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TRANSVAGINAL REPAIR OF VESICOVAGINAL FISTULA: EXPERIENCE AT A TERTIARY CARE CENTRE.

Urology

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ABSTRACT

Aim: to highlight the transvaginal route as an effective approach for repair of simple vesico-vaginal and urethro-vaginal fistulae without compromising patient outcomes.

Materials and Methods: A retrospective analysis was carried out on 45 patients with simple trigonal, supra trigonal and urethrovaginal fistula who underwent transvaginal repair in the last 3 years. Simple fistulas were defined as fistula less than 3 cm in size or recurrent fistulae less than 1.5–2 cm in size and located either supra-trigonally (above the bar of mercier) or sub-trigonally (below the bar of mercier) as determined by cystoscopy.

Results: Obstetric cause, due to obstructed labour, was the most common cause of fistula formation (68.96%), while remaining (29.31%) were attributed to hysterectomy. Primary fistulae were found in 68.9% of patients and recurrent fistulae in 31.1% patients. The mean age of patients was 34.30 years. Average fistula size was 1.5 cm. The success rate of primary operation was 84.12%. On using a multivariate regression model, the underlying aetiology (OR 2.2), fistula location (OR 2.5) and history of previous repair (OR 2.4) were found to be significant factors affecting outcome.

Conclusion: The transvaginal approach is less invasive and achieved comparable success rates as compared to other methods of vesico-vaginal fistula repair. We postulate that vaginal approach should be preferred over abdominal approach for repair of all vaginally accessible vesico vaginal fistulae, both of obstetrical and gynaecological origin.

KEYWORDS

Transvaginal repair, Vesicovaginal fistula, Urethrovaginal fistula

INTRODUCTION

Vesicovaginal fistula (VVF) is an abnormal communication between the bladder and the vagina that results in continuous and unremitting urinary incontinence. VVFs are rare in developed countries and arise mainly from malignant disease, radiotherapy (RT) or surgical trauma[1]. First reports of successful repairs emerged in the literature around the mid-19th century when James Marion Sims described his technique of a transvaginal approach with the use of silver sutures and bladder drainage postoperatively [2].

Estimates suggest that at least three million women in poor countries have unrepaired VVFs, and that 30,000–130,000 new cases develop each year in Africa alone [3].

Surgery is by far the preferred approach for affected women and the success rate varies between 75–95% with various different techniques in literature[4,5]. Multiple different surgical routes like Latzko repair, open transabdominal, transvaginal, laparoscopic, robotic, transurethral endoscopic with or without tissue interposition have been described [6,7].

Vesicovaginal fistula (VVF) is still a major cause for concern in many developing countries. It represents a significant morbidity in females with continuous wetness, odor, and discomfort causing social stigma.The diagnosis of the condition has traditionally been based on clinical methods and dye testing. A successful repair of such fistulas requires an accurate diagnostic evaluation and timely repair using procedures that exploit basic surgical principles and the application of interposition flaps.

MATERIALS AND METHODS

A retrospective analysis was carried out on 45 patients with simple trigonal, supra trigonal and urethra-vaginal fistula who underwent transvaginal repair in the last 3 years.

All patients were evaluated preoperatively by history, physical examination, serum creatinine, ultrasonography abdomen and intravenous urography. A cystoscopy was performed and the following details were noted– the location, size and number of fistulas, distance from the ureteric orifices, condition of the mucosa around the fistulous opening, thickness of fistulous septum (assessed by inserting a finger trans-vaginally while performing cystoscopy and palpating the fistula). Three swab test with methylene blue was done wherever the diagnosis was uncertain. Vaginal speculum examination was done to assess the vaginal capacity and vaginal mucosal integrity.

RESULTS

The results are shown in Table 1 and 45 cases of VVF were managed transvaginally during the study period. Of these, obstetric cause was the most common cause of fistula formation 68.96%, while 29.31% were attributed to hysterectomy due to either laparoscopic or open approach. Among the obstetric causes, obstructed labour was the most common cause of fistula formation. All were simple fistulae. While 31.1% were recurrent fistule, 68.9% were primary fistulae.

The mean age of patients was 33.4 years. Average fistula size was 1.5 cm. All were single fistulae except 6, which were double and all repaired trans vaginally. Ureteric stents were used in 20 patients owing to closeness of fistula to ureteric orifice. Martius fat pad was interposed in 35 patients and peritoneal flap in 7 patients. Three cases were repaired without any flap interposition.The mean operative time was 78 ± 18.1 min, and ranged from 60 to 100 min. Mean blood loss was 65 ± 13.4 mL (range 50–90 mL). The mean postoperative hospitalization time was 8 ± 3.8 days (range 7–13 days). No intraoperative complications were observed.

The success rate of primary operation was 84.12% (50/58). Transvaginal repair failed in 8 patients. In a univariate analysis, the underlying aetiology, fistula location, presence of UTI and history of previous repair had a significant impact on surgery outcomes.

VARIABLES	NO. OF CASES (n = 45)
AVERAGE AGE	34.3
LOCATION OF FISTULA	
• Supra trigonal	11
• Trigonal	28
• Urethrovaginal	6

SIZE OF FISTULA	
• 0.5 – 1 cm	15
• 1-2 cm	25
• 2-3 cm	5
MULTIPLICITY	
• Single	41
• Multiple	4
TYPE OF FISTULA	
• Primary	38
• Recurrant	7
FLAP	
• Martius	35
• Peritoneal	7
URETERIC STENT	
• Yes	20
• No	25

DISCUSSION

VVF is an emotionally distressing postoperative complication that has serious social and quality-of-life implications. While Obstetric VVF continues to occur in developing countries due to ignorance and inadequate medical facilities, it is uncommon in the western world. Obstetric causes include injury at the time of caesarean section, forceps delivery and obstructed labour [8,9]. In our study, almost 70% patients had fistula due to obstetric causes and the remaining had fistula due to hysterectomy.

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 there are increased bladder spasms and discomfort postoperatively. The vaginal approach is a less invasive approach. 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 [10].

A review of the literature on the issue of VVFs demonstrated that most studies were old and relatively uncritical by current scientific criteria. This literature consists mainly of case series and personal experiences reported by urologists or gynaecologists. The exact magnitude of the problem of VVF in developing countries is, therefore, still unknown. Our present review showed that VVF is extremely rare nowadays in developed countries, where it results mainly from surgical intervention. VVFs are still common in developing countries and in 95% of cases result from obstetric causes. Obstetric VVFs result from prolonged neglected obstructed labour, where sustained pressure leads to ischaemia and necrosis due to compression of the bladder base and anterior vaginal wall between the foetal head and symphysis pubis[11].Waaldijk et al [12] using a definition of 'immediate' as within 3 months of creation, reported a 95.2% successful initial closure rate. Typically, repair should be performed following a period of catheterisation to provide the opportunity for spontaneous closure. However, immediate repair alleviates the patient's distress. We do not have any strong evidence to support the advantage of immediate repair over a delayed repair; however, it is certainly a challenge to perform a repair between the third week and the third month following VVF formation.

CONCLUSIONS

VVF remains a condition with devastating physical and social consequences for the patient, regardless of the etiopathology. Their successful management poses a significant challenge. Quick and accurate diagnosis is essential. Timely repair by an experienced fistula surgeon, adhering to fastidious basic surgical principles, will improve outcomes and limit the clinical insult and distress that a VVF invariably causes.

The transvaginal approach is less invasive and achieves comparable success rates as compared to other methods of VVF repair. Genital fistula repair surgery with Foley catheter has a high success rate, reduced morbidity, minimal blood loss and short hospital stay. We postulate that vaginal approach should be preferred over abdominal approach for repair of all vaginally accessible VVF, both of obstetrical and gynaecological origin.

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