Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Obstetrics and Gynaecology

Genitourinary Fistula: A Summary of 18 Years' Experience in Rajshahi Medical College Hospital, Rajshahi, Bangladesh

Nazmun Nahar[1*], Sheikh Mohd. A. Hakim[2], Shipra Chaudhury[3], Md. Zillur Rahman[4], Mst. Shorifa Rani[5], Nasim Parvej[6], Anika Ahmed[7]

[1]Assistant Professor, Department of Obstetrics and Gynaecology, Rajshahi Medical College, Rajshahi, Bangladesh
[2]Assistant Professor, Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh
[3]Professor (Ex), Department of Obstetrics and Gynaecology, Rajshahi Medical College, Rajshahi, Bangladesh
[4]Associate Professor, North Bengal Medical College, Sirajganj, Bangladesh
[5]Junior Consultant (Obs and Gynae), Upazilla Health Complex, Charghat, Rajshahi, Bangladesh
[6]Medical Officer, Upazilla Health Complex, Mohonpur, Rajshahi, Bangladesh
[7]Medical Officer, Upazilla Health Complex, Paba, Rajshahi, Bangladesh

DOI: 10.36347/sjams.2022.v10i06.002 | **Received:** 18.04.2022 | **Accepted:** 30.05.2022 | **Published:** 03.06.2022

***Corresponding author:** Nazmun Nahar
Assistant Professor, Department of Obstetrics and Gynaecology, Rajshahi Medical College, Rajshahi, Bangladesh

Abstract **Original Research Article**

Background: Vesico-vaginal fistula is a chronic health condition when abnormal connection between bladder and vagina is seen and causes constant dribbling of urine through vagina. Uretero-vaginal fistula (UVF) defines an abnormal communication between the ureter and vagina which causes urinary incontinence, frequent infection, and discomfort. ***Methods:*** This observational longitudinal study was conducted in between 2005- April 2022, at the department of Obstetrics and Gynae in Rajshahi Medical College Hospital, Rajshahi, Bangladesh. The total sample size for this study was 503. ***Result*:** Most of the patients 127(25.25%) were between the age of 26-35 years, 125(24.86%) were between the age of 36-45 years, 116(23.06%) were between the age of 46-55 years, 79(15.70%) patients were more than 55 years & remaining 56(11.13%) were between the age of 15-25 years. Regarding the etiology of fistulas, most of the fistulas were following TAH 199(39.56%), 174(34.59%) following obstructed labor, 43(8.55%) following LUCS, 31(6.17%) following corrosive application, 19(3.78%) following malignancy, 18 (3.58%) following Trauma, 8(1.59%) following VH, and others 11(2.18%). Among 503 patients, 423 (84.09%) were Vesico vaginal fistula (VVF), 52 (10.35%) were Rectovaginal fistula (RVF), 21 (4.18%) were Ureterovaginal fistula (UVF), 4 (0.79%) were Vesico uterine fistula and 3 (0.59%) were Vesicocervical fistula. Out of 503 patients, operation was performed in 330 patients. Remaining 173 patients, 95(18.88%) were conservatively treated and 78(15.50%) were referred to higher centre. Repair of fistulas was done in vaginal route 244(74%) and abdominal route were 86(26%). Operation was successful 293(88.79%) and was failed in 37(11.21%). ***Conclusion:*** In the past, VVF, UVF and RVF were thought to be the incurable problem but with advanced surgical practice, availability of good suture material and antibiotics it can be cured surgically. There is increased incidence of post-surgical fistula and fistulas caused by corrosive application which is alarming.

Keywords: Vesico Vaginal Fistula, Uretero Vaginal Fistula, Recto Vaginal Fistula.

INTRODUCTION

Vesico-vaginal fistula (VVF) is a chronic health condition when abnormal connection between bladder and vagina is seen and causes constant dribbling of urine through vagina [1]. In developing countries, 97% of VVF occur due to prolonged obstructed labor [2, 3]. In fact, 80-90% of VVF are resulted from obstetric injuries [4]. Hence, it is also a major health problem according to the gynecological surgeons in developing countries [5, 6]. On the other hand, in developed countries, 90.0% of VVF are caused by gynecological procedures [4, 6, 7]. In this sense, every year, around 500,000 new cases of fistula occur due to obstetrical injury throughout the world [8]. Besides, fistulas can also result from urological and gastrointestinal surgeries, illegal abortions, and Lower Segment Caesarean Section (LSCS) [9]. 0.33% of urinary tract injury has been stated in all pelvic surgeries [10]. This continuous urine dribbling due to VVF has a reflective effect not only on the physical health of the woman but also an immense psychosocial

problems [11]. Uncontrolled urine leakage into the vagina with unpleasant odor, excoriation of vulva and discomfort reasons serious social, mental and physical problems [12]. On the other hand, a uretero-vaginal fistula (UVF) defines an abnormal communication between the ureter and vagina which causes urinary incontinence, frequent infection, and discomfort [13]. Infertility treatment or pelvic radiation therapy and gynecological operations, especially total abdominal hysterectomy, is the chief cause of UVF and ureteral injury [14-18]. Also, the thermal effects of electrocoagulation of the ovarian vessels and laparoscopic surgery may also cause UVF [19]. A report from Parpala- Spårman *et al*. stated gynecological laparoscopic procedures causes more than half of the ureteric injuries, mostly in its lower part [20]. Traditionally UVF was treated through ureteroneocystostomy [21]. But now, it is normally replaced by less invasive endoscopic and percutaneous procedures which are also very effective and reasonable [22]. However, the incidence of both VVF and UVF had been investigated by the physicians who are well experienced in urogenital fistula repair [15-17]. The objective of this study was to summaries the 18 years' experience of VVF and UVF in Rajshahi Medical College Hospital, Rajshahi, Bangladesh.

MATERIALS AND METHODOLOGY

This observational longitudinal study was conducted in between 2005- April 2022, at the Department of Obstetrics and Gynae in Rajshahi Medical College Hospital, Rajshahi, Bangladesh. The sample size for this study was 503.

Inclusion criteria

- The patients who were admitted with genitourinary fistula in RMCH between 2005- April 2022.

Exclusion criteria

- The patients having urinary incontinence other than true genitourinary fistula.

All the patients were undergone EUA (examination under anesthesia) for details evaluation of fistulas. Dye test was done in all the cases. In some cases, IVU, USG of KUB region and cystoscopy was done. VVF, UVF, RVF, Vesicouterine and Vesicocervical fistula were found in different size and location. Operations were performed in vaginal and abdominal route. Complicated fistulas were referred to Urology Dept. of RMCH, Fistula center of DMCH and Mamm's Institute of Fistula and women's Health, Dhaka, Bangladesh. All the information was taken from the hospital's record keeping authority with due consent. For statistical analysis SPSS version 21 was used as statistical tool in this study.

RESULT

Table-I: Age distribution of study Population (n=503)

Age	Number of patents	percentage
15-25 Years	56	11.13%
26-35 Years	127	25.25%
36-45 Years	125	24.86%
46-55 Years	116	23.06%
>55 Years	79	15.70%
Total	503	100%

Table 1 showed age distribution of the study patients. Most of the patients 127(25.25%) were between the age of 26- 35 years, 125(24.86%) were between the age of 36-45 years, 116(23.06%) were between the age of 46-55 years, 79(15.70%) patients were more than 55 years, & remaining 56(11.13%) were between the age of 15-25 years.

Table-II: Etiology of Fistula in study Population (n=503)

Cause	Number of patents	Percentage
Following Total abdominal hysterectomy (TAH)	199	39.56%
Following obstructed labor	174	34.59%
Following LUCS	43	8.55%
Following Corrosive application	31	6.17%
Following malignancy	19	3.78%
Following Trauma	18	3.58%
Following vaginal hysterectomy (VH)	8	1.59%
Others	11	2.18%
Total	503	100%

Table II showed etiology of fistula of the study population. Most of the fistula caused following TAH 199(39.56%), following obstructed labor 174(34.59%), following LUCS 43(8.55%), following Corrosive application 31(6.17%), following malignancy 19(3.78%), following Trauma 18 (3.58%), following VH 8(1.59%), and others 11(2.18%).

Table-III: Type of Fistula of study population (n=503)

Type	Number of patents	Percentage
Vesico vaginal fistula (VVF)	423	84.09%
Rectovaginal fistula (RVF)	52	10.35%
Ureterovaginal fistula(UVF)	21	4.18%
Vesico uterine fistula	4	0.79%
Vesicocervical fistula	3	0.59%
Total	503	100%

Table III showed the type of fistula. Among them 423 (84.09%) were VVF, 52 (10.35%) were RVF, 21 (4.18%) were Ureterovaginal fistula, 4 (0.79%) were Vesico uterine fistula and 3 (0.59%) were Vesicocervical fistula.

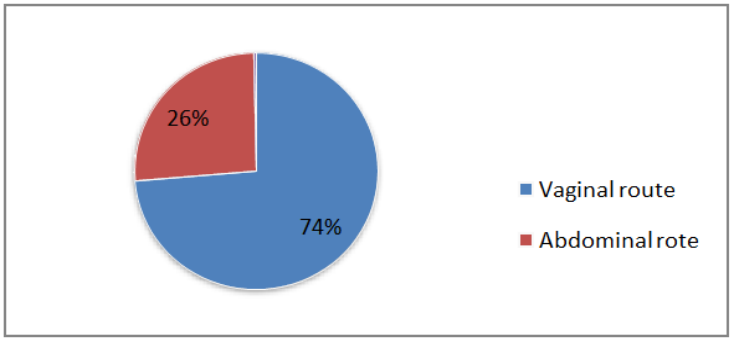

Fig-I: Route of Operation in the Study Population (n=330)

Pie chart I showed the route of fistula surgery. 244(74%) operation were done in vaginal route & remaining 86(26%) were done in abdominal route.

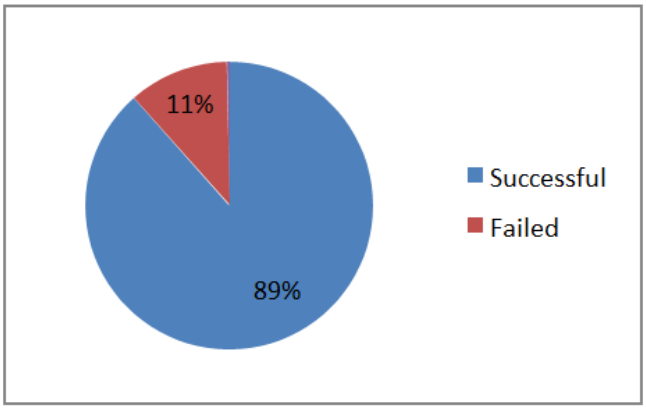

Fig-II: Outcome of the Operation in study Population (n=330)

Pie chart II showed the outcome of operated patients. Operations were successful in 293(88.79%) cases & failed in 37(11.21%) cases.

DISCUSSION

In our study most of the patients 127(25.25%) were between the age of 26-35 years, 125(24.86%) were between the age of 36-45 years, 116(23.06%) were between the age of 46-55 years, 79(15.70%) patients were more than 55 years, & remaining 56(11.13%) were between the age of 15-25 years. [Table I] A similar study conducted in between 2011-2014 showed the age distribution between <18 years and ≥18 years where 10.1% of the respondents were >18 years and 89.9% were ≥18 years [23]. Another study distributed the age between ≤40 years to >60 years where 11.7% were ≤40 years and followed by

70.6% were 41-50 years, 15.75 were 51-60 and 25 were >60 years [24]. In our most of the fistula caused following TAH 199(39.56%), following obstructed labor 174(34.59%), following LUCS 43(8.55%), following Corrosive application 31(6.17%), following malignancy 19(3.78%), following Trauma 18 (3.58%), following VH 8(1.59%), and others 11(2.18%). [Table II] Among the study patients 423 (84.09%) had VVF, 52 (10.35%) had RVF, 21 (4.18%) had Ureterovaginal fistula, 4 (0.79%) had Vesico uterine fistula and 3 (0.59%) had Vesicocervical fistula. [Table III] Priyadarshi *et al*. in their study showed V. V.F in 70.73% and ureterovaginal fistula in 14.63% cases due to obstructed labor and was iatrogenic fistula seen in 19 (4.87%) [25]. cases Lawal *et al*. found obstructed fistula in upper vagina was in 3.5% [26]. The study of Kumar, *et al*. found the ureterovaginal fistula was in 6.12% [27]. In our study 244(74%) operation were done in vaginal route & remaining 86(26%) were done in abdominal route. [Figure I] Bodner-Adler B *et al*. in their study showed repair by abdominal vagina route was done in 493 cases [27]. Delamou *et al*. in their study showed repair by abdominal route was done in 971% cases and followed by vaginal route was in 1.8% and combined in 00.8% cases [28]. In our study operation were successful in 293(88.79%) cases & failed in 37(11.21%) cases. [Figure II] Eilber *et al*. [29] showed the success rate 97% and failure rate was 3% where kumar *et al*. [30] found it 94.285% and 5.72%, C.-Y. Liao *et al*. [31] showed the success rate 94% and failure rate was 6%.

CONCUSION AND RECCOMENDATION

In the past, VVF was mostly due to obstructed labour, but in our study it is shown that genitourinary fistulas were mostly due to surgical complications & a good number of cases following application of corrosive chemicals for the treatment of uterovaginal prolapse which is very much alarming. However, in the past VVF and UVF were thought to be the incurable problem but with advanced surgical practice, availability of good suture material and antibiotics it can be cured surgically. But still there is a lack of standardized algorithm for their management. These complications hamper both the personal and social life problems for women along with the acute physical and mental illness. Hence, accurate and timely diagnosis, devotion to basic surgical principle, and repair by experienced surgeon helps the optimum chance of success and improved quality of life for the women. Besides, universal education, improvement in the status of women, the development and accessibility of maternity services especially for those who live in the low socio-economic condition and the training of health personnel in reproductive health cases along with surgical skill development is also important.

REFERENCE

1. Sohail, S., & Siddiqui, K. J. (2005). Trans-vaginal sonographic evaluation of vesicovaginal fistula. *Journal-pakistan medical association*, *55*(7), 292.
2. Lee, R. A., Symmonds, R. E., & Williams, T. J. (1988). Current status of genitourinary fistula. *Obstetrics and gynecology*, *72*(3 Pt 1), 313-319.
3. Sharma, S., Rizvi, S. J., Bethur, S. S., Bansal, J., Qadri, S. J. F., & Modi, P. (2014). Laparoscopic repair of urogenital fistulae: a single centre experience. *Journal of minimal access surgery*, *10*(4), 180.
4. Smith, G. L., & Williams, G. (1999). Vesicovaginal fistula. *BJU international*, *83*(5), 564-570.
5. Spurlock, J. (2009). Vesicovaginal fistula [Internet]. [updated 2009 Oct 1]. Available from: http://emedicine.medscape.com/article/ 267943-overview
6. Raut, V., & Bhattacharya, M. (1993). Vesical fistulae--an experience from a developing country. *Journal of Postgraduate Medicine*, *39*(1), 20.
7. Tancer, M. L. (1992). Observations on prevention and management of vesicovaginal fistula after total hysterectomy. *Surgery, gynecology & obstetrics*, *175*(6), 501-506.
8. Hilton, P. (2006). Vesico-vaginal fistulas in developing countries. In *Textbook of Perinatal Medicine* (pp. 2196-2205). CRC Press.
9. Puri, M., Goyal, U., Jain, S., & Pasrija, S. (2005). Letter to Editor-a rare case of vesicovaginal fistula following illegal abortion.
10. Bai, S. W., Huh, E. H., Jung, D. J., Park, J. H., Rha, K. H., Kim, S. K., & Park, K. H. (2006). Urinary tract injuries during pelvic surgery: incidence rates and predisposing factors. *International Urogynecology Journal*, *17*(4), 360-364.
11. Cook, R. J., Dickens, B. M., & Syed, S. (2004). Obstetric fistula: the challenge to human rights. *International Journal of Gynecology & Obstetrics*, *87*(1), 72-77.
12. Raashid, Y., Majeed, T., Majeed, N., Shahzad, N., Tayyab, S., & Jaffri, H. (2010). Iatrogenic vesicovaginal fistula. *J Coll Physicians Surg Pak*, *20*(7), 436-8.
13. Li, X., Wang, P., Liu, Y., & Liu, C. (2018). Minimally invasive surgical treatment on delayed uretero-vaginal fistula. *BMC urology*, *18*(1), 1-6.
14. Hosseini, S. Y., Roshan, Y. M., & Safarinejad, M. R. (1998). Ureterovaginal fistula after vaginal delivery. *The Journal of urology*, *160*(3), 829.
15. von Eye Corleta, H., Moretto, M., D'Avila, Â. M., & Berger, M. (2008). Immediate ureterovaginal fistula secondary to oocyte retrieval—a case report. *Fertility and Sterility*, *90*(5), 2006-e1.

16. Ignatoff, J. M., & Graham, J. B. (1974). Bilateral ureterovaginal fistula: Complication of radiation therapy. *Urology*, *4*(5), 585-589.
17. Al-Otaibi, K. M. (2012). Ureterovaginal fistulas: The role of endoscopy and a percutaneous approach. *Urology Annals*, *4*(2), 102.
18. Akgör, U., Kuru, O., Güneş, A. C., Karataş, E., Temiz, B. E., Erzeneoğlu, B. E., ... & Özgül, N. (2022). Impact of clinicopathological variables on laparoscopic hysterectomy complications, a tertiary center experience. *Ginekologia polska*, *93*(2), 105-111.
19. Stojko, R., Malinowski, A., Baranowski, W., Misiek, M., Winkowska, E., Pomorski, M., & Zimmer, M. (2020). Recommendations of the Polish Society of Gynaecologists and Obstetricians for removal of the uterus by vaginal, laparoscopic and abdominal routes. *Ginekologia Polska*, *91*(6), 352-361.
20. Parpala-Spårman, T., Paananen, I., Santala, M., Ohtonen, P., & Hellström, P. (2008). Increasing numbers of ureteric injuries after the introduction of laparoscopic surgery. *Scandinavian journal of urology and nephrology*, *42*(5), 422-427.
21. Mandal, A. K., Sharma, S. K., Vaidyanathan, S., & Goswami, A. K. (1990). Ureterovaginal fistula: Summary of 18 years' experience. *British journal of urology*, *65*(5), 453-456.
22. Selzman, A. A., Spirnak, J. P., & Kursh, E. D. (1995). The changing management of ureterovaginal fistulas. *The Journal of urology*, *153*(3), 626-628.
23. Sori, D. A., Azale, A. W., & Gemeda, D. H. (2016). Characteristics and repair outcome of patients with Vesicovaginal fistula managed in Jimma University teaching Hospital, Ethiopia. *BMC urology*, *16*(1), 1-6.
24. Akter, S., Shewly, N. R., Khatun, K., Nupur, R. P., Nahar, K., Sultana, N., & Sharmin, F. (2020). Socio-demographic Characteristics of Vesico-vaginal fistula (VVF) patients attended at a tertiary Care Hospital in Bangladesh. *Journal of National Institute of Neurosciences Bangladesh*, *6*(2), 114-117.
25. Priyadarshi, V., Singh, J. P., Bera, M. K., Kundu, A. K., & Pal, D. K. (2016). Genitourinary fistula: an Indian perspective. *The Journal of Obstetrics and Gynecology of India*, *66*(3), 180-184.
26. Lawal, O. O., Abdus-salam, R. A., Bello, O. O., Morhason-Bello, I. O., & Ojengbede, O. A. (2021). Outcome of urethral reconstruction among vesico-vaginal fistula patients: a cross-sectional study. *African Journal of Urology*, *27*(1), 1-7.
27. Bodner-Adler, B., Hanzal, E., Pablik, E., Koelbl, H., & Bodner, K. (2017). Management of vesicovaginal fistulas (VVFs) in women following benign gynaecologic surgery: a systematic review and meta-analysis. *PloS one*, *12*(2), e0171554.
28. Delamou, A. (2018). *Towards a fistula free generation* (Doctoral dissertation, Université libre de Bruxelles).
29. Eilber, K. S., Kavaler, E., Rodríguez, L. V., Rosenblum, N., & Raz, S. (2003). Ten-year experience with transvaginal vesicovaginal fistula repair using tissue interposition. *The Journal of urology*, *169*(3), 1033-1036.
30. Kumar, N. A., Chaitanya, S. V., Prasad, P., Babu, A. J., & Shankar, K. R. Genitourinary Fistulas–Our Experience.
31. Liao, C. Y., Tasi, R. S. F., & Ding, D. C. (2012). Gynecological surgery caused vesicovaginal fistula managed by Latzko operation. *Taiwanese Journal of Obstetrics and Gynecology*, *51*(3), 359-362.