurgical fistula, which is usually the result of more direct and localized trauma to otherwise healthy tissues. Review reveals that abdominal hysterectomy is the most common cause for the development of iatrogenic fistulae as reported in literature.^{8,9,10}

Various methods of fistula repair have been described, Latzko procedure, open transabdominal, transvaginal, laparoscopic, transurethral endoscopic and urinary diversion depending on the characteristics of the fistula.

The vaginal approach essentially involves adequate exposure and dissection of fistulous tract along with layered closure of the fistula with or without an interposition flap.¹¹⁻¹³ The most frequently used abdominal approach nowadays is the O' Connors bivalve technique.⁸ The success rate has varied between 75–95% with these various techniques.

In spite of the management being better defined and standardized over the last decade the surgical approach has always been an issue of contention for the repair of VVF. The fundamental treatment principles for VVF repair (adequate exposure, tension-free approximation of the fistula edges, good hemostasis, watertight closure and adequate postoperative bladder drainage) can be achieved through both, vaginal and abdominal route, depending upon the surgical experience.

Transvaginal exposure of vesicovaginal fistulas may be a little challenging but it has been shown to be associated with less blood loss, morbidity and shorter hospital stay.^{6,12} especially when they are associated with mullerian anomalies like longitudinal vaginal septum. where surgical excision of septum following principles of septum resection followed by VVF repair vaginally after assessing vaginal capacity and accessibility.

The factors like fistula size, closeness of fistula to the ureteric orifice and time interval of injury now hardly affect the choice of repair and nowadays there is a trend more towards the transvaginal approach.^{12,13} Transvaginal exposure of VVF may be a little difficult which may be lessened by catheterization of the fistula with a Foley catheter and use of the inflated balloon for traction enables the operating surgeon to pull it closer to view.^{5,6,12} ,raising adequate vaginal and bladder flaps obviates the need of these two steps.^{12,13}

a transverse closure is preferable over a vertical one. Vertical closure would be more likely to produce ureteral obstruction because the ureteral orifices would be drawn inward toward each other. Patients with small bladders need augmentation cystoplasty in addition to the VVF repair.

Furthermore, to improve the results of fistula repair various grafts and flaps have been interposed between the bladder and vagina to promote healing and decrease the incidence of fistula recurrence.^{12,13} Recently, the laparoscopic approach has been used for VVF repair which follows the same principles as of standard abdominal approach, however, only limited numbers of patients are reported till date.

Nesrallah et al. evaluated the success rate of transperitoneal O'Connor's procedure to be 100% and considered it to be the gold standard for supratrigonal fistulae.⁷ Cetin et al,¹⁴ Mumtaz Rasool et al. in 2006.¹⁵, Abhay Kumar et al. in 2009¹⁶ advocated abdominal approach for fistulae located above the interureteric ridge. On the contrary, Joao Paulo, Zambon et al.(2010)¹³, Rakesh Kapoor et al.(2007)¹⁷ postulated that all supratrigonal VVF need not be repaired abdominally by virtue of their high location as nearly three fourth of gynecological supratrigonal VVF can be repaired vaginally with success rate comparable to abdominal repair.

Conclusion

Mullerian duct anomalies doesn't change the approach for repair of supratrigonal VVF. The approach for the management of VVF has to be individualized depending on the local findings vaginal approach should be preferred over abdominal approach for repair of vaginally accessible supratrigonal VVF of

gynecological origin even in presence of a longitudinal vaginal septum.

References

1. Blaivas JG, Heritz DM, Romanzi LJ. Early versus late repair of vesicovaginal fistulas: Vaginal and abdominal approaches. *J Urol* 1995;153:1110-2. [PUBMED]
2. Wall LL, Arrowsmith SD, Briggs ND, Browning A, Lassey A. The Obstetric Vesicovaginal Fistula in the Developing World. *Obstet and Gynecol Surv* 2005;60:S3-S51. [PUBMED]
3. Frohmüller H, Hofmockel G. Transvaginal closure of vesicovaginal fistulas. *Urologe A* 1998;37:70-4.
4. Tancer ML. Observations on prevention and management of vesicovaginal fistula after total hysterectomy. *Surg Gynecol Obstet* 1992;175:501-6.
5. Mubeen RM, Naheed F, Anwar K. Management of vesicovaginal fistulae in urological context. *J Coll Physicians Surg Pak* 2007;17:28-31.
6. Dalela D, Ranjan P, Sankhwar PL, Sankhwar SN, Naja V, Goel A. Supratrigonal VVF repair by modified O'Connor's technique: An experience of 26 Cases. *EurUrol* 2006;49: 551-6.
7. Nesrallah LJ, Srougi M, Gittes RF. The O'Connor technique: the gold standard for supratrigonal vesicovaginal fistula repair. *J Urol* 1999;161:566-8.
8. Couvelaire R. Reflections on a personal statistics of 136 vesicovaginal fistulas. *J Urol Medicale Chir.* 1953;59:150-60. [PubMed]
9. S. J. Brown and S. Z. Badawy, "A rare müllerian duct anomaly not included in the classification system by the American Society for Reproductive Medicine," *Case Reports in Obstetrics and*

- Gynecology, vol. 2013, Article ID 569480, 3 pages, 2013. View at Publisher · View at Google Scholar
10. B. Haddad, C. Louis-Sylvestre, P. Poitout, and B. J. Paniel, "Longitudinal vaginal septum: a retrospective study of 202 cases," *European Journal of Obstetrics & Gynecology and Reproductive Biology*, vol.74, pp. 197–199, 1997.
 11. Lee RA, Symmonds RE, Williams TJ. Current status of genitourinary fistula. *Obstet Gynecol* 1998;72:313-9.
 12. Eilber KS, Kavalier E, Rodríguez LV, Rosenblum N, Raz S. Ten-year experience with transvaginal vesicovaginal fistula repair using tissue interposition. *J Urol* 2003;169:1033-6.
 13. Zambon JP, Batezini NS, Pinto ER, Skaff M, Girotti ME, Almeida FG. Do we need new surgical techniques to repair vesico-vaginal fistulas? *Int Urogynecol J* 2010;21:337-42.
 14. Cetin S, Yazicioglu A, Ozgur S, Ilker Y, Dalva I. Vesicovaginal fistula repair: a simple suprapubic transvesical approach. *Int Urol Nephrol* 1988;20:265-8.
 15. Rasool M, Tabassum SA, Mumtaz F. Vasico-vaginal fistula repair urologist's experience at bahawalpur. *Professional Med J* 2006;13:445-52.
 16. Kumar A, Goyal NK, Das SK, Trivedi S, Dwivedi US, Singh PB. Our experience with genitourinary fistulae. *Urol Int* 2009;82:404-10.
 17. Kapoor R, Ansari MS, Singh P, Gupta P, Khurana N, Mandhani A, et al. Management of vesicovaginal fistula: An experience of 52 cases with a rationalized algorithm for choosing the transvaginal or transabdominal approach. *Indian J Urol* 2007;23:372-6.