

Genitourinary Fistula - An Experience from a Tertiary Care Hospital

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Abstract

Genito urinary fistula remains a frustrating condition for patients in the developing world. We retrospectively analysed twenty three women who underwent fistula repair over the last 5 years in one unit at Department of Obstetric and Gynaecology, All India Institute of Medical Sciences. Twenty-seven fistulae were repaired in 23 women of which 78.2% were vesicovaginal fistula. Majority of these fistula (73.9%) were obstetric in origin, as a result of neglected, mismanaged labour. Surgical repair was the mainstay with 100% success for those undergoing primary repair and an overall success rate of 83.3% for vesico vaginal fistula. Though principles of fistula repair were adhered to by the operating surgeon, each patient was unique. Surgeons trained in such repair can individually vary approach and technique to suit each patient giving high success rate.

Key words

Vesicovaginal fistula, Rectovaginal fistula, Obstructed labour.

Introduction

Genito urinary fistula is a devastating condition affecting the physical and psychological health of women. With advanced obstetric care, these fistula are rare in industrialized world, but they continue to plague women in the third world. The true incidence of this problem is unknown as many such women with fistula never come to medical attention. An incidence of 1-2 per 1000 deliveries has been estimated world wide, with an annual incidence of upto 50,000 to 1,00,000 (1). In developing countries, including India, 90% of these fistula are a consequence of neglected and obstructed labour (2,3) as opposed to developed countries, where they are a complication of surgery or radiation therapy for cancer (4). Management of such fistula continues to be a challenge, testing the ingenuity and versatility of the operating surgeon. Experience in managing such cases has been based on retrospective case series rather than scientific research. The present study is an original experience of genitourinary fistulae referred to a tertiary referral hospital, and repaired under one academic unit.

Material and Methods

Between May 1999 and April 2004, we reviewed 23 women who underwent repair of genitourinary fistula in one academic unit of obstetrics and gynaecology, at All India Institute of Medical Sciences, New Delhi. Each woman was evaluated with a detailed history as regards age, parity, antecedent event leading to fistula i.e. obstetric or gynaecological. Obstetrical events including duration of labour, place, type of delivery, pregnancy outcome, social circumstances and duration of fistula were detailed. All patients were examined in the outpatients and in the operating theatre. The assessment included the woman's general physical condition, size, site and number of fistula, amount of scarring of fistulous margins or stenosis of the vagina. Methylene blue dye test was carried when the fistula was not obvious on examination. Cystoscopy, intravenous pyelography were done in all cases to complete the work up. Prior to repair, preoperative barrier cream was given to those with ammoniacal dermatitis. Urine culture and sensitivity was sent by collecting urine on sterile speculum and repair

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was taken after ensuring a sterile specimen subsequent to antibiotic treatment. Prophylactic antibiotics were given to all before surgery. Transvaginal approach was the preferred route, with transabdominal repair resorted in those fistula which were high, on post vaginal wall, difficult vaginal access with vaginal stenosis and in cases of uretrovaginal fistula. Principles of fistula repair, as adequate mobilization of bladder, excision of scar tissue, tension free layered closure and good hemostasis were adhered. Schuchardts incision or episiotomy was given to facilitate exposure during transvaginal repair when required. Interposition of grafts was done in all transabdominal repairs and in those transvaginal repairs where there was excessive fibrosis of fistulous margins. Continuous post-operative bladder drainage was ensured with urethral foleys catheter for simple transvaginal repair. The balloon was not inflated in those involving bladder neck. A suprapubic catheterization was preferred for transabdominal repair. Those with associated high rectovaginal fistula underwent a colostomy followed by repair and subsequent colostomy closure. All patients were followed up initially for a fortnight after discharge and then at 3 and 6 months. On an average 6 months follow up was achieved to define success, if the women was continent.

Results

Twenty-seven fistulas were repaired among twenty-three women, 2 having associated rectovaginal fistula and 2 having more than one fistula. The mean age of these women was 25.4 year \pm 3.7 (range 19-41 yrs). Majority i.e. 18 of these patients (78.2%) had vesicovaginal fistula. Uretrovaginal and vesico cervical fistula were found in 3 (13.1%) and 2 (8.6%) patients respectively. The site of these fistulae is described in Table I.

Fistula were obstetric in origin in 17 (73.9%) women and following gynaecological events in remaining 6 (28.1%). The antecedent events resulting in fistula are detailed in Table II.

Three cases of uretric fistula were following difficult abdominal hysterectomy for severe endometriosis, ovarian cancer, and broad ligament fibroid. Of the obstetric fistula, 7 (41.1%) developed during course of first pregnancy and 3 (17.6%) were among women with high parity. Rectovaginal fistula developed along with vesicovaginal fistula in two women during the course of

obstructed labour followed by abdominal delivery in grand multipara. The average duration of labour in these women was 32.4 hours (range 18-72hrs). Labour was conducted at home in all, but by trained birth attendants in only 4 (23.5%) women. The fetal outcome was poor in 12 (70.5%) women, resulting in still births and early neonatal deaths.

Of the gynaecological fistula, the three-uretric fistula developed secondary to injury for severe endometriosis, broad ligament fibroid and second look laparotomy for ovarian malignancy. There was one post-traumatic fistula after coital injury, which was triangular in position and underwent two failed attempts prior to a successful repair with us. Both the post-abortal fistula were following surgical evacuation by untrained professional and were supra-triangular in position.

The average interval between onset of fistula and repair was 4.7 months (range 3-41 months) Preoperative cystoscopy recognized bladder stones in 3 cases, and proximity of fistulous margin to uretric orifices in another 3 cases which required uretric catheterization prior to repair. Primary repair of VVF was done for 14 (77.7%) women and 4 (22.3%) women underwent repeat fistula repairs. All the repeat attempts had repairs done outside our institution. Vaginal route was undertaken in 16 (88.8%) women repairing 18 fistulas. Schuchardt's incision was given in two patients with vaginal scarring. Maritus graft was used in one patient who had extensive fibrosis of fistula and had two failed attempts earlier. This graft proved to be successful in her third attempt. Dynamic external oblique aponeurosis sling was used in one case with juxta-urethral fistula repaired vaginally. The sling was attempted to prevent post-operative incontinence with such fistula where sphincter involvement is likely. Abdominal repair was done in three uretro-vaginal and four VVF. Omental graft was used in all 4 abdominal VVF repairs. All the three uretro vaginal fistula had uretric reimplantation with Boari's flap. Associated rectovaginal fistula were repaired in two cases at same sitting and were successful. Two women underwent hysterectomy at the time of abdominal repair for associated pathology (dysfunctional uterine bleeding).

The mean operating time was 126 \pm 61.4 min. (range 40-300 min.). Mean hospital stay was 15 days \pm 4.1 days (Range 10-27 days). On follow up success rate for



primary repairs of VVF was 100% with an overall success rate of 83.3% (15/18). The success rate for vaginal repair was 81.25% (13/16) and 100% for abdominal in our series. The three failures were those who had failed attempts outside. All the uterovaginal and rectovaginal fistula were successful at the first attempt.

Table I
Site of Genital Tract Fistula

Site of Fistula	No.	(%)
VESICO VAGINAL *	20	78.2
<i>Triagonal</i>	10	
<i>Bladder neck</i>	3	
<i>Interuretric</i>	4	
<i>Supratriagonal</i>	3	
URETRO VAGINAL	3	13.1
VESICO CERVICO VAGINAL	2	8.6
RECTO VAGINAL (HIGH)	2	8.6

* Two women had more than one fistula.

Table II
Antecedent events related to fistula formation

Antecedent Event	No. (%)
OBSTETRIC	17 (73.9%)
<i>Obstructed labour with vaginal delivery</i>	8
<i>Obstructed labour with caesarean section</i>	2
<i>Obstructed labour with rupture uterus</i>	3
Instrumental vaginal delivery	2
<i>Post abortal</i>	2
GYNAECOLOGIC	5 (21.7%)
TRAUMATIC (Post coital)	1 (4.34%)

Discussion

The true incidence of genito-urinary fistula is unknown as many women do not reach hospital, and continue to be neglected by their husbands and ostracized from society. An overall prevalence has been estimated at 0.2 to 2% in different societies (5). Its occurrence reflects the level of maternity care in a community and most are a consequence of mismanaged labour, a sequelae to obstructed labour. The anterior vaginal wall and underlying bladder neck are devitalized by ischaemia. The result of this is sloughing out of devitalized tissue usually between third and tenth day of puerperium resulting in fistula formation and incontinence.

Occasionally the area of necrosis in higher involving anterior lip of cervix and triagone. Other less common obstetric causes include bladder injury at caesarean section, forceps, craniotomy, symphiotomy or a complication of criminal abortion. Our series of genitourinary fistula were mainly obstetric in etiology, as a sequelae to mismanagement of labour and delay in referral to hospital, at the hands of untrained birth attendants. The diagnosis of fistula is straight forward, yet a preoperative evaluation must include intravenous urography and cystourethroscopy, as was done in all our cases. Although intravenous urography is particularly insensitive investigation for VVF, it assesses upper urinary tract status influencing treatment and rules out associated uretric fistula. Cystoscopy confirms site, size, number, proximity to uretric orifice and associated bladder calculi. Cystoscopy identified stones in 2 cases and proximity to uretric orifices in 3 transvaginal repairs. This mandated uretric catheterization at the time of surgery in these fistula repairs.

Many difference in opinion exist as regards timing, route and technique of repair of genitourinary fistula. All obstetric fistula were repaired atleast 3 months after delivery to allow edema and inflammation to subside in our series. While excellent results have been reported by early repair by some surgeon (6-8), it may not be appropriate in all cases. In our society many such women are neglected and malnourished, suffering from untreated urinary infections and anaemia. Deferring surgery in such women allows tissue to recover and treat infection (9). As for the route of repair, vaginal was preferred by us as in other series, for benefits of low complication, minimum blood loss, rapid post operative recovery, shorter hospital stay (10-12). Abdominal repair was reserved for fistula high up on bladder wall, supratriagonal (post hysterectomy or post abortal) fistula and uretrevaginal fistulas.

Prophylactic antibiotics were administered routinely in all repairs even through a recent randomized controlled trial suggests that they do not improve the outcome of repair (13). Perhaps a larger series with randomized trails are needed before a change in practice is recommended.

Difference in opinion exists as regards intervention of various grafts and flaps between bladder and vagina. They promote healing and decrease chance of fistula



recurrence as suggested in studies of trans-abdominal repair (14). We used mental graft in all 3 women with trans-abdominal repair and Maritus graft in one vaginal approach, which were successful. These were complicated fistula, large in size, had excessive scarring from previous failed repair. The interposed tissue served to fill the dead space, added bulk to repair and improved blood supply at fistula site. Post fistula urodynamic incontinence is reported variably in 8-33% of patients (15), particularly those involving urethra and or sphincter. We do not know the exact incidence in our series, as routine urodynamic studies were not possible on follow-up in our set up. Various surgical techniques for managing urinary incontinence after obstetric fistula have been described (16,17). We attempted dynamic external oblique aponeurosis sling at transvaginal repair in one juxta urethral fistula to reduce the chance of stress incontinence, which was successful.

Success rate reported in literature are variable (2,18,19) depending on type of fistula, technique, and above all surgical skills. In our series an overall success of 86.9% and 100% for primary repair was in keeping with other series. Higher failure rates are recognized when there was excessive scarring of fistula margin after previous failed attempts or long-standing fistula. As in many forms of surgery a law of diminishing returns is evident in fistula repair. Although repeat operations are justified, the success rate decreases progressively with increasing number of previous unsuccessful procedures. Thus the primary repair should be well planned to offer the woman the best chance of continence.

Conclusion

Genitourinary fistulas are not life threatening but are socially debilitating condition. A substantial number is reported in the present study. Surgical repair is the definitive cure. The best chance of successful repair is at the first attempt. A surgeon with adequate training and experience can optimize outcome of surgery by modifying techniques according to the site, size and complexity of fistula.

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