

Causes and Management of Urogenital Fistula

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Objective: To audit the causes and management outcome of urogenital fistula (UGF) at Lady Willingdon hospital.

Study Design: A prospective descriptive study.

Place and Duration of Study: The department of obstetrics and gynecology Lady Willingdon Hospital Lahore from July 2009 to July 2010.

Patients and Methods: All patients of urogenital fistulae except due to malignancy and radiation were included in the study. History of demographic features, cause of fistula and previous attempts at surgery was taken. Investigations included urine culture, intravenous pyelogram and examination under anesthesia. The method of treatment and outcome was noted.

Results: 61 patients were included in the study. The formation of Urogenital fistulae was found to be more common in women of child bearing age (96.72%). Most of the patients belonged to lower socioeconomic group (100%) and to the rural areas (95%). The causative factor was obstetrical trauma in 43 (70%) cases, due to either obstructed labor (37.7%) or cesarean section (32.78%). Other causes were gynecological surgeries like abdominal hysterectomies (27.87%) and septic induced abortion (1.63%). Surgical repair was performed in 58 patients. Overall success rate of different procedures was 77.04%. Vasicovaginal fistula (VVF) was found to be most common type of fistula. 43 / 61 patients (70.49%) had VVF. Repair of VVF was successful in 81.39% cases. Six patients out of 43 VVFs, had fistula of short duration and had a trial of conservative management. Success rate was 50% in patients managed conservatively. Uretrovaginal fistula was found in 5 cases (8.2%) with 100% successful repair. Urethrovaginal fistula was found in 3 (4.92%) cases with no success through combined abdominovaginal route. All the three cases of Vasicouterine fistula (4.92%) were repaired abdominally with success rate of 66.67%. There were 7 cases of vasicocervical fistula (12.47%). Vaginal repair was performed with 71.43% success rate.

Conclusion: Vasicovaginal fistula was the commonest type of urogenital fistula. Transvaginal route was most successful route of repair for VVF. The commonest cause was obstetrical trauma which was preventable by improvement of health education and maternity care in rural areas.

Key Words: Fistula. Urogenital fistula. Vasicovaginal fistula. Urethrovaginal fistula, Obstetrical trauma.

Introduction

Urogenital fistula is an abnormal communication extending between the urinary and the genital tract that allows the continuous involuntary discharge of urine through the vagina.¹ This devastating complication has profound effects on the physical and psychological health as well as on the social life of the patients.²

In developing countries, fistulas are caused by either due to mismanagement of second stage and obstructed labor or after abdominal hysterectomy (TAH) due to lack of proper surgical expertise. An accurate diagnosis is paramount before consideration of repair.³ Numerous techniques have been used for treatment of VVF. In patients coming within 24 hours of injury and without any evidence of infection, immediate surgery is performed. If there is evidence of inflammation, or tissue edema, it is better to do conservative management for 6 weeks. Conservative management involves catheterization and proper antibiotic cover with good nutritional supplements. Tissue reaction should have subsided before undertaking surgery.

Surgery involves repair of fistula through either trans-

abdominal or transvaginal route or combined approach. The success rate has been associated with etiology of fistula, size of fistula and number of previous failed attempts at repair.⁴

This study is an audit of cases of fistula in last one year from July 2009-2010. The objective was to find the causes, types and management outcome of cases of urogenital fistulas.

Study Design

This study was carried out at department of gynae and obstetrics, Lady Willingdon Hospital Lahore, from July 2009 to July 2010. Data was collected prospectively. Sixty one patients of UVF resulting from causes other than malignancies and radiations were included in the study. Detailed history was taken to record age, nature of trauma, time interval of appearance of fistula and previous attempts of repair if any. Ureteric involvement was diagnosed by evidence of hydronephrosis on ultrasound scan and intravenous pyelogram showing flaring of dye around ureters. Further evaluation for number, location and type of fistula was done by examination under anesthesia and dye test. Methods of repair included the vaginal repair, the abdominal repair, and

the abdominovaginal repair. Postoperatively patients were given antibiotic cover with third generation cephalosporin or quinolones. Continuous bladder drainage was ensured through Foleys catheter. Anticholinergic drugs were given to relieve bladder spasms. Success was described as absence of leakage of urine through vagina on follow up. Statistics were given in percentage to describe the results.

Results

During one year period, 61 patients were included in the study.

Table 1: Age distribution of women with urogenital fistula.

Age in Years	Number of Patients	Percentage
< 20	4	6.55
20 – 30	29	47.54
30 – 40	18	29.50
40 – 50	8	13.11
50 – 60	2	3.28

Majority of patients belonged to reproductive age group 29 (96.72%) while a small percentage belonged to the age group above 50 years. Maximum cases were in the range of 20 – 30 years.

Demographically, 50 patients (81.96%) were multipara, 58 patients (95%) came from rural areas and 100% were from the lower socio-economic strata. Majority of patients (83.6%) were illiterate and malnourished (77%).

Obstetrical trauma was found to be the commonest cause of fistula in this study. Obstructed labour was responsible for 23 cases (37.70%) and 20 cases (32.78%) were post LS-CS. Other causes were TAH (27.87%) and one case after septic induced abortion (1.63%).

VVF was the most common type of fistula encountered. Less frequently, urogenital fistulas were found to occur between the bladder and cervix or uterus; between the ureters and vagina and between the urethra and vagina.

Seven patients presented within 48 hours of onset of urine leaking, one case was successfully repaired while 6



Fig. 1: Causes of Fistula

Table 2: Other demographic features.

Demographic Features	Groups	Patient #	% age
Parity	Primipara	11	18
	Multipara	50	82
Residence	Urban	3	5
	Rural	58	95
Socioeconomic status	High	0	0
	Low	61	100
Educational status	Illiterate	51	83.6
	Matriculate	10	16.4
Nutritional status	Malnourished	47	77
	Well nourished	14	23

Table 3: Types of fistula.

Type of Fistula	Number of Patients	% ages
Uretrovaginal	5	8.20
Vasicovaginal	43	70.49
Urethrovaginal	3	4.92
Vasicocervical	7	12.47
vasicouterine	3	4.92

patients with VVF less than 48 hours were managed conservatively. They were catheterized, antibiotic cover was given according to urine culture report and multivitamins and high protein diet was advised. Patients were sent home and were called after 6 weeks. In three out of these 6 patients (50%), conservative management failed and surgery was performed after 3 months. In rest of the 58 cases surgical repair was performed through either abdominal route or vaginal route or a combination of both routes. Postoperatively, all the patients were kept catheterized for 21 days. Continuous urinary stream was maintained. Constipation was avoided by laxatives, protein rich diet and multivitamins were prescribed. Urine culture was sent every 4th day for microscopy and culture sensitivity. Antibiotics were given according to the report.

77.04% of all patients were cured while rest of the patients had a recurrence. Recurrence occurred in those cases where fistula was complex or large or involving urethra and in those who already had failed repair.

Vaginal route was most commonly used route with highest

Table 4: Management outcome.

Type of Fistula	Number of Patients	Cured Cases	Success Rate %
Vasico vaginal	43	35	81.39
Uretrovaginal	5	5	100%
Urethrovaginal	3	0	Nil
Vasicouterine	3	2	66.67
Vasicocervical	7	5	71.43
Total	61	47	77.04

Table 5: Method of Repair.

Management	# Of Cases	Cured Cases	Success Rate
conservative	6	3	50%
Abdominal repair	15	9	60%
Vaginal	40	34	85%
Combined route	3	0	0%

success rate (85%). Success rate of abdominal repair was 60%.

Combined repair was used in 3 cases of VVF involving the urethra. Unfortunately none of them was successful operation due to repeated repairs (3 – 5 times). In one of the patients bypass surgery was performed while rest of the patients were lost to follow up.

Discussion

Obstructed labour is the major cause of urogenital fistulas in the third world countries like Pakistan⁵. Birth trauma occurs due to prolonged and difficult deliveries that can cause ischemic necrosis of the vaginal vault and the posterior bladder wall, causing them to slough off, resulting in passage of urine through vagina. The commonest cause of fistula in this study is obstructed labor and cesarean section.

Urogenital fistulae are of varied types, with VVF being the most common in this and other national and international studies.^{2,3,5,6} On the suspicion of a VVF, a thorough vaginal examination should be done, in order to identify the exact size and location. Special care should be taken to find out ureteric and urethral involvement as urologist help is required for these procedures.

There are varied approaches for repair of these urogenital fistulae viz. abdominal and vaginal. The abdominal approach may be used to treat all types of UVF and preferred when there is ureteric involvement. The vaginal approach involves a tension free fistula closure with or without tract excision.

The success rate of fistula operation depends greatly on

location, surface area, number and no of previous repairs. Different studies show varying success rates for abdominal and vaginal routes.

In this study, Uretrovaginal fistula met 100% success rate where as in VVF success rate was 81.39. This success rate goes well with other national and international studies.⁷⁻⁹

Patients with simple, small, low lying fistula were subjected to vaginal repair which has contributed to a better success rate as compared to the abdominal route where cases with repeated repairs, high up, large and complex fistula were selected. All the 3 cases of Urethrovaginal fistulas had failed repair for several times, their fistulae were large in size with extensive tissue loss and fibrosis. Their repairs were attempted by combined abdominal and vaginal routes but they failed to heal due to tension in approximation of tissues and failure to separate the layers properly due to scarring.

According to the WHO 1991 Report on Obstetric Fistulae, women with fistulae come almost exclusively from poor families and communities.¹⁰ This goes well with results of this study. The majority of the total births in this study were conducted by Dai's or untrained birth attendants. This is due to poverty, illiteracy and to some extent ignorance of people to utilize health facilities. These obstetric fistulae can be prevented by educating the population to utilize maternity services. Labour should be supervised by trained health personnel and difficult labour referred early to appropriate health care facility.

A smaller but significant number of cases were iatrogenic due to cesarean section and instrumental deliveries performed by doctors in rural areas. This highlights the need that doctors providing maternity services in these areas should attend refresher courses at regular intervals in teaching hospitals to learn the best operative techniques and newly appointed doctors should have proper training for instrumental deliveries and caesarean section.

Surgical fistulas can also be prevented by improvement in surgical expertise in rural areas.

Conclusion

VVF is found to be the commonest type of Fistula. It is mostly due to obstetrical causes. Obstetrical trauma was the commonest cause of VVF and transvaginal repair was the most successful method of repair in this series. Despite the good results of surgical repair, attempt should be focused on the prevention of VVF. With proper health education, improvement in the quality of surgical practice and maternity services in the country, the incidence of genitourinary fistulae will be reduced.

References

1. Riley VJ, Spurlock J. Vasico vaginal Fistula. 2006; [cited 2007 Jul]: [25 screens]. Available from URL: <http://www.emedicine.com/med/topic 3321>

2. Lewis A, Kaufman MR, Wolter CE, Phillips SE, Maggi D, Condry L, Dmochowski RR, Smith JA Jr. Genitourinary fistula experience in Sierra Leone: review of 505 cases. *J Urol*. 2009 Apr; 181 (4): 1725-31.
3. Pharaon S. Lower Genitourinary Fistulae. *Saudi J Kidney Dis Transpl* 2007; 18: 643-7.
4. Rana Muhammad Mubeen, Farhat Naheed, Khursheed Anwar. Management of vesicovaginal fistulae in urological context. *J Coll Physicians and Surg Pak* Jan 2007; 17 (1): 28-31.
5. Malik Hussain Jalbani, Rajib Ali Deenari, Jan Muhammad Shaikh. Vesico-vaginal fistula – experience of surgical repair at Larkana. *Pak J Med Res* Jul – Sep 2006; 45 (3): 63-5.
6. Mumtaz Rasool, Shafqat Ali Tabassum, Fariha Mumtaz. Vesico-vaginal fistula repair; urologist's experience at Bahawalpur. *Professional Med J* Jul – Sep 2006; 13 (3): 445-52.
7. Kapoor R, Ansari MS, Singh P, Gupta P, Khurana N, Mandhani A, et al. Management of vesicovaginal fistula : An experience of 52 cases with a rationalized algorithm for choosing the transvaginal or transabdominal approach. *Indian J Urol* 2007; 23: 372-376.
8. Arrow SS, Hamlin EC, Wall LL. Obstructed labor injury complex: Obstetric fistula formation and the multifaceted morbidity of maternal birth trauma in the developing world. *Obstet Gynecol Surv* 1996; 51: 568-574.
9. Nawaz H, Khan M, Tareen FM, Khan S. Retrospective study of 213 cases of female urogenital fistulae at the Department of Urology and Transplantation Civil Hospital Quetta, Pakistan. *J Pak Med Assoc* 2010; 60 (1): 28-32.
10. World Health Organization. *Obstetric fistula. A review of available information.* WHO / MCH / 91.5. Geneva: WHO; 1991.
11. Mallik MA, Iqbal Z. Vesicovaginal fistulae: etiology and management at Allied Hospital, Faisalabad. *Pak J Surg* Oct - Dec 2005; 21 (2): 93-6.
12. Farah Yousaf, Muhammad Muzammal Tahir, Shahida Sheikh. Vesicovaginal fistula (VVF) – A prospective analysis *Ann King Edward Med Coll* Apr – Jun 2004; 10 (2): 132-4.
13. Nabeela Waheed, Muhammad Hanif, Rizwana Chaudhri. Post – cesarean vesicouterine fistula (youssef's syndrome) *Rawal Med J* Jan – Jun 2010; 35 (1): 111-2.
14. Mathur R, Joshi N, Aggarwal G, Raikwar R, Shrivastava V, Mathur P, Raikwar P, Joshi R. Urogenital fistulae : A prospective study of 50 cases at a tertiary care hospital. *Urol Ann* 2010; 2: 67-70.
15. Ijaiya MA, Aboyeji PA. Obstetric urogenital fistula : The Ilorin experience, Nigeria. *West African Journal of Medicine* 2004; Vol. 23 (1): 7-9.
16. Puri M, Goyal U, Jain S, Pasrija S. A rare case of vesicovaginal fistula following illegal abortion. *Indian J Med Sci*. 2005; 59: 30-1.
17. Singh O, Gupta SS, Mathur RK. Urogenital Fistulas in Women, 5 – year Experience at a Single Centre. *Urol J* 2010; 7: 35-39.
18. Hilton P, Ward A. Epidemiological and surgical aspects of urogenital fistulae : A review of 25 years' experience in southeast Nigeria. *Int Urogynecol J Pelvic Floor Dysfunct* 1998; 9: 189-194.
19. Hanif MS, Saeed K, Sheikh MA. Surgical Management of Genitourinary Fistula. *J Pak Med Assoc* 2005; 55 (7): 280-284.
20. Hassan MA, Ekele BA. Vesicovaginal fistula: Do the patients know the cause? *Ann of Afr Med* 2009; 8 (2): 122-126.
21. Kapoor R, Ansari MS, Singh P, Gupta P, Khurana N, Mandhani A, et al. Management of vesicovaginal fistula : An experience of 52 cases with a rationalized algorithm for choosing the transvaginal or transabdominal approach. *Indian J Urol* 2007; 23: 372-376.
22. Arrow SS, Hamlin EC, Wall LL. Obstructed labor injury complex : Obstetric fistula formation and the multifaceted morbidity of maternal birth trauma in the developing world. *Obstet Gynecol Surv* 1996; 51: 568-574.
23. Nawaz H, Khan M, Tareen FM, Khan S. Retrospective study of 213 cases of female urogenital fistulae at the Department of Urology and Transplantation Civil Hospital Quetta, Pakistan. *J Pak Med Assoc* 2010; 60 (1): 28-32.
24. Wall LL, Karshima JA, Kirschner C, Arrowsmith SD. The obstetric vesicovaginal fistula : Characteristics of 899 patients from Jos, Nigeria. *Am J Obstet Gynecol* 2004; 190: 1011-1019.
25. Ezegwui HU, Nwogu-Ikojo EE. Vesico vaginal fistula in Eastern Nigeria. *J Obstet Gynaecol* 2005; 25: 589-591.
26. Kochakarn W, Pummangura W. A New Dimension in Vesicovaginal Fistula Management: An 8 – year Experience at Ramathibodi Hospital. *Asian J Surg* 2007; 30 (4): 267-271.
27. Kumar S, Kekre NS, Gopalakrishan G. Vesicovaginal fistula : An update. *Indian J Urol* 2007; 23 (2): 187–191.