

The management of vesicovaginal fistulae at Urology Division, Sanglah Hospital, Bali

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ABSTRACT

Background: Vesicovaginal fistulae (VVF) inflicts a significant deal of physical as well as physiological aspect on the patients and is considered as one of the mortifying conditions that affect women. **Aim:** This study aims to review our experience in the management of VVF over six years, with an emphasis on causes, treatment modalities and outcomes. **Methods:** From January 2013 to June 2018, all patients with VVF resulting from causes other than advanced malignancies who underwent repair surgery were included in the study. The surgery techniques are being transvaginal with or without Martius flap and transabdominal with open or laparoscopy. The successful repair was defined as the absence of urine leakage per vaginal on follow up. **Results:** A total of 20 patients over six years period were included in this study. Most of the cases occurred at aged 40-49 years (45%), multipara (95%) and came from the middle socio-economic strata (75%). Hysterectomy was the most prevalent cause of fistulae (75%) and mid-vaginal fistulae being the most form of fistulae found (65%). Most of them treated with the transvaginal approach (75%). The overall success rate of all the procedures were 80% at the primary repair. **Conclusion:** Despite the impressive outcome of surgical repairs, emphasis should be shifted towards the prevention of this dehumanizing condition which could be achieved through proper enlightenment of the populace and general improvement in the quality of surgical service.

KEYWORDS vesicovaginal, fistulae, repair, transabdominal, transvaginal

deliveries with 100,000 to 500,000 cases occurring annually.[1-3]

Introduction

Vesicovaginal fistulae (VVF) is an abnormal communication extending between the urinary bladder and the vagina that allows an uncontrollable, involuntary leakage of urine per vagina. VVF imposes a great deal of physical, social and physiological handicap on the sufferer and is regarded as one of the most dehumanizing conditions that afflict women. Around the globe, the developing countries have an incidence of 1-2 VVF/ 1000

In India and Pakistan, some 70% to 90% of women with VVF are either abandoned or divorced.[4] In developing countries with a low standard of obstetric care, prolonged obstructed labour remains the most common cause of VVF.[5] In developed countries with better obstetric facilities, gynecologic and pelvic surgery, especially hysterectomy, are the leading causes of VVF.[4,6] An accurate evaluation for number, size and location of the fistulae is essential before embarking on the repair. The diagnostic armory includes the dye test, examination under anaesthesia, intravenous urography, cystography, hystero-graphy, colposcopy, subtraction MR fistulography, endocavitary ultrasound through trans-rectal or trans-vaginal route with or without Doppler or contrast agents.[7,8] The management of VVF involves a multi-modal technique. The repair could be undertaken through the transabdominal or transvaginal route or a combined approach.[9,10] The success rate has been associated

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Table 1 Age distribution.

Age (Years)	Number of Patients	Percentage
20 – 29	1	5
30 – 39	3	15
40 – 49	9	45
50-60	6	30
>60	1	5
Total	20	100

Table 2 Socio-demographic characteristics.

Parameters	Types	Number of Patients	Percentage
Parity	Primipara	1	5
	Multipara	19	95
Education Status	Educated	16	80
	Not educated	4	20
	Low	2	10
Socioeconomic status	Middle	15	75
	High	3	15
Residence	Rural	7	35
	Urban	13	65
Nutritional Status	Poor	2	10
	Good	20	100

with the aetiology of fistulae, size of the fistulae and the number of failed attempts at repair.[11] This study aims to review our experience in the management of VVF over six years (January 2013 to June 2018), with an emphasis on causes, treatment modalities and outcomes.

Materials and Methods

The study was undertaken from January 2013 to June 2018 at the Department of Urology, Sanglah Hospital, Denpasar. Twenty patients with VVF resulting from causes other than advanced malignancies were included in the study. A detailed history of the patients' ages, socio-demographic, fistulae feature, aetiology, surgical approaches and outcome were presented. Examination under anaesthesia and dye test was done to evaluate the site, size and number of the fistulae. Complex VVF is defined as a fistulae size more than 2,5 cm, and radiation-related fistulae. The surgery approaches include; transvaginal with or without Martius flap, transabdominal with open or laparoscopy technique. A successful repair was defined as the absence of urine leakage per vaginal on follow up. The follow-up period ranged from 3 to 24 months after discharge from the hospital. The results were presented using percentages.

Results and Discussion

A total of 20 patients over six years period were included in this study. Table 1 shows that most of the cases occurred at aged 40-49 years (45%). Table 2 shows the socio-demographic characteristics of the patients. The patients were mostly multipara (95%), lived in the urban areas (65%), came from the middle socio-economic strata (75%) and all the patients have a good nutritional status. Mid-vaginal fistulae (65%) was the most typical form of fistulae encountered (Table 3). As shown in table 4,

hysterectomy (75%) was the most typical cause of fistulae in this study.

The transvaginal route was the most frequent route employed in the repair of the fistulae, as shown in table 5. A transvaginal approach with Martius flap managed six patients with complex VVF. One patient was failed due to cancer relapse. High location VVF was repaired transabdominal, and a laparoscopic approach repaired three of them. The transvaginal approach was the most commonly employed route of repair performed in this study and carried the highest success rate (80%) at first attempt surgery. The laparoscopic abdominal approach was employed in the repair of three cases of high VVF with a success rate of 67%.

Three patients suffered incontinence despite successful VVF closure and were improved after 3-month of physiotherapy. The overall success rate of the procedure was (80%) at the primary repair.

Discussion

Hysterectomy was the most common cause of VVF in this study. Several authors also reported this finding in the developing country with good obstetric centre. The prevalence of obstetric fistulae has fallen precipitously in the more industrialized nations of Asia.[12,13] According to the WHO 1991 Report on Obstetric Fistulae, VVF exclusively affects women from poor families and communities.[14] In our study, we found that the patients mostly came from urban areas (65%), the middle socio-economic strata of the society reached 75% cases and 100% patients were in good nutritional status. Most women in this series were young multipara. This is in line with the finding of Saaqib et al[12], where multipara constituted the highest number of patients.

The VVF repair success rate in this study reached 80%, which is comparable to other national and international studies. Success rate reported in the literature is variable, depending on the

Table 3 Feature of the fistulae.

Feature		Number of Patients	Percentage
Fistulae location	Juxtacervical	4	20
	Juxtaurethral	2	10
	Midvaginal	13	65
	Giant (Combination)	1	5
Fistulae type	Simple	14	70
	Complex	6	30

Table 4 Etiology of fistulae.

Cause	Number of Patients	Percentage
Obstetric	4	20
Gynaecological operation (Hysterectomy)	15	75
Radiation	1	5
Total	20	100

Table 5 Surgical approaches.

Surgical approaches		No	Cured	% success rate
Transvaginal	Without flap	9	6	67
	Martius flap	6	6	100
Transabdominal	Open	2	2	100
	Laparoscopy	3	2	67
Total		20	16	80

type of fistulae, technique, and above all surgical skills.[7,12,15] The high success rate in the transvaginal approach usually found in those patients with simple, small, low lying fistulae that were subjected to vaginal repair.[7,12] The location and size of the fistulae usually determine the approach used.[7] The transabdominal approach is usually used in cases of high located fistulae; on the vaginal stump, close to the ureter, more than 2 cm in size and in cases of previously failed repairs.[5,7] The method employed depends on the surgeon's preferences and the nature of the fistulae. Successful repair of VVF, especially the giant and recurrent types, warrants the use of adjunctive measures.[16] These include the placement or interposition of some local tissue or graft between the two structures connected by the fistulae. Labial fat pad (Martius flap) interposition is popularly performed via a transvaginal approach. We have successfully managed complex VVF with the Martius flap interposition technique, where the success rate reaches 100%. The omentum, peritoneal flap, gracilis muscle, bladder wall flap, or appendix epiploica have all been interposed via the transabdominal and intraperitoneal approach in the repair of VVF.[17] Martius flap was chosen because it was easily available, good vascularity, and early healing. We performed the laparoscopic repair in three patients with the high location of fistulae with 67% successful rate. In the era of minimally invasive surgery, laparoscopy and robotic-assisted laparoscopy have gained popularity in the management of VVF, which aims to decreased morbidity, while preserving the same success rates of the conventional approaches.

Conclusion

Vesicovaginal fistulae are chiefly caused by gynaecological surgery complication. Hysterectomy was the most frequent causes of VVF in this series. Despite the impressive outcome of surgical repairs, emphasis should be shifted toward the prevention of this dehumanizing condition. This could be achieved through proper enlightenment of the populace and general improvement in the quality of surgical service.

Competing Interests

There were no financial supports or relationships between authors and any organization or professional bodies that could pose any conflict of interest.

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