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RESEARCH ARTICLE

OUTCOME OF UROGENITAL TRACT FISTULA AT JINNAH POST GRADUATE MEDICAL CENTRE (JPMC) KARACHI PAKISTAN

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ABSTRACT

Objective: Find out the outcome of surgical management of Urogenital Tract Fistulas in term of recurrence rate, complications and to understand the magnitude of this problem with its etiology**.**
Methods: This was a retrospective study conducted in Department of Urology at Jinnah Postgraduate Medical Centre, Karachi from January 2004 to July 2012. All patients presented during study period with Urogenital Tract Fistulas secondary to obstetrics and surgical complications were included in this study. The patients with fistula secondary to malignancy and radiation therapy were excluded.
Results: Forty-two (42) fistulas were repaired, among them 34 women had vesico-vaginal fistula (VVF), uretero-vaginal fistula (UVF) were found in 6 patients, while combined uretero and vesico-vaginal fistulas in 2 patients. In our study the mean age is 32.4 year + 3.7 (range 23-45 years). 85.7% (n=36) of patients belonged to rural areas of country and 14.28% (n=6) were urban in origin. Only 16.7% (n=7) were primigravida. Repair was successful in 97.62% (n=41) patients. Except 2.38% (n=1) had recurrence at 3 months follow up.
Conclusion: The most common etiology was prolonged obstructed labor. Only one recurrence was noted in this series. The reason being the correct timing of surgery (3-4 months)following initial accident, meticulous tissue handling, control of infection and adequate nutritional support pre-operatively.

INTRODUCTION

The urogenital tract fistulas occur due to abnormal communication between the female genital tract and urinary tract, resulting in the continuous leakage of urine through the vault of vaginal. Usually it occurs between the urinary bladder and vagina and it is called as Vesico-Vaginal fistula (VVF). But it may occur between ureter and vagina called Uretero-Vaginal fistula or between urethra and vagina hence called Urethro-Vaginal fistula. Cervix, uterus and fallopian tubes are rarely involved. The urogenital tract fistula is a devastating condition causing physical and psychological trauma to patients. The national incidence of vesico-vaginal and urethro-vaginal fistulas is approximately 152 per year in the In England and Wales (**Hilton, 1997**). An incidence of 1-2 per 1000 deliveries has been estimated worldwide, with an annual incidence of up to 50,000 to 100,000 (**Walldijik, 1994**). In developing countries, including India, where health services are not up to the mark resulting in poor obstetric care, majority of these fistulas are a consequence of neglected and obstructed child birth (**Hilton, 1996, Rathi, 1995**), as opposed to developed countries, where they are a mainly iatrogenic (**Moir, 1973**). Management of urogenital tract fistula continues to be a challenging task, testing the expertise and dignity of the operating surgeon. Despite the best efforts of the surgeon, injuries to the urinary tract may still occur as part of the healing process in pelvic surgery (**Kallol *et al.*, 2006**). According to the report of World Health Organization, in the developing countries, 5-million women each year suffer from severe maternal morbidity, obstetrics fistulas being on the top of the list (**Khan *et al.*, 2009**). The urogenital tract fistula, commonly caused by prolonged obstructed labor, is one of the worst complications of childbirth and reflects poor obstetric care in the developing world. Due to this unpleasant consequence, affected patients have continuous urinary leakage, excoriation of vulvas and vaginas, often rendering them socially unfitand having feeling of isolation and depressive life. Obstructed labour results in the compression by head of the foetus on the trig one or bladder neck or proximal urethra against the anterior arch of the pubic

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symphysis. This compression ultimately causes ischemia, necrosis followed by fistula formation and mostly causes infratrigonal vesical or urethral fistula (**Perveen F 1988, Barnick CGW 1991**). while some time during resuscitation for intraoperative bleeding in ruptured uterus, myomectomy, hysterectomy and emergency caesarean sections, the risk of ureteral injuries is high and may lead to fistula formation (**Arrow Smith *et al*., 1996**). The urogenital tract fistula definitely is curabledisease; the key to successful repair of these fistulae lies in the classic principles defined by Couvelaire in 1953, "Good visualization, Good dissection, good approximation of the margins and good urine drainage." These principles can be achieved both through vaginal and abdominal approaches (**Rakesh Kapoor *et al*., 2007**).

MATERIALS AND METHODS

This descriptive study was conducted in the Department of Urology at Jinnah Post- Graduate Medical Centre (JPMC), Karachi Pakistan from January 2004 to July 2012. The case records of all patients admitted and managed during study period were reviewed. The information regarding characteristics, risk factors and surgical management was collected. The data was analyzed by SPSS Ver. 16 and mean, range, standard deviation and percentage were calculated. In obstetric fistula duration of obstetric labor, place of delivery and ultimate fate of delivery including Lower segment cesarian section (LSCS) was noted. In gynecological fistula, type of operative procedure, biopsy report, post-operative course and date of onset of incontinence was recorded. All patients underwent evaluation under general anesthesia, which included detailed urethra-cystoscopy and simultaneous vaginal examination. Its purpose was to note the site, size and number of fistula, tissue mobility, degree of inflammation and relation to other structures or pathologies.

Bilateral retrograde pyelography (RPG) in and optional ureteroscopy (URS) was also performed selectively whenever needed. In difficult cases, methylene blue was injected in bladder and location of fistula was confirmed by staining of vagina. Each patient had baseline investigations, renal function profile, urine culture and intravenous pyelogram (IVP). CT-abdomen was performed in complicated cases of uretero-vaginal fistula. Average time between the obstetric trauma and surgical intervention was 3 – 4 months. Abdominal route was chosen for supra-trigonal vesico vaginal fistula and all ureteric reimplantation (uretero–vaginal fistulas). The vaginal route was selected for infra-trigonal vesico-vaginal fistula and urethro-vaginal fistula. Bilateral ureteric catheterization was done especially when fistula is near the ureteric orifice. Classical O'Conor repair was performed for supratrigonal vesico-vaginal fistula (VVF). Infratrigonal fistulas were repaired trans-vaginally. Ureteric reimplantation was done by Lead Better Politano technique (intra vesical). In one patient where the fistula involves the neck and almost whole urethra, Tenago Procedure was performed.

RESULTS

Forty-two patients with urogenital tract fistulas were included in the study. All patients under went operative procedures. The mean age is 32.4 year + 3.7(range 23-45 years). Majority of patients 85.7% (n=36) belonged to rural areas of country especially provinces Sindh, Balochistan and Khyber Pakhtunkhwa, and 14.28% (n=6) were urban in origin. Regarding parity only 16.7% (n=7) patients were primigravida and 83.33% (n=35) were multiparous women. The time since fistula varied from less than 1 year to more than 10 years. Majority of our patients 76.19% (n=32) presented with fistula duration less than 01 year, 9.52% (n=4) patients had it between 01 to 05 years, while 4.76% (n=2) patients came with more than 10 years duration, while 9.52% (n=4) patients had history of failed fistula repair at some other hospitals. Clinically, 85.7% (n=36) women were presented with vaginal urinary incontinence. In uretero-vaginal fistula patients 14.28% (n=6) were able to micturate normally. Associated morbidity in the form of bladder calculi in 4.76% (n=2) patients and foot-drop in 2.38% (n=1).

Etiologically, 90.47% (n=38) patients had obstetric causes of urogenital tract fistulas; obstructed labour with vaginal delivery in n=10, obstetric hysterectomy in n=6, obstructed labour with rupture uterus in n=10 patients, n=12 patients had lower segment cesarean section (LSCS), indication of that was not clear ,as they were referred from different hospitals without proper documentation. 9.52% (n=4) patients had gynecological origin, developed during total abdominal hysterectomy for fibroid uterus. On cystoscopy, patients suffering from vesico-vaginal fistula (VVF) 80.95% (n=34), n=28 fistulas were supra trigonal, involving lateral wall and dome of bladder, while n=6 were infra trigonal, involving mostly trigonal area and bladder neck. Size of fistula was < 1cm in n=8 patients, 1-3cms in n=20 patients and 3-5cms in n=6 patients.

Uretero-vaginal fistula (UVF) was found in 14.28% (n=6) patients, while combined uretero and vesico-vaginal fistulae were found in 4.76% (n=2) patient (Table 1). Regarding level of injury, in n=8 patients had injury within 4-5cms from ureteric orifice (Table 2). Classical O'Conor's repair was performed for supra trigonal vesico-vaginal fistulas (VVF) in n=26 patients while infra-trigonal fistulas were repaired trans-vaginally in n=6 patients. Ureteric reimplantation was performed in n=8 patients including n=2 patients who needed vesico-vaginal fistulas (VVF) repairsimultaneously. Bladder stones in both patients (n=2) were removed while trans-abdominal repair.

In n=2 patient infra-triagonal vesico-vaginal fistula (VVF) involved bladder neck and urethra was repaired by Tenago Procedure (Table 3). The mean operating time was 126 ± 61.4 min. (range 40-300 min.). Mean hospital stay was 15 days ± 4.1 days (Range 10-27 days). Recovery was un-eventful in all cases. All patients were kept catheterized for three weeks, catheter removed on 21st day. On follow up success rate for primary repairs of vesico-vaginal fistula (VVF) was 92.31% (24/26). The success rate for trans vaginal repair was 83.33% (5/6) and 100% for trans abdominal in our series. One patient had recurrent vesico-vaginal fistula (VVF) in 03 months after trans-vaginal repair, which was repaired 3 months later. All the utero-vaginal fistulas and combined uretero and vesico-vaginal fistulas were successful at the first attempt.

DISCUSSION

Genitourinary tract fistulas are among the most worst complications of obstetric and gynecologic procedures. The condition is a socially enervating problem with important medico legal implications. Obstetric vesico-vaginal fistulas (VVFs) remain a major medical problem in many underdeveloped countries with a low standard of antenatal and obstetric care.[12] The obstetric fistula is the result of a "field injury" to a broad area of damage; that leads a larger size of fistula. In contrast, the postsurgical fistula, Which is usually the result of more direct and localized trauma to otherwise healthy tissues. In our study the mean age is 32.4 year + 3.7 (range 23-45 years) which is similar to most of others studies. Most of our patients 83.33% were having more than two children (multigravida), only 16.7% were primigravida. This fact is similar to another study conducted by (**Ahmed *et al*., 2005**) from Pakistan. 85.7% our study population belonged to remote areas of Sind, Baluchistan, and Khyber Pakhtunkhwa, while only 14.28% from urban areas. This reflect the poor availability of health care services in rural areas, where standard antenatal care was available to only 10% of pregnancies13 while more than 80% of deliveries are performed by traditional birth attendant (Dais, many of whom are untrained). Another local study showed that 52% women had fistula at the very first time of delivery (**Tahzeb, 1983**).

Delayed presentation between 1-5 years was observed in 4 patients (9.52%) while 2 patients (4.76%) after 10 years. Among these, 1 patient developed the fistula within 18 months and another 1 patient in 12 months. This showed the ignorance, traditional restrictions on women, cultural taboos, and lack of education and availability of few health care centers with competent staffing in the country. The frequency of uretero-vaginal fistula in present study is 19.05% (8 patients), including 2 patient combined with vesico-vaginal fistula, which is much higher than many western studies (which is less than 10%) (**Wary, 1990**). Regarding etiology of fistula, 90.47% of our patients were obstetric in origin, prolong labour with home deliveries; lower segment cesarean section (LSCS), ruptured uterus and obstetric hysterectomy are main contributors. Only 9.52% patients suffered due to gynecological operations, similar to other studies from developing countries. This is exactly opposite to western studies.

Lee in a series of 35,000 hysterectomies; more than 80% of genitourinary fistulas occurred because of gynecology surgery and only 10 % are due to obstetric trauma (**Lee Ra 1988**). About site of fistula, 80.95% of vesico-vaginal fistulas (VVF); 76.47% (n=26) supra trigonal fistulas, involving lateral wall and dome of bladder, and 23.53% (n=8) infra trigonal, involving mostly trigonal area, bladder neck and urethro. This is similar to most of African studies. Nafiou showed 81% incidence around trigonal and urethral region (**Nafiu *et al*., 2007**). Average time of repair after fistula formation was 3 to 4 months in our series in order to allow edema and inflammation to be subsided. While excellent results have been reported by some surgeons with early repair. Fistula should be repaired either within two weeks of their development or after a three month period. Operating in the intervening period increases the complexity of the surgery and lessens the likelihood of success as tissues that are present are rather friable and adequate surgical closure is extremely difficult (**Murrey *et al*., 2002**). Though advances have been made in the understanding of etiology, diagnostic procedures and management of these fistulae controversies still exist for the ideal approach and time of repair (**Goh, 2005**). The selected route of repair of vesico-vaginal fistula (VVF) depends on the training and experience of the surgeons. Most fistulae experts are of the opinion that almost all vesico-vaginal fistulae can be repaired by vaginal route. Vaginal route should be preferred because it avoids laparotomy, splitting of bladder and recovery time is shorter with less morbidity, blood loss, post operative bladder irritability and post surgical pain. Our practice is to approach through supratrigonal fistula by trans abdominal (O'Conor's repair) and infratriagonal fistulas transvaginally. In the majority of vesico-vaginal fistula (VVF); simple fistulae, can be closed by an appropriate surgical repair. Complex fistulae are associated with greater local tissue destruction either due to infection, irradiation, extensive trauma or failure of previous surgery. In our study, two patients had failed fistula surgery at some other hospitals, in remaining patients it was first operation. In capable hands, the best chance of successful closure is with the first operation.

Ingleman-Sundberg commented that the person ‘who operates first has a great responsibility, as every future operation will be more difficult (**Ayhan *et al*., 1995**). Success rate in our study; that is defined as ‘elimination of incontinence without major complication’ primarily is 97.62%, one patient has failure in three months, which was corrected with repeated surgery. So, overall success rate was 100% which is comparable to many other studies (**Tomlinson *et al*., 1998**). Nutritional support is mandatory before fistula surgery for effective healing of wound site; an extra precaution to be taken especially in third world countries. Prophylactic antibiotics were administered in all patients included in our study. This is contrary to recent evidence that they do not improve the outcome of repair (**Hilton 1998**). Post fistula ‘urodynamic incontinence’ is reported variably in 8-33% of patients in the literature. Urethral incompetence and a fixed bladder neck are commonly present in women with obstetric fistula. Common causes for persistent urinary incontinence following successful anatomical closure of a vesico-vaginal fistula include urodynamic stress incontinence, detrusor over activity, mixed incontinence, overflow incontinence and ureteric fistula.

Conclusion

Obstetric fistulas are a public health problem in our country especially vesico-vaginal fistula (VVF) is a human rights issue in the sense that proper provision of Gynecology and Obstetrics facilities to every woman is her right and obligation of the state. Improvising the programs for establishing the proper obstetric care centers, provision of trained staff, insuring the timely access of pregnant women, increased literacy and awareness in society will definitely decrease the incidents of obstetric fistula in the developing countries. 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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