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Original Article

Factors Associated with Vesicovaginal Fistula Their Treatment and Outcome

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ABSTRACT

Introduction: Vesicovaginal fistulas (VVF) also known as vesicovaginal fistula, have become a growing public health concern especially of developing countries. The most cited reason in literature of VVF is by prolonged and obstructed labor. With improvement in quality care delivery in health around the globe, the etiology of VVF too evolving in the country. **Objective:** This study was done to find out the factors associated with vesicovaginal fistula and to determine the success rate of operative procedure for treatment of vesicovaginal fistula. **Method:** This cross sectional study was carried out in Department of Gyneacology and Obstetrics in Liaquat University Hospital, Hyderabad from January 2021 to December 2021 among 60 women at different ages suffering from vesicovaginal fistula due to gynaecological or obstetrical causes or malignancy. **Result:** Majority of the patients were "young primipara with short stature and malnourished, coming from lower socioeconomic condition of rural areas. Prolonged labor 24 (40%) was the most common cause of vesicovaginal fistula, followed by gynaecological surgeries mainly hysterectomies 18 (30%) and malignancy 4 (6.6%) rare cause. The success rate of repair following first and second attempt was 92% and 8% respectively. Overall success rate was 48 (96%) and functionally failed with a failure in 2(4%) cases. This study showed main cause for developing fistula showing prolonged labor and majority of patient were treated pervaginally. Most of the cases (96%) had successful repair which is very encouraging and correlates well with recently published series. **Conclusion:** Fistula can be totally preventable by proper antenatal care identification of high risk cases, timely referral, proper intranatal, postnatal care, and proper training. So improvement of health care services and dedication will prevent this type of morbidity. The best results are obtained when repair of vesicovaginal fistulae is carried out under optimal conditions".

INTRODUCTION

An abnormal communication between "urinary and genital tract is termed vesicovaginal fistula. The commonest type of genitourinary fistula is vesicovaginal fistula. Vesicovaginal fistula is an abnormal fistulous communication tract between vagina and urinary bladder, which leads to continuous involuntary passage of urine into vagina. Genitourinary fistula is a major problem in many developing countries especially the vesicovaginal fistula commonly caused by prolonged and obstructed labor is one of the worst complication of child birth [1,2] Genitourinary fistula is a devastating condition affecting the physical and psychological health of women. With advance obstetric care these fistula are rare in industrialized world. Globally about 3.5 million women are living withgenitourinary fistula, a miserable condition [3]. An incidence of 12 per 1000 deliveries has estimated worldwide, with an annual incidence of up to 50,000 to 100,000 [4]. In Bangladesh 1.9 percent women are suffering

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from Vesicovaginal fistula (BIRRERTH) [5]. According to UNFPA & Engender Health, the number of women living with fistula is estimated to be 1.69 per 1000 ever married women [6]. Vesicovaginal fistulas result from mainly obstetrical and gynaccological cause. In the developing countries, 80-90 percent vesicovaginal fistulas are of obstetrical origin [7]. Lacks of privacy in hospital, objection from families, indifferent attitude of husband leads to prolong labor, encourage obstructed labor. Recently the incidence of genitourinary fistula following gynecological surgery, especially hysterectomy has increased [8]. Repair of the vesicovaginal fistula is a challenging task for the fistula surgeons worldwide. The outcome of vesicovaginal fistula repair depends on many factors like site, size and number of fistula, urethral length, bladder capacity and amount of scarring etc [9,10]. This study was designed to find out the factors associated with vesicovaginal fistula and to determine the success rate of operative procedure for treatment of vesicovaginal fistula at Liaqat University Hospital, Hyderabad.

METHODS

The study was cross sectional study in nature & was done at Department of Gyneacology and Obstetrics of Liaquat University Hospital, Hyderabad from January 2021 to December 2021 among 60 women suffering from vesicovaginal fistula. After admission all eligible patients were informed and written consent was obtained. Patient admitted with signs of dribbling of urine due to history of previous operative procedure and obstructed or prolonged labor or malignancy were included in the study while patients also having rectovaginal fistula or complete perineal tear were exclusion from the study. A detailed history has taken to pin point the casual factor. This included respondent's personal information, socio economic condition, past obstetrical and medical history, pattern of medical care and problem faced by the women suffering from vesicovaginal fistula. Each woman was evaluated with a detailed history as regards age, parity, antecedent event leading to fistula e.g., obstetric or gynecological. Obstetrical events including duration of labor, place, type of delivery, pregnancy outcome, and duration of fistula were detailed. The assessment included the women's general physical condition, size, site and number of fistula, amount of scarring of fistulous, margins or stenosis of the vagina. Detailed examination were done including examination under anesthesia. After the assessment of the patient appropriate operative measure were taken. All the result were noted in predesigned history sheet. Surgery was considered to be successful if patient can hold urine and there is no leakage of urine in between the act of voiding after removal of catheter and before discharge from the hospital. After collection of data, analysis was done by computer aided statistical software SPSS v. 21. Data were presented in the form of tables and graphs. Data were analyzed with descriptive statistics. The level of significance of 0.05 were used for this study.

RESULTS

During a period of one year, 60 women that satisfied the inclusion criteria were prospectively evaluated & the results were analyzed. Among 14776 patients admitted in department of Gyneacology and Obstetrics of Liaquat University Hospital, Hyderabad, there were 60 vesicovaginal fistula, yielding a frequency to be 0.4%, and among total Gynae patients of 3832 yielding a frequency to be 1.5%. Age distribution of patients (60)- Majority [22 (36%)] patients belongs to age group 21-30 years, second commonest age was 31-40 years about 16(27%). Most of the patients [26 (43.3%)] in this study were young primipara, next [18(30.0%)] were para(4, 7%) and 6(10%) of them were grand multipara.

	Causative Factors	No. of Patients	%
A.	Obstetrical Prolonged	40	66.66%
	Prolonged Labor (Vaginal Delivery)	26	43.33%
	Obstructed Labor (Caesarean Section)	14	23.33%
B.	Gynaecological Causes	20	33.33%
	Total Abdominal Hysterectomy	18	30.00%
	Malignancy	2	33.33%

Table 1: Aetiology Based Distribution (n=60)

Distribution of cases according to aetiology of fistula (Table I): (A) Obstetrical causes 40 (66.66%) patients, among them prolonged labor (vaginal delivery) 26 (43.33%), obstructed labor (caesarean. section) 14 (23.33%) - (B) Gynaecological causes 20 (33.33%) patients, among them total abdominal hysterectomy 18 (30.00%), malignancy 2 (33.33%).

Distribution of Cases according to Types (n=60)		
Types of Fistula	**No. of Patients**	**%**
Vesico-vaginal	36	60%
Vesico-cervical	6	10%
Uretero-vaginal	18	30%

Table 2: Distribution of Cases according to Types (n=60)

Table 2 shows distribution of cases according to types of fistula (n=60). Vesicovaginal fistula was the commonest and constituted 60%.

Types of Fistula	No. of Patients	%
Small (up to 2 cm)	32	53.3%
Medium (2.1 3 cm)	18	90%
Large (>3 cm.)	10	16%

Table 3: Distribution of Cases according to Size (n=60)

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In this study 53.3% of patients had small size fistula (commonest) which is shown in Table III. Out of 60 patients with vesicovaginal fistulae, 4 patients with small fistulae healed conservatively with continuous catheter drainage where one patient could not be operated upon because they suffered from carcinoma cervix in terminal stages. 4 patients were advised to come after 3 months because of presence of unhealthy granulation tissues around the fistulae. Therefore, 50 patients underwent surgery. The commonest approach used was transvaginal 34 (68%) and 16 patients (32%) were repaired through abdominal procedure with layer closure.

Number of Previous Attempt	No. of Patients	%
No Attempt	42	84%
One Attempt	26	12%
Two Attempt	2	4%

Table 4: Patient distribution as per previous attempt of repair (n=50)

Majority (84%) patients in this series had no history of previous attempts of repair. 12% patients had single attempt. Table IV shows previous attempts of repair.

Types of Fistula	No. of Patients	%	P-value
Conservative Management	10	16.67%	<0.001
Surgical Management	50	83.33%	
Cured	48	96%	
Failure	1	4%	

Table 4: Outcome of the Study (n=60)

Among 50 patients cure rate was 96% (n=50). In this study failure rate was 4% (Table-V). P value was <0.001 the test is significant. Repair of fistula was difficult due to associated additional cofactor - vaginal stenosis [4 (8.8%)], attachment to pubic bone [4 (8.8%)], associated hydronephrosis [8 (16%)]. Post-operative problems among patients were retention of urine due to catheter blockage [4 - (8%)], urethral leakage [2 (4%)], UTI [8 (16%)]. In 8% patients' catheter needed to be changed due to catheter block.

DISCUSSION

Obstetric fistula has gained international attention in the last 10-15 years. The condition has been researched mostly in developing countries like Nigeria, Ethiopia, Niger and Tanzania. Most studies of obstetric fistula uses observational, analytical study designs, mainly cross sectional studies. The research conducted are typically hospital based retrospective analysis of case records/patient records. Case control studies are not commonly used. The true incidence of vesicovaginal fistula is unknown as many women do not reach hospital and continue to be neglected by their husbands and ostracized from society. Overall prevalence has been estimated at 0.2 to 2% in different societies. Its occurrence reflects the level of maternity care in a community and most are a consequence of mismanaged labor, a sequelae to obstructed labor [9]. In my study period the frequency of vesicovaginal fistula among all admitted patients of Obstetric and Gynae Department was 0.40% and among Gynae patients the frequency was 1.5%. The highest prevalence is in poor communities of Africa and Asia and constitute 0.5-1.7% of gynaecological admission in teaching hospital [10]. Only three studies were identified using a case control design and that was one study in Nigeria, and a recent study in Zambia and in north eastern Nigeria [11-13]. There is a shared view that the main cause of obstetric fistula is prolonged labor and that the major outcome is stillbirths [14]. Research uncovers that many women are in labor for several days, often in the presence of a traditional birth attendant and little or no access to emergency obstetric care [15] The majority of research highlights the following predispositions: low reproductive age, biological factors such as short stature and incomplete pelvis growth [16,17] Cultural aspects such as female genital mutilation and socioeconomic aspects such as low education and poverty.8,12 Many studies found malnutrition to be a risk factor, however some claimed that this needs to be further researched. Many studies found that VVFs occurred mostly in first pregnancies [18]. However some studies did not agree with this. The success rate of obstetric fistula repair is in general in between 80 to 90 percentile [19] Success rate is generally lower for completely cured patients, sometimes as low as 60% [20] One main predictor of surgery outcome is identified in some studies to be the amount of vaginal scarring [21] The majority of iatrogenic fistulas develop subsequent to caesarean section. In our study the incidence of urological fistula arising out of obstetrical complication was 66.66% (40/60). In one study obstetrical complications were responsible for 88% cases and gynecological surgeries for 9% cases. One study conducted in Pakistan revealed a total number of 287 patients with genitourinary fistula. The mean age of patients with urinary fistula was 31.5 + 7.5 years, parity was 4.2 ±2.8, and duration of labor was 38.4 ±6.5 hours. The most common type of urinary fistula was vesico vaginal fistula [250 (89.9%)]. A total of 268 patients underwent surgery. The success rate following first, second and third attempt was 85%, 91% and 96% respectively. In our study, 50 patients underwent surgery among 30 patients. In our study prolonged labor with spontaneous delivery was responsible for 43.3% cases and obstructed labor with surgical interference was responsible for another 23.3%. So the study demonstrates

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the high rate of successful closure of the fistula in a specialized fistula unit, but highlights the problems of persistent urinary incontinence following closure [22]. There were some limitations in this study: period of study was insufficient to conduct a quality study, sample size was small that was not correlated with sample size calculation, it was a hospital based study, not representing the community population, this study was conducted in a single hospital which may not be the representative for the whole country.

CONCLUSION

It was found that fistulas occurred mainly due to prolonged and obstructed labour, which can be totally preventable by proper antenatal care, identification of high risk cases, timely referral, proper intra natal and postnatal care. Iatrogenic fistula can be prevented by proper training. Repair of genito urinary fistula in appropriate time and in appropriate route by an expert surgeon can minimize failure rate".

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