

## Clinical Profile of Urogenital Fistula in Kathmandu Model Hospital

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### ABSTRACT

**Background:** To determine the causes of fistula and to share our experience in treating urogenital fistula and its surgical outcome.

**Methods:** This was a retrospective study done at Kathmandu Model Hospital from January 2014 to June 2019 including 261 patients operated for fistula. The patients were analyzed for age, type of fistula, cause, treatment and surgical outcome.

**Results:** Out of 261 patients operated, 59.38% cases had obstetric fistula, 38.69% had iatrogenic and 1.92% had traumatic fistula. Most of the patients with obstetric fistula were between 21 to 25 years of age whereas iatrogenic fistulae were between 46-50 years of age. The majority (54.84%) of obstetric fistulae were vesicovaginal fistula (54.84%) while the commonest type (77.36%) of iatrogenic fistula was vault fistula after abdominal hysterectomy.

**Conclusions:** This study showed that obstructed and neglected labor was still the major cause of genitourinary fistula in Nepal nevertheless iatrogenic fistula following pelvic surgery is increasing. The surgical outcome of repair of fistula was good.

**Keywords:** Iatrogenic fistula, obstructed labour, urogenital fistula.

### INTRODUCTION

Urogenital fistula is an abnormal communication between vagina and urinary bladder or rectum caused by prolonged obstructed labor. Greater the duration of obstruction greater will be the injury sometimes resulting in ischemia of whole anterior vaginal wall, bladder base, much of urethra and sometimes rectum.<sup>1</sup> Women suffer for years with urinary and or fecal incontinence, foot drop, ammoniacal dermatitis and are abandoned by families.

The true prevalence of obstetric fistula is not known. The commonly quoted prevalence estimate is two million cases and 50,000- 100,000 cases each year worldwide.<sup>2,3</sup> In Nepal, it is estimated that 200-400 cases of obstetric fistula occur each year leading to prevalence of about 4602 new cases.<sup>4</sup> This might be the tip of iceberg as 43% deliveries still occur at home and there is lack of strong national referral system.<sup>5</sup> The aim of our study was to determine the causes and types of fistula and to share our experience of treatment surgical outcome.

### METHODS

This was a retrospective study done at Kathmandu Model Hospital from January 2014 to June 2019. There were 261 patients operated for fistula. Ethical approval was obtained from Institutional review committee of plect-NEPAL/ Kathmandu Model Hospital. Data were collected after obtaining the approval in August 2019. All the patients diagnosed as urogenital fistula were admitted 2-5 days prior to operation. Goh system<sup>1</sup> of classification of fistula was followed which considers site and size of fistula, urethral length and scarring. Preoperative investigations as required for operation and pre-anesthetic checkup were done after admission. The routine investigations were complete blood count, blood grouping, serum creatinine, sodium, potassium, test for HIV and hepatitis B, chest X-ray and ECG if required. Physiotherapy was started if needed and pelvic floor exercises taught to all patients before surgery.

All the operations were done under spinal anesthesia through vaginal route and one case was done from

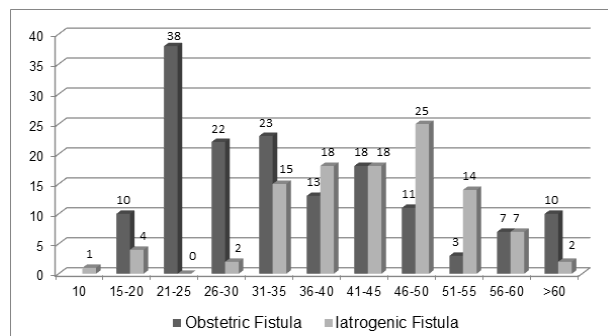
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abdominal route. The principles of fistula repair were followed, e.g., adequate exposure, mobilization of bladder after excision of scar, protection of ureters by inserting ureteric catheters if required, tension free closure of fistula and dye test at the end of operation. The fistulae were closed in single layer with interrupted suture. Foley catheter was continued for 14 days and ureteric catheter, if placed, was continued for 3-7 days. The 3D principle of dry, drinking and draining was followed. The patient should be dry and not leaking after surgery, drinking adequate amount of water around 3-4 liters a day and the catheter is not kinked or blocked. The catheter was removed on 14<sup>th</sup> day, if methylene blue dye test was negative. The patients were discharged after 2-3 days of catheter removal. Surgery was considered successful if the patient remained dry and continent after removal of catheter.

The patients' relevant records on demography, clinical information, treatments given and surgical outcome were digitalized by using Global Obstetric Fistula Automated Registry (GOFAR) which is a package of technology tools. GOFAR uses CommCare app with physical data collection tool in a tablet.

**RESULTS**

There were 261 patients operated during the study period with 294 operations including repeat surgeries for broken fistulae. One hundred and fifty-five (59.38%) cases had fistula due to obstetric cause whereas, 101 (38.69%) were iatrogenic which resulted after gynecological surgery. Five (1.92%) cases were traumatic. Most of the women with obstetric fistulae were between 21 to 25 years of age whereas iatrogenic fistulae were between 46-50 years of age (Figure 1).



**Figure 1. Age distribution of obstetric and iatrogenic fistula.**

The causes of fistula in our study are shown in Table 1. Majority of the obstetric fistula occurred after prolonged and difficult vaginal delivery whereas iatrogenic fistula resulted after abdominal hysterectomy. There were 5 cases of traumatic fistula (not due to operations),

4 resulted from accident and 1 was suspicious of instrumentation. Most common (54.84%) type of obstetric fistula was vesicovaginal fistula whereas among iatrogenic ones vault fistula after abdominal hysterectomy was the most common (81.18%), shown in Table 2.

**Table 1. Causes of fistula.**

Obstetrical cause (n=155)	
After prolonged and difficult *VD	65 (41.93%)
Instrumental delivery	43 (27.74%)
After C-section	34 (21.93%)
After caesarean hysterectomy	7 (4.51%)
Ruptured uterus	6 (3.87%)
Iatrogenic causes (n=101)	
After †TAH/‡TLH	94 (93.06%)
After §VH	7 (6.93%)
Traumatic causes (n=5)	

\* Vaginal delivery, † Total abdominal hysterectomy, ‡ Total laparoscopic hysterectomy, § vaginal hysterectomy

**Table 2. Types of fistula.**

Obstetric fistula (n=155)	
Vesicovaginal fistula	85 (54.84%)
Rectovaginal fistula	42 (27.09%)
Juxtacervical fistula	7 (4.51%)
Circumferential fistula	10 (6.45%)
Ureterovaginal fistula	8 (5.16%)
Double fistula	2 (1.29%)
Urethral fistula	1 (0.64%)
Iatrogenic fistula after gynecological operation (n=101)	
Vault fistula after *TAH/†TLH	82 (81.18%)
Vault fistula after ‡VH	3 (2.97%)
Ureterovaginal fistula After VH/TAH/TLH	16 (15.84%)

\*Total abdominal hysterectomy, † Total laparoscopic hysterectomy, ‡ Vaginal hysterectomy

There were 24 ureterovaginal fistulae; 7 resulted after caesarean section for obstructed labor, 1 after caesarean hysterectomy and 16 after abdominal hysterectomy. Fifteen patients needed ureteroneocystostomy and 8 were treated with DJ stent. One patient was lost to follow up. One patient with complex obstetric fistula was operated twice through vaginal route which failed and was operated successfully through abdominal route. Among cases with obstetric fistula, 121 (78.06%) cases were dry and continent whereas in iatrogenic ones, 89 (88.12%) were successful. Among women with traumatic fistula, 80% had successful repair. Among obstetric fistula patients 14.84% had failed repair, whereas in iatrogenic fistula group 7.92% had failed repair. In 9 patients

with obstetric fistula and one patient with iatrogenic fistula, the surgery was successful but patients were incontinent. On follow up 2 in obstetric group and 3 in iatrogenic group had broken fistula (Table 3).

Table 3. Outcome of fistula surgery.

Outcome	Obstetric Fistula (n=155)	Iatrogenic Fistula (n=101)	Traumatic Fistula (n=5)
Dry and continent	121 (78.06%)	89 (88.12%)	4 (80.00%)
Failed repair	23 (14.84%)	8 (7.92%)	1 (20.00%)
Closed but incontinent	9 (5.81%)	1 (0.99%)	0
Broken on follow up	2 (1.29%)	3 (2.97%)	0

## DISCUSSION

Urogenital fistula is the most devastating and preventable tragedy of childbirth in developing countries. As majorities of deliveries occur at home and due to lack of diagnosis, referral and transportation, women suffer for years before seeking treatment. In our study, most of the patients of obstetric fistula were between 21-25 years of age. In a study from Pakistan, the majority of patients were below 30 years. This shows social trend of early marriage and child bearing in developing countries.<sup>6</sup>

We followed the basic principles of fistula surgery as in other studies.<sup>7-9</sup> In the present study, 59.38% fistulae were due to obstetric cause and 38.69% were iatrogenic resulting after gynecological surgery. In a study from a developing country, majority of fistulae occurred after obstetric injury (75.93%) and only 19.54% occurred after gynecological surgery.<sup>6</sup>

In our earlier study, 70% fistulae were due to obstetric cause and 30% resulted following gynecological surgery.<sup>10</sup> In the present study, the proportion of iatrogenic fistulae following pelvic surgery has increased. Kathmandu Model Hospital is the referral center for fistula surgery from all over Nepal. All the cases we operated were referred from other centers. This explains the increment in the number of iatrogenic fistulae. So, the operating gynecologist should be aware of preventing and recognizing urological injuries.<sup>11-13</sup>

Most fistula surgeons repair fistula through vaginal route as in our study, this might be due to the fact that surgeons operating in our study are FIGO trained fellows.<sup>7,8,11,12</sup> Only one patient underwent surgery via abdominal route as the vaginal access was difficult in her. In the present study, there were 24 ureterovaginal fistulae, 8 resulted after obstetric surgery and 16 resulted after abdominal hysterectomy. In the study from Nigeria 18 patients had

ureteric injury out of which 11 resulted after Caesarean section and 4 after abdominal hysterectomy.<sup>14</sup>

In our study, 78.06% of all obstetric fistula and 88.12% of iatrogenic fistulae were successfully repaired. The overall success rate was 81.99%. Literature shows 61-95% success depending on type, site, size, number of attempts and combined fistula.<sup>15-17</sup> In our study, 23 ureterovaginal fistulae treatment was successful and one case lost to follow up. In the study from Pakistan, the result of ureterovaginal fistula treatment was 100% success.<sup>6</sup>

## CONCLUSIONS

This study showed that obstructed and neglected labor was still the major cause of genitourinary fistula in developing countries like Nepal. Success of repair was high and most were continent following fistula repair. Gynecologists should be aware that iatrogenic fistula following pelvic surgery is increasing. To eliminate the problem, essential obstetric care and training to prevent urogenital fistula should be integrated in the health care system and curriculum and gynecologists should practice preventive measures.

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## CONFLICTS OF INTEREST

None.

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