International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Dona GH et al. Int J Reprod Contracept Obstet Gynecol. 2024 Sep;13(9):2257-2261
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20242470

Original Research Article

Etiology of genitourinary fistula: experience from Rangpur Medical College Hospital

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Received: 14 June 2024
Accepted: 18 July 2024

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ABSTRACT

Background: Genitourinary fistula is one of the most distressing complications encountered in obstetrics and gynecology and constitute a major surgical challenge for the gynecologist. With advanced obstetric care, genitourinary fistula is rare in industrialized world but it is still a major health problem in underdeveloped countries, particularly in sub-Saharan Africa and Asia including Bangladesh. The aim of the study was to evaluate the etiology and risk factors of female genitourinary fistula a tertiary hospital of Bangladesh. To undertake a baseline evaluation of all genitourinary fistula cases and to evaluate the etiology and risk factors for development of genitourinary fistula.

Methods: This cross-sectional observational study was conducted at the inpatient and outpatient department of obstetrics and gynecololgy, Rangpur Medical College and Hospital, Rangpur from August 2018 to January 2019. A total 30 genitourinary fistula cases were admitted. All patients attending during the study period full filling both the inclusion and exclusion criteria in this study. In this consecutive sampling technique data was collected, coded, revised and entered into the statistical package for social science (SPSS) version (22).

Results: This study showed the mean age was 29.06 years and the majority was relatively young. Almost half (56.7%) of them were illiterate and majorities' husbands were agriculture (63.3%) or worker (26.7%). Majority had height in the range of ≤45 cm and almost all (87.6%) weighted below 50 kg. Vast majority (63.3%) of were multipara. Obstetrical conditions were the causes in the majority (80%) and gynecological factors were the causes in the remaining (20%). Although following cesarean section (29.2%) and rupture of uterus (12.5%) are important causes, obstructed labour still now constitutes the vast majority (58.3%) of the obstetric causes. Total abdominal hysterectomy constitutes the majority (66.7%) of the gynecological causes. Majority (86.7%) of the studied women did not receive antenatal care.

Conclusions: Although, the genitourinary fistulas in this study were majorly of obstetric origin, a relatively high proportion of cases were of iatrogenic origin. Government should provide universal access to timely and appropriate obstetric care, and also empower women.

Keywords: Genitourinary fistula, Etiology, Traditional birth attendants, Vesicovaginal fistula

INTRODUCTION

A genitourinary fistula is addressed as an atypical relation between the urinary (ureters, bladder, urethra) and the genital (uterus, cervix, vagina) tract either acquired or congenital with involuntary escape of urine in to the vagina.[1] Genitourinary fistula, majority of which are vesicovaginal fistula (VVF) is the most notorious complication encountered in obstetrics and gynaecology. Over two million women worldwide are dealing with obstetrical fistula. The incidence of fistula has been estimated about 1-2 per 1000 deliveries worldwide, with

an annual incidence of up to 50,000 to 100,000. Though the incidence differs from country to country, World Health Organization estimates the prevalence of obstetrical fistula is 0.3% of all deliveries. In Bangladesh 1.9% women are suffering from genitourinary fistula.[2] In developing countries 90% of these fistulas are a consequence of abandoned and obstructed labour as opposed to developed countries, where they are a complication of surgery or radiotherapy.[3] The overall incidence of traumatic fistula varies between 0.5-1.5% and bladder injuries are more common than ureteric one.[4] Prolonged, obstructed labour is the primary reason associated with obstetrical fistula. Other major contributing factors include poverty, illiteracy, low status of women, sex inequality, malnutrition, social and cultural issues to family planning and the lack of emergency obstetric care.[5] According to Waaldjik and Elkins genitourinary fistula can be classified on the basis of anatomical involvement, size and site of fistula.[6] This medical emergency is as old as mankind but its documentation is much younger than that. Management of such fistula continues to be challenging, testing the ingenuity and versatility of the operating surgeon, to evaluate nature of fistula. The occurrence of such fistula definitely dates since antiquity.[7] In recent years, there has been a shift in etiology of urinary fistula. The trend has changed from obstetric to gynecologic causes, mainly due to the advancement in obstetric practices, increased institutional delivery, improved intrapartum care, and availability of emergency cesarean sections (CS).[8]

The WHO identified that there are more than 130 000 new cases of obstetric genitourinary fistula each year and 2 million women currently living with untreated fistula in Asia and sub-Saharan Africa.[9] Obstetric fistula results from obstructed labor, which leading to ischemic necrosis of the walls between the vagina and the surrounding structures. As the injury heals, a fistula forms between the bladder (or rectum) and the vagina leading to socially debilitating incontinence. Further, these injuries can lead towards 'obstructed labor injury complex', characterized by fetal demise, uterine rupture, vaginal stenosis and contracture, amenorrhea, symphyseal separation and foot drop.[10]

Lately, the incidence of urinary fistula following gynaecological hysterectomy has increased. Because gynaecological surgeries are being performed by untrained health professionals at peripheral hospitals. Faulty surgical techniques, poor suture material, improper sterility maintenance are alarming reasons as well. This troublesome complication leaves the affected women with continuous discomfort which causes serious social problems, such as prohibition from family homes, and cooking and touching shared utensils.[11] Additionally, this devastating condition affecting the physical and psychological health of women. They are likely to be abandoned by their husband on whom they were economically dependent. Though it is not a life threatening but socially devitalizing situation.[12] Early age of marriage and childbearing, high parity, increased rate of obstructed labour and low contraceptive prevalence rate were the major contributory factors in Rangpur region of Bangladesh. Also there is increase referral from different districts of greater Rangpur to this only tertiary care center of this region.

Aim of the study was to evaluate the etiology and risk factors associated with female genitourinary fistula cases, to find out the demographic profile of study population and to take preventive measures and decrease the complications created by this. It will also enable us to create awareness in the society.

METHODS

This cross-sectional observational study was conducted in the department of obstetrics and gynecology, Rangpur Medical College and Hospital, Rangpur from August 2018 to January 2019.

A total 30 genitourinary fistula cases were admitted. Women with genitourinary fistula were the main requirement of inclusion criteria and study participants must give their consent to willingly participate in the study. On the other hand, genitourinary fistula associated with other fistula or having co-morbid conditions like genitourinary malignancy, history of getting radiotherapy were among excluded criteria. After taking informed consent from eligible patient/patient correspondent, data was collected using a structured questionnaire containing all the variables of interest. In this consecutive sampling technique data was collected, coded, revised and entered into the statistical package for social science (SPSS) version (22). Association of the risk factors of development of genitourinary fistula was analyzed by chi-square test. P value<0.05 was considered as significant. Protocols were strictly followed with proper confidentiality.

RESULTS

Table 1 shows 13.3% were age group ≤20 years, 20% were 21-25 years, 16.7% were 26-30 years, 26.7% were 31-35 years and 23.3% were 36-40 years. The average age was 29.06±6.82. Table shows maximum (56.7%) were illiterate followed by 26.7% were primary, 10% were secondary and 6.7% were higher secondary. Table shows majority were poor class socioeconomic status (80%).

Table 2 shows majority 63.3% hold occupational status of doing agriculture and only 3.3% were service holder.

Table 3 shows majority (70%) were height ≤145 cm and 30% were >145 cm in their height. In weight majority (86.7%) were ≤50 kg and 13.3% were >50 kg.

Table 1: Distribution of the study subjects (n=30) by demographic characteristics.

Demographic characteristics of study patients	Number of patients	Percentage
Age (in years)		
≤20	4	13.3
21-25	6	20
26-30	5	16.7
31-35	8	26.7
36-40	7	23.3
Educational status		
Illiterate	17	56.7
Primary	8	26.7
Secondary	3	10
Higher secondary	2	6.7
Socioeconomic status		
Poor	24	80
Middle	4	13.3
Higher	2	6.7

Table 2: Husband occupational status of the study subjects (n=30).

Occupational status	Number of patients	%
Agriculture	19	63.3
Business	2	6.7
Service holder	1	3.3
Worker	8	26.7

Table 3: Anthropometric characteristics (n=30).

Variables	Number of patients	Percentage
Height in cm		
≤145	21	70.0
>145	9	30.0
Weight in kg		
≤50	26	86.7
>50	4	13.3

Table 4: Distribution of study subjects by obstructive characteristics.

Obstructive characteristics	Number of patients	Percentage
Marital status		
Married	29	96.7
Unmarried	1	3.3
Parity		
Primipara	9	30
Multipara	19	63.3
Grand multipara	2	6.7
Antenatal care		
Yes	4	13.3
No	26	86.7
Place of delivery		
Home	17	56.7
Hospital/clinic	13	43.3

Table 5: Causes of fistula of the study subjects (n=30).

Cause of fistula	Number of patients	Percentage
Obstetrical cause	24	80.0
Obstructed labour	14	58.3
Following caesarean section	7	29.2
Rupture of uterus	3	12.5
Gynaecological cause	6	20.0
Total abdominal hysterectomy	4	66.7
Vaginal hysterectomy	1	16.7
Congenital	1	16.7

Table 4 shows majority (96.7%) were married. Table shows 30% had primipara, 63.3% had multipara and only 6.7% were grand multipara. Table shows majority (86.7%) did not receive antenatal care. Table shows 56.7% were home delivery and 43.3% were hospital and clinic.

Table 5 shows majority of causing fistula 80% were for obstetrical and 20% were of gynaecological.

DISCUSSION

In this study, women with fistulas were generally young, illiterate, poor, short statured, malnourished, got married at earlier age, multiparous, did not receive antenatal care and had developed a fistula after laboring for 48 hours or longer with vaginal delivery at home. The mean age of these selected studied women was 29.06±6.8 years and 13.3% were in age group ≤18 years. These findings consistent with Aalpona et al which is far better than findings of Islam et al who found 39% of fistula patients in age group 15-20 years.[13,14] The age of the majority of the studied women was 20-35 years which is consistent with previous studies done in this subcontinent.[15,16] An important finding was observed in the study that older

patients developed fistula in the earlier part of their life. But it took a long time to seek for appropriate treatment. Majority of them were either illiterate (56.7%) or had received formal education up to 5 years (26.7%) which was similar to the results of previous study. These findings clearly indicate that illiteracy is a strong predisposing factor for fistula occurrence. Apart from that, lack of nutrition is remarkably observed through the findings of height and weight. Considering the height, 70% of the patients belonged to ≤45 cm height group in this study. Women having height less than 150 cm are more likely to develop different degrees of feto-pelvic disproportion and require surgical intervention and about 70% having <50 kg of weight indicated about their malnourishment. These results are consistent with Aalpona et al and along with that An Indian study reported 69% of fistula patients to be short stature with height less than 4'5" comparable with present study.[13,14,17] Observing from socioeconomic status majority (80%) of the patient in this study were from poor socioeconomic status which is quite close to the other study in Begum and others.[12,18,19] Poor socioeconomic condition is inter-related to a number of other factors such as ignorance, lack of knowledge regarding antenatal care, gravity of the situation and treatment seeking behavior. Prevention of genital tract fistula requires significant changes in these social, economic and cultural issues. Through the occupation of husbands of the study participants of this study it is implicated that most of the respondents came from low socio-economic strata (agriculture 63.3%, worker 26.7%). Islam et al in their study reflected that 52% of respondents had a family income up to Tk.1000/- only whereas previous national data showing 40% of its inhabitants live below the poverty line also support our finding.[14,20] This generalized a view of economic condition of people and pointing out their inability to get the privilege of receiving proper treatment. In current study majority of the women (63.3%) were multipara; the frequency is lower than that observed by Saaqib et al (81.96%).[21] This is another cause of vulnerable health of women which later becomes prone to different gynaecological diseases. While analyzing the root cause it was explored that 24 (80%) women developed fistulas due to obstetric causes and gynaecological causes were responsible for fistula occurrence in the remaining 6 (20%). The obstetric causes were due to obstructed labour and following caesarean section was the predominant following 58.3% and 29.2% obstetric cause of fistulas. Majority of gynaecological fistulas resulted from either total abdominal hysterectomy (66.7%) or vaginal hysterectomy (16.7%). Therefore, the outcomes of the study are in well agreement with the findings of the other research works.[13] Several studies from this subcontinent showed etiology that varies country to country for the genitourinary fistulas, but obstructed labour was the leading obstetric cause among all studies.[21,22] Due to lack of knowledge and economical dependency on others, a large proportion of our women are unable to use reproductive health services and this study marked that majority (86.7%) of the fistula patients did not receive any antenatal care.[14] As a part of antenatal care deprivation, more than half (56.7%) of the deliveries were conducted at home probably by traditional birth attendants. The remaining (43.3%) of the deliveries were conducted at hospital after being handling at home first. This may associate with various gynaecological problems regarding genitourinary fistula. Whereas, Islam et al. in their study observed 64.6% of respondents had a home delivery assisted by TBA.[14] Therefore, the findings of the study emulate with the findings of other research works.[12,13]

The study has several limitations. This study was carried out in a small group of patients and it was carried out in only one fistula center, so it may not represent the scenario of the whole community. Maximum respondents were illiterate and there is every chance of recall bias.

CONCLUSION

This study shows obstetric cause was the commonest cause of genitourinary fistula. Also, illiteracy, low socio-economic status, malnutrition, short height, not using the healthcare facility for antenatal care, vaginal deliveries at home by unskilled birth attendants are common factors in obstetrical fistula. Family members and the society is also one of the major and difficult problem for treating gynaecologist. Its occurrence reflects the level of maternity care in a community. More emphasis should be given on prevention of fistula by increasing awareness among people about female education and empowerment, avoiding early marriage, availability of emergency obstetric care and family planning services.

Recommendations

Community awareness should be increased with decentralization of the maternity service. Effective health care planning starting from grassroots level to tertiary level along with the improvement in the quality of surgical practice the country and establishment of effective referral system is needed. As the study was done on only one fistula center, appropriate scenario might not reveal. Further research on vast group of people is recommended for better view of the problem

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Dona GH, Sultana F, Zhuma, Khan M, Afrin F, Akter T, et al. Etiology of genitourinary fistula: experience from Rangpur Medical College Hospital. Int J Reprod Contracept Obstet Gynecol 2024;13:2257-61.