

Profile of Obstetric and Iatrogenic Fistula Surgeries at Kathmandu Model Hospital

Ranjana Shrestha, Aruna Karki, Ganesh Dangal, Hema Pradhan, Kabin Bhattachan, Rekha Poudel, Nishma Bajracharya, Kenusha Devi Tiwari

Department of Obstetrics and Gynecology, Kathmandu Model Hospital, Nepal

DOI: <http://dx.doi.org/10.3126/njog.v13i2.21699>

ABSTRACT

Aims: Vesico-vaginal fistula (VVF) is an abnormal fistulous communication between the bladder and/or urethra and the vagina that allows continuous involuntary discharge of urine into the vaginal vault affecting patients' medical, physical, mental, social and sexual life. The aim of this study was to review and deliver a profile, their demography and outcome in the early phase of fistula surgery performed in our institute.

Methods: This was a retrospective study of 222 patients who underwent fistula surgery during the period of January 2012 to March 2018 in Kathmandu Model Hospital. The fistula were classified according to Goh's system. Patients' demography, obstetric characteristics and fistula repair outcomes were reviewed. The primary outcome was in terms of urinary continence.

Results: A total of 222 women aged between 10 to 65 years with a mean age of 31.4 were included. Majority of the patients had fistula due to obstetrical cause, contributing 58% (n=127) and in 42 % (n=95) of patients had fistula of gynecological etiology. Most of the patients had fistula of type 1a, contributing 38% (n=84) and only 0.01% (n=3) of type 3c and 4b according to Goh's classification. Among 127 fistulas repaired of obstetric etiology 100 (78.7%) patients and 85 (89.4%) out of 95 fistula patients of gynecological cause were continent and dry.

Conclusions: Our study showed obstructed and prolonged labor was the major cause of obstetric fistula, however iatrogenic fistula was also becoming common. Majority of our cases had successful outcome with some degree of stress in some patients.

Keywords: fistula repair, iatrogenic fistula, obstetric fistula, vesicovaginal fistula.

INTRODUCTION

Vesico-vaginal fistula (VVF) is an abnormal fistulous communication between the bladder and/or urethra and the vagina that allows the continuous involuntary discharge of urine into the vaginal vault affecting patients' medical, physical, mental, social and sexual life. Fistulas are a recurring problem in areas where women have inadequate access to quality emergency obstetric care in developing countries.¹ Obstetric fistula results from prolonged, obstructed labor when the presenting part of the fetus compresses tissues against the pelvic bone, causing pressure necrosis and rendering the woman either fecal incontinence or urinary incontinence.^{1,2} Fistula may be iatrogenic, when health providers may inadvertently cause injury to the urinary tract during obstetric or gynecological surgery. Although it is difficult to determine precise rate, it is estimated that there are at least two million women living with fistula primarily in sub-Saharan Africa and South Asia and some 50,000-100,000

women are affected each year.³ Accurate figures of the prevalence of obstetric fistula are difficult to obtain as women are often reluctant to disclose their condition and tend to isolate themselves in our part of the world.⁴ Surgical approach is the most commonly preferred for affected women and the success rate varies between 75%-95% in literature.^{5,6} Currently, only few gynecologists have been trained in Nepal to perform fistula surgeries at centers like Kathmandu Model Hospital, BPKIHS Dharan and Surkhet Hospital.⁷ Thousands of Nepalese women silently suffer from this tragedy of developing world and it is estimated that 200 to 400 new cases of this type fistula occur in Nepal each year.^{7,8} This study aims to present the status of obstetric and iatrogenic fistula surgeries in our institution and their outcome in early phase.

METHODS

This is a retrospective study of the patients who had undergone fistula surgery, Kathmandu Model Hospital between January 2012 and March 2018. The surgery was performed under spinal anesthesia. For all surgeries the basic protocol of fistula repair were followed strictly, such as: adequate exposure and mobilization of bladder after the excision of the scar to allow tension free closure, protection of the ureters,

CORRESPONDENCE

Dr Ranjana Shrestha
Department of Obstetrics and Gynecology,
Kathmandu Model Hospital, Nepal
Email: ranjana_514@hotmail.com
Phone: +977-9841-817268

support for the urethra where deficient, and dye test at the end of the surgery. The fistula were closed in a single layer with interrupted suture. Post-operative bladder catheterization was done usually for 14 days. The ureteric catheters were kept for 3 to 7 days. The principle of 3D i.e. dry, drinking and draining were confirmed. On the 14th day in dry patients, methylene blue dye test was performed before removal of the catheter. Following removal of the catheter, patients were asked to drink plenty of water and void frequently; and residual volume measured. The patients were discharged 24 hours after the removal of the catheter. The surgery was considered successful, if there was no signs of leakage and patient can hold urine. The data of the study was reviewed from the hospital records of the patients, after obtaining approval from the Institutional Review Committee of pfect-NEPAL/Kathmandu Model Hospital. Operation records of the patients were analyzed. All the patients who underwent fistula surgeries at our hospital were included. Their demographic profile, fistula etiology, kind of fistula, types of surgeries performed, outcome, hospital days and possible complications were analyzed. The primary outcome was in terms of urinary continence after 14 days of the repair. Data from the patent records were transferred to Microsoft Office Excel 2016.

RESULTS

A total of 222 patients with fistula surgery were included in the study. Majority of the patients had fistula due to obstetrical cause, contributing 58% (n=127) and 42% (n=95) of patients had fistula following gynecological surgeries. The demography

of the patients, their age in both group is shown in the Table 1.

Table 1. Age and parity of the patients.

	No. of Patients	
	Obstetrics group (n=127)	Gynecological group (n=95)
Age		
10		1 (1.1%)
15-20	11 (8.6%)	3 (3.2%)
21-25	30 (23.6%)	0.00
26-30	17 (13.4%)	3 (3.2%)
31-35	18 (14.2%)	14 (14.7%)
36-40	14 (11%)	16 (16.8%)
41-45	12 (9.5%)	16 (16.8%)
46-50	11 (8.7%)	23 (24.2%)
51-55	3 (2.4%)	8 (8.4%)
56-60	5 (3.9%)	7 (7.4%)
>60	6 (4.7%)	4 (4.2%)
Parity		
1 birth	43 (33.9%)	
2 births	30 (23.6%)	
3 births	23 (18.1%)	
4 births	18 (14.2%)	
>4births	13 (10.2%)	

The age ranged from 10 to 65 with the mean age of 31.4 yrs Most of the patients were of age group 21 to 25(23.6%) in obstetrics group and that of 46 to 50 years (24.2%) in gynecological group and 33.9 % (n=43) of patients with obstetric fistula had parity 1.

In this study most of the patients had fistula of type 1a, contributing 38% (n=84) and only 0.01% (n=3) of type 3c and 4b. Patients distribution according to Goh's classification is shown in Figure 1.

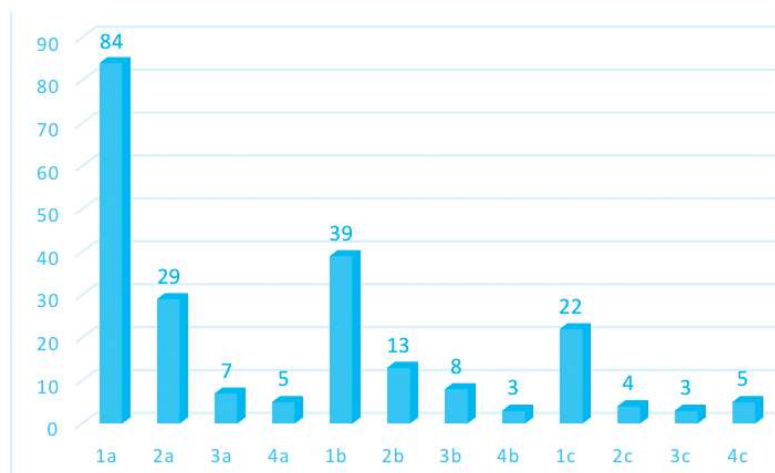


Figure 1. Patients distribution according to Goh's classification (n=222).

Thirty two (25%) patients had suffered the symptoms of fistula for 3-6 months obstetric group, whereas in gynecological group 46 (48%) patients with 2 weeks to 3 months before seeking for the treatment. The details are given in Figure 2 and Figure 3.

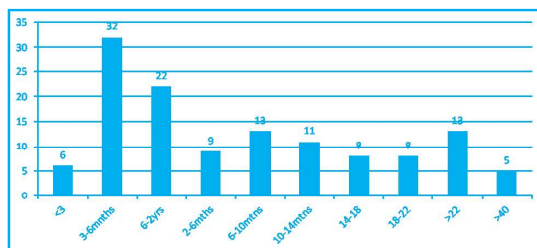


Figure 2. Duration of suffering of obstetric fistula (n=127).

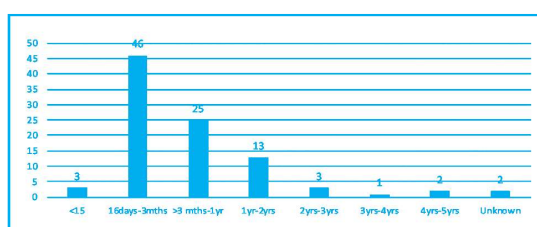


Figure 3. Duration of suffering of gynecological fistula (n=95).

In this study among 127 of patients with fistula of obstetric etiology the most common cause was due to prolonged and difficult vaginal delivery contributing 38.5% (n=49), where as in gynecological group post TLH/TAH was the most common cause of complication with fistula formation contributing 87.4% (n=83). The different causes among the obstetrical and gynecological group are listed in Table 2.

Table 2. Etiology of fistula (n=222).

Causes	No of Patients
Obstetric fistula (n=127):	
Prolonged and difficult vaginal delivery	49 (38.5%)
Instrumental	39 (30.7%)
Post Cesarean	28 (22.0%)
Post Cesarean Hysterectomy	5 (4.0%)
Ruptured uterus	6 (4.8%)
Gynecological fistula (n=95):	
Post TAH/TLH	83 (87.4%)
Post VH	6 (6.3%)
Special causes	6 (6.3%)

Two patients out of 222 were operated from the abdominal approach as they were difficult to access through the vaginal route. In two patients who had combined VVF and RVF, initially successful repair of RVF was performed and VVF repair was done in second setting. One patient with Goh classification 4ciii had undergone surgery with fat graft. One patient who had developed right ureteric fistula after 20 days of total laparoscopic hysterectomy for fibroid uterus, received treatment with cystoscopy ureteric double J stenting.

Among 127 fistula repaired of obstetric etiology 100 (78.7%) patients and of 95 fistula patients of gynecological cause 85 (89.4%) were continent and dry. 18 patients with obstetric fistula and 6 patients with gynecological fistula had failed repair. The outcome of the repair is detailed in Table 3.

Table 3. Outcome of repair (n=222).

	Obstetric Fistula (n=127)	Gynecological (n=95)
Dry and continent	100 (78.7%)	85 (89.4%)
Failed repair	18 (14.2%)	6 (6.3%)
Closed but incontinent	8 (6.3%)	1 (1.1%)
Broken on follow up	1 (0.8%)	3 (3.2%)

DISCUSSION

In our study, among 222, 58% (n=127) cases of fistula were of obstructed labor cause, and in 42% (n=95) of patients had fistula after hysterectomy. In the study done in Eastern Nepal it has been reported that, 95.6% fistula was due to obstructed labor and 4.4% of gynecological causes.⁷ This may be due to the different study region, as in our series, in Kathmandu Model Hospital, there were more number of post-hysterectomy fistula patients. The age range of the patients in our study was from 10 to 65 years with a mean age of 31.4 years. Majority of the patients were aged between 21 to 35 (51.2%) in obstetrics group and that of 46 to 50 years (24.2%) in gynecological group. In the study by Ileogben et al⁹ of 462 fistula patients, the mean age of the patients was 35.9 years and the modal age class was of age 20-39, contributing 50.2%. A similar study conducted in Malawi by Kalilani-Phiri et al.¹⁰ the median age was noted to be 29 years. This study showed the teenage pregnancy was not common in our set up contributing 6% of total study group, which is comparable with the study from eastern Nepal.⁷

The highest parity in our study was one. Forty three patients (33.9%) had given birth to only one child

at the time of presentation. Similar finding has been reported by Ileogben et al⁹ with 38.9% and 21.2% by Kalilani-Phiri et al.¹⁰ However, in the reports by Hilton et al¹¹ and Ibrahim et al¹² most cases of obstetric fistula occurred in primiparous women constituting 31.4% to 81% of the cases.

In our study most of the patients had fistula of type 1a, contributing 38% (n=84) and only 0.01% (n=3) of type 3c and 4b. The duration of symptoms of fistula before seeking for the treatment in Obstetrics group were 32 (25%) patients with 3-6 months, where as in gynecological group 46 (48%) patients with 2 weeks to 3 months symptomatic. This may be due to the lack of awareness of availability of treatment, literacy and socio economic constrains of the patients in our part of the world.

In this study among prolonged and difficult vaginal delivery was the most common cause of obstetric fistula contributing 38.5% (n=49), post-instrumental delivery 30.7% (39) and post cesarean delivery 22% (28). Ileogben et al⁷ reported the majority of the fistula (53.3%) were due to prolonged and difficult vaginal delivery, where as 19.1% and 42.6% were due to post instrumental and post caesarean respectively. Similar finding were presented in the study from eastern Nepal and by Mathur et al¹³ with 26% and 19% post-caesarean etiology respectively.⁹

In gynecological group post TLH/TAH was the most common cause of complication with fistula formation contributing 87.4%. Our results showed 78.7%

patients with obstetric fistula and 89.4% of fistula due to gynecological cause were continent and dry after surgery. 14.2% patients in first group and 6.3 % patients in second group had failed repair. Similar finding was reported by Maimoona et al¹⁴ with 85.7% success rate of their surgeries with majority of the fistulas (57.2%) at vault, juxta-cervical. The outcome of repair depended in the grade of severity of the classification, the presence of a combined RVF or ureterovaginal fistula. In this study most of the patients had fistula of type 1a, contributing 38%, which increased the success rate of outcome. The success of fistula repair varies in literature from 61-95%.¹¹⁻¹⁴ Due to lack of affordability, awareness and difficulty access to health care about 80% of women with this problem never seek for the medical treatment. Beside these, the patients have to wait for weeks to repair as there are few trained surgeons in this field, and there is inadequate numbers of supplies and equipment in our part of the world.¹⁵⁻¹⁷

CONCLUSIONS

The most common cause of vesico-vaginal fistula in this study was obstetrical, however iatrogenic fistula was also becoming common. Prolonged and obstructed labor was the major cause among other etiologies. The success rate depended on the type, site, scaring and size of the fistula. Although the success rate of repair was high, yet the attempt should be focused on prevention, awareness and education of the patients.

REFERENCES

1. Raassen TJI, Ngongo CJ, Mahendeka MM. Iatrogenic genitourinary fistula: an 18-year retrospective review of 805 injuries. *Int Urogynecol J*. 2014;25:1699-706.
2. Waaldik K. Surgical classification of obstetric fistulas. *Int J Gynecol Obstet*. 1995;49:161-3.
3. Miller S, Lister F, Webster M, Cowan B. Obstetric fistula: a preventable tragedy. *J Midwifery Womens Health*. 2005;50(4):286-94.
4. Ahmed S, Holtz SA. Social and economic consequences of obstetric fistula: life changed forever? *Int J Gynecol Obstet*. 2007;99:S10-S15.
5. Bazi T. Spontaneous closure of vesicovaginal fistula after bladder drainage alone: review of the evidence. *Int Urogynecol J Pelvic Floor Dysfunct*. 2007;18(4):475.
6. Sims JM, O An. The treatment of vesico-vaginal fistula. *Am J Med Sci*. 1852;23:59-82.
7. Upreti DK, Budhathoki B, Subedi S, Regmi MC. Vesicovaginal fistula at tertiary care center in eastern Nepal. *J Nep Med Assoc*. 2008;47(171):120-2.
8. Tebeu PM, Upadhyay M. Campaign to end fistula in Nepal: need assessment for obstetric fistula in Nepal. Kathmandu: UNFPA; 2011.
9. Ileogben SA, Patrik O, Ogbonnaya LU. Prevalence, profile and obstetric experience of fistula patients in Abakaliki, Southeast Nigeria. *Urogynaecologia*. 2011;25:20-4.
10. Kalilani-Phiri LV, Umar E, Lazaro d, Lunguzi J, Chilungo A. Prevalence of obstetric fistula in Malawi. *Int J Gynaecol Obstet*. 2010;109:204-8.
11. Hiltan P, Ward A. Epidemiological and surgical aspect of urogenital fistulae: a review of 25 years' experience in southeast Nigeria. *Int Urogynecol J Pelvic Floor Dysfunct*. 1998;9(4):189-94.
12. Ibrahim T, Sadiq AU, Daniel SO. Characteristics of VVF patients as seen at the specialist hospital, Sokoto, Nigeria. *West Afr J Med*. 2000;19(1):59-63.
13. Mathur R, Joshi N, Aggarwal G, Raikwar R, Shrivastava V, Mathur P, et al. Urogenital fistulae: A prospective study of 50 cases at a tertiary care hospital. *Urol Ann*. 2010 May-Aug;2(2): 67-70.
14. Maimoona H, Shaheena A, Hajira H. Profile and repair success of Vesio-Vaginal fistula in Lahore. *M Coll Physicians Surg Pak*. 2005;15(13):142-4.
15. Kelly J. An epidemiological study of vesicovaginal fistula in Addis Ababa. *World health statistics quarterly report*. 1995;48(1):15-7.
16. Dangal G, Thapa K, Yangzom K, Karki A. Obstetric fistula in the developing world: an agonizing tragedy. *NJOG*. 2013;8(2):5-15.
17. Upreti D, Babu S, Sharma M, Jha M. Obstetric urogenital fistula in eastern part of Nepal. *Asian Journal of Obstetrics and Gynecology Practice*. 2002;6(1):35-8.