OUTCOME OF VESICOVAGINAL FISTULA REPAIR AT TERTIERY HOSPITAL: COHORT STUDY

[1]Jason Liarto, [2]Jufriady Ismy.

[1] Urology Department, Faculty of Medicine/University of Padjajaran, Hasan Sadikin General Hospital, Bandung.
[2] Faculty of Medicine/University of Syiah Kuala, Banda Aceh.

ABSTRACT

Objective: *This study aims to provide an evaluation of the outcome of patients with history of vesicovaginal fistula repair by assessing the success rate and complications that occur.* ***Material & Methods:*** *This study was a retrospective cohort study to describe the etiology, approach, and outcome in patients undergoing vesicovagina fistula repair. We analyzed the complication with vesicovaginal fistula type, etiology and technique used.* ***Results:*** *There were 10 vesicovaginal fistula patients, with mean age 33.4 ± 14.5 years. Both transabdominal and transvaginal approach were equally used. Sixty percent patient was successfully treated without complication. Forty percent patient with incontinence came with mild urinary incontinence and need further repair.* ***Conclusion:*** *Both transvaginal and transabdominal approach were equally effective to repair fistula with relatively low complication rate and high successful rate.*

Keywords: *Vesicovaginal fistula, retrospective, transabdominal and transvaginal.*

ABSTRAK

Tujuan: *Penelitian ini bertujuan untuk memberikan evaluasi pasien dengan riwayat perbaikan fistula vesikovaginal dengan menilai tingkat keberhasilan dan komplikasi yang terjadi.* ***Bahan & Cara:*** *Penelitian ini merupakan penelitian kohort retrospektif untuk menggambarkan etiologi, pendekatan, dan hasil pada pasien yang menjalani perbaikan fistula vesikovagina. Kami menganalisis komplikasi dengan jenis fistula vesikovaginal, etiologi dan teknik yang digunakan.* ***Hasil:*** *Ada 10 pasien fistula vesikovaginal, dengan usia rerata 33.4 ± 14.5 tahun. Pendekatan transabdominal dan transvaginal sama-sama digunakan. Enam puluh persen pasien berhasil diobati tanpa komplikasi. Empat puluh persen pasien dengan inkontinensia datang dengan inkontinensia urin ringan dan perlu perbaikan lebih lanjut.* ***Simpulan:*** *Pendekatan transvaginal dan transabdominal sama-sama efektif untuk memperbaiki fistula dengan tingkat komplikasi yang relatif rendah dan tingkat keberhasilan yang tinggi.*

Kata Kunci: *Fistula vesikovaginal, retrospektif, transabdominal dan transvaginal.*

Correspondence: Jason Liarto; c/o: Urology Department, Faculty of Medicine/University of Padjadjaran, Hasan Sadikin General Hospital, Jl. Pasteur No.38, Sukajadi, Bandung, Jawa Barat 40161, Indonesia. Email: jasonliarto27@gmail.com.

INTRODUCTION

Fistulas are abnormal tunnel that connect internal organs that are not normally connected or connect internal organs to the outer surface of the body. Vesicovaginal fistula, which is the formation of a fistula in the vaginal wall that connects the bladder to the vagina, as a result of which urine comes out through the vaginal canal.[1-2]

Many factors can cause vesicovaginal fistula such as postpartum obstetric complications (tearing due to forceps usage, complications of post-sectio cesarean, necrosis due to pressure during labor), gynecological operations such as uterine carcinoma, side effects of radiotherapy or even congenital abnormalities.[1-2]

The incidence of vesicovaginal fistula is more common in developing countries because it is related to the rate of malignant labor and radiation. UNFPA (United Nation Population Fund) states that out of 2 million women in Asia, Africa and Arabia there are 50.000 to 100.000 new cases of fistula each year.[1,3]

Clinically, the signs and symptoms of vesicovaginal fistula is painless urinary incontinence. Fistulas as a result of obstetric trauma can occur immediately after delivery or few days after delivery, whereas fistulas due to gynecological

surgery occurs 5-14 days postoperative. Trias of symptoms that vesicovaginal fistula post surgical are urinary secretions, abdominal pain and an increase in body temperature these sign can confirm the diagnosis of vesicovaginal fistula.[2,4]

In large fistulas, making a diagnosis is not difficult because they can easily be seen and felt, but small fistulas are very difficult. This requires additional examinations such as Methylene Blue Test, Moir Test, Endoscopy, and Radiological Examination with retrograde pyelogram.[1-2]

Vesicovaginal fistula is divided into 2 types, simple vesicovaginal fistula and complicated vesicovaginal fistula based on fistula size, vaginal length, and also a history of malignancy and previous history of radiation therapy. this classification will be closely related to the management that must be done.[1-2]

There isn't medical treatment can satisfactorily correct or cure vesicovaginal and ureterovaginal fistulas. However, the use of conjugated estrogens (oral or transvaginal) could help vaginal tissue to become softer in preparation for fistula repair. There are several surgical techniques for fistula closure, one of which is transvaginam surgical techniques such as futh-mayo technique, martius's bulbo cavernous flap technique, Symonds-knapstein technique, G Doderlain technique, transabdominal surgery.[3-4]

OBJECTIVE

The objective of this study is to provide an evaluation of surgical techniques in patients with vesicovaginal fistulas by assessing, the success rate and complications that occurs such as ureteral obstruction, bleeding, infection, and incontinence.

MATERIAL & METHODS

This study was a retrospective cohort study to find correlation between various risk factors and the outcome in patients undergoing vesicovagina fistula repair. The study was performed at the Department of Urology, Zainal Abidin General Hospital, Aceh. Data were obtained from medical records of vesicovaginal fistula patients who had fistula repair between January 2020 until December 2020. Samples were selected with total sampling. All existing subjects who met the study criteria were enrolled. The inclusion criteria in this study were vesicovaginal fistula patients undergoing fistula repair then the patients undergone the surgery must be followed until 3 months. The exclusion criteria were lost follow-up patients and incomplete medical records data.

Data were collected from medical records of the Department of Urology, Zainal Abidin General Hospital, Bandung. Age at operation, vesicovaginal fistula classification, and surgery technique were collected. The results were presented in narration and tables.

RESULTS

There were 10 vesicovaginal fistula patients who had undergone vesicovaginal fistula repair at the Department of Urology, Zainal Abidin Hospital, Bandung and met the inclusion criteria. The mean age of the patients was 33.4 ± 14.5 years (range 19 - 57 years old). Table 1 shows various variables of vesicovaginal patients who had undergone vesicovaginal repair. The mean size of fistula was 1.31 ± 1.25 cm with 70% simple fistula (less than 2.5 cm in size). Two approaches were equally used here, which were transabdominal and transvaginal. The complication was found in 3 patients (30%). The major complication included bleeding, infection, and incontinence.

To evaluate incontinence, RUIS (revised urinary incontinence scale) was used. Cut off of 9 was used for mild, and 12 for severe. Mild incontinence was found in 3 patients and severe incontinence was found in 1 patient.

Table 1. Subject Characteristics

Variables		n	%
Age	Median	33.4 (19-57)	
fistula classification	Simple vesicovaginal fistula	7	70
	Complicated vesicovaginal fistula	3	30
Operation techniques	Transabdominal	5	50
	Transvaginal	5	50
Complication	Bleeding, infection, incontinence.	4	40
Incontinence	Mild (< 9)	3	30
	Moderate (9 – 12)	0	0
	Severe (> 12)	1	10

DISCUSSION

Fistulas are abnormal tunnel that connect internal organs that are not normally connected or connect internal organs to the outer surface of the body. Vesicovaginal fistula, which is the formation of a fistula in the vaginal wall that connects the bladder to the vagina, as a result of which urine comes out through the vaginal canal.[1-2]

The incidence of vesicovaginal fistula is more common in developing countries because it is related to the rate of malignant labor and radiation. UNFPA (United Nation Population Fund) states that out of 2 million women in Asia, Africa and Arabia there are 50.000 to 100.000 new cases of fistula each year.[1,3]

In the theory, Obstetric vesicovaginal fistula due to obstetric trauma is common in underdeveloped countries. Of vesicovaginal fistula reported from underdeveloped countries, 95.2% of cases were of an obstetric aetiology, mostly due to prolonged neglected obstructed labour. In 9% of cases vesicovaginal fistula followed caesarean section and 2% following instrumental delivery. Vesicovaginal fistula results from prolonged obstructed neglected labour with subsequent ischaemic pressure on the anterior vaginal wall and the base of the bladder during prolonged labour. The major risk factor appears to be prolonged obstruction that produces an extended period of ischaemia of the bladder and vaginal wall that leads to tissue necrosis and the subsequent development of a vesicovaginal fistula.[5-6]

The transvaginal route is now the preferred route of fistula approach at our institution. Plenty of patients now prefer vaginal approach to abdominal laparotomy. Abdominal repair is performed transvesically and there is an inherent increased morbidity associated with a cystotomy and bowel manipulation. Also, as the bladder is opened, there are increased bladder spasms and discomfort postoperatively.[7-8]

The vaginal approach is less invasive. There is decreased requirement of analgesics, allows high cure rate, shorter hospital stay, relatively lower costs and does not require sophisticated or expensive material, and infrastructure as needed for laparoscopic or robot-assisted repairs.[5,7]

In this study, complication of vesicovaginal fistula occurred in 3 patients (37,5%). The incidence of complication in this study was roughly average compared to the incidence rate of complication in the literature. However, the incident varies from surgeon to surgeon. Kumar et al reported 21.4%, Rajaian et al. reported 15.27%6, Garthwaite et al. reported 32.5%9, Wong et al. reported 31.4%.[8]

The lack of risk factors considered in this study is one of the limitations. Other possible risk factors are previous hormonal therapy, the use of particular types of dressing and surgical material, infection, degree of chordee, wound status, antibiotics, etc. should be considered. Other limitations are the sample size was to small, overwhelming majority of the participants was within the age range of 2-15 and the incomplete data collection on surgery techniques used in this study.

CONCLUSION

Both transvaginal and transabdominal approach were equally effective to repair fistula with relatively low complication rate and high successful rate.

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 Jan; 25(1): 25-29.
2. Stamatakos, M., Sargedi, C., Stasinou, T., & Kontzoglou, K. Vesicovaginal fistula: diagnosis and management . The Indian journal of surgery. 2014; 76(2): 131–136.
3. Ockrim, J. L., Greenwell, T. J., Foley, C. L., Wood, D. N., & Shah, P. J. R.. A tertiary experience of vesico‐vaginal and urethro‐vaginal fistula repair: factors predicting success. BJU international. 2009; 103(8): 1122-1126.
4. Kumar M, Agarwal S, Goel A, Sharma A, Agarwal A, Pandey S, Sankhwar S, N: Transvaginal Repair of Vesico Vaginal Fistula: A 10-Year Experience with Analysis of Factors Affecting Outcomes. Urol Int. 2019; 103: 218-222.
5. Rajaian, S., Pragatheeswarane, M., & Panda, A. Vesicovaginal fistula: Review and recent trends. Indian journal of urology : IJU : Journal of the Urological Society of India. 2019; 35(4): 250–258.
6. Garthwaite, M., & Harris, N. Vesicovaginal fistulae. Indian journal of urology : IJU : journal of the Urological Society of India. 2010; 26(2): 253–256.
7. Wong MJ, Wong K, Rezvan A, Tate A, Bhatia NN, Yazdany T. Urogenital fistula. Female Pelvic Med Reconstr Surg. 2012; 18(2): 71–8.
8. Zambon J, Batezini N, Pinto E, Skaff M, Girotti M, Almeida F. Do we need new surgical techniques to repair vesico-vaginal fistulas? Int Urogynecol J. 2010; 21: 337–342.
9. Angioli, R., Penalver, M., Muzii, L., Mendez, L., Mirhashemi, R., Bellati, F & Panici, P. B.. Guidelines of how to manage vesicovaginal fistula. Critical reviews in oncology/hematology. 2003; 48(3): 295-304.