The Professional Medical Journal
www.theprofesional.com

ORIGINAL PROF-2525

VESICO-VAGINAL FISTULAE;
REVIEW OF THE CAUSES, DIAGNOSIS AND TREATMENT

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ABSTRACT… Objectives: To review the causes, diagnosis and treatment of vesico-vaginal fistulae in the department of Gynaecology& Obstetrics, and Urology Department Civil Hospital Quetta. Background: Vesico-vaginal fistula is not life threatening medical disease, but the woman face problems like demoralization, isolation, social boycott and even divorce. The etiology of the condition has been changed over the years and in developed countries obstetrical fistula are rare and they are usually result of gynecological surgeries or radiotherapy. In countries like Pakistan the situation is different, here literacy rate is low, parity rate is high and medical facilities are deficient. People manage delivery at home and usually multi parity. Urogenital fistula surgery doesn't require special or advance technology but needs experienced urogynecologist with trained team and post operative care which can restore health, hope and sense of dignity to women. **Methods:** A retrospective study of 60 patients with different types of vesico-vaginal fistula werereviewed between January 2005 to December 2008. Patients were analyzed with regard to age, parity, cause, diagnosis, mode of treatment and outcome. Patients were also evaluated initially according to prognosis. **Results:** During the study of four year period 60 patients of vesico-vaginal fistulae were reviewed. Majority of the patients were belonging to middle age group. In 48 patients repair was done through transvaginal route and 12 were operated through transabdominal route. One Ca patient expired and in 4 patients recurrence occurred. **Conclusions:** Iatrogenic vesico-vaginal fistulae are more common. Difficult and complicated fistulae need experienced surgeon. Establishment of separate fistula surgery unit is suggested to get desired results.

Article received on:
19/05/2014
Accepted for publication:
25/07/2014
Received after proof reading:
16/10/2014

Keywords: Vesico-Vaginal Fistula (VVF), Iatrogenic, Obstructed labour, Hysterectomy.

Article Citation: Baloch BA, Salam A, ZaibUnnisa, Nawaz H. Vesico-vaginal fistulae; review of the causes, diagnosis and treatment. Professional Med J 2014;21(5):851-855.

INTRODUCTION

Vesico-vaginal fistula is a very serious and disabling injury among women. Patients with this type of fistula remain all the time with dribbling of urine through abnormal communication between the urinary bladder and vagina[1]. This type of complication has been recognized since ancient times. In 1923 Derry discovered a large vesico-vaginal fistula in a mummy of Queen Henhenit belonging to the 11th dynasty about 2500BC[2]. Although it is not a life threatening medical problem but the women in a society like ours face problems of demoralization, social boycott and even divorce. They are rather excluded from all religious and family activities. The fistula may be vesico-vaginal, recto-vaginal or combine[3]. The incidence of fistulae varies in the world as do the causes and factors. WHO estimates that in developing countries each year five million women suffer severe maternal morbidity, obstetrical fistula being on the top of list. It is also estimated that currently more than 2 million women are waiting for surgery worldwide and about 50Million new cases are added each year mostly in Africa and Asia. Vesico-vaginal fistula is still a common problem in the developing world, as 84-97% of cases occur in these countries[4]. In developing countries the major cause of vesico-vaginal fistula is obstructed labour[5], while in developed countries, 90% vesico-vaginal fistulae are caused by gynaecological procedures[6,7]. The iatrogenic fistulae caused by surgeries are seen most commonly in transabdominal and transvaginal hysterectomies make 75% of fistulae [8]. Fistulae can also occur due to urological and gastrointestinal surgeries, LSCS and illegal abortion[9]. An overall incidence of 0.33% urinary tract injury has been reported in all pelvic

surgeries[10]. The constant dribbling of urine has a profound effect not only on the physical health of the patient,it also causes immense psychological problems in patient life[11]. In Pakistan obstructed labour is still the major cause of vesico-vaginal fistula as 80-90% of the cases reported occur due to obstetric complications[12].

James MarrisonSim known as being father of Gynecology in USA is widely recognized as being the pioneer of modern fistulae repair. He founded the first fistula repair hospital in Newyark and published the basic principles of fistula repair in 1852. These principles are still followed today, which are adequate exposure, tension free approximation of wound edges, use of non reactive fine sutures and continuous bladder drainage following closure of fistula[13].

PATIENTS AND METHODS

This prospective study was completed in a period of four years. 60 women with confirmed vesico-vaginal fistulae and irrespective of age were included in this study. Patients with urinary incontinence due to other causes were excluded. The study was conducted at the department of Gynecology & Obstetrics and Urology department of Bolan Medical College and Civil Hospital Quetta. A detailed history was taken to record demographic variables like age, parity, causes and time interval of appearance of fistula after surgery or delivery and previous attempts of repair. The selected patients were thoroughly examined physically and admitted for operative repair. Along with the routine investigations, an IVU was done and an examination under anesthesia was performed to assess the number, site and size of fistula. In some patients requiring confirmation cystoscopy was done. The procedure (transvaginal/transabdominal) was planned after examination under anesthesia. The cases were then operated upon by gynecologists and urologists, and where necessary both worked as a single team. 39 cases were operated by gynecologists and 21 by urologists. Transvaginal route was used for 52 patients and 8 cases were repaired through transabdominal route. In 4 patients omental pedicle grafts were applied. 6 patients were re-operated due to the failure of previous procedures. Postoperative cases were nursed in the intensive care unit. Antibiotic cower was given for 7-10 days postoperatively. Adequate hydration was maintained with fluids and special care was taken for continuous drainage of urine for 3 weeks. Routine urine examination was done to exclude any infection. In case of any infection, culture sensitivity of urine was done and specific antibiotics were given. One and half month follow up advised and patients were evaluated and symptom free case was assessed after each visit. Simple descriptive statistics were calculated, age, causes of vvf, success rate of procedures, failure rate and percentage obtained were shown in the tables.

RESULTS

In this 4 year study period 60 patients were referred to Civil Hospital Quetta for management. Age range was between 16-64years, mean age was 33.5years. Majority of the cases were belonging to middle age group Table-I.

Age	No. of Patients	%
Below 20 yrs	02	3.33
20-40 years	41	68.33
40-60 years	16	26.66
Above 60 years	01	1.66
Total	60	100

Table-I. Age wise distribution of VVF patients & percentage

All patients came with the history of dribbling of urine. The causes of vvf in 38 patients were iatrogenic. That included 29 cases after hysterectomy for gynecological indications, 3 after caesarean hysterectomies and five after LSCS for indications other than obstructed labour and one was due to instrumental delivery which was not for an obstructed labour. The vvf caused by obstructed labour was noted in 21 cases which included 13 who developed vvf after delivery and 7 after LSCS. In one patient the cause was hysterectomy due to Ca cervix to which radiation was given. One patient in this study was having congenital vvf and one was having vesical calculus along with vvf. Another

one was having rectovaginal fistula with vvf. Out of total 60 cases fistulae repair was done for 21 cases in urology department and 39 were repaired in gynecology department. In 48 patients repair was done through transvaginal approach and 12 vvf were repaired through abdominal route. In 4 patients omentalgrafts were applied with interposition. Vesical calculus was removed through fisrula orifice and rectovaginal fistula was repaired along with vvfrepaire. The fistulae in 14 patients followed the first delivery and in 16 patients it followed subsequent delivery. Parity in 56 patients ranged from 0-12. In this study 9 patients were re-operated due to the failure of 1st or more procedures (Table-II).

No. of previous attempts	No. of Patients
No. previous attempts	34
1-2 attempts	11
3-4 attempts	03
>4 attempts	01
Total	49

Table-II. Number of previous repair attempts

The duration of the fistulae varied from 7 months to 24 years and diameter of fistulae ranged from 1-3 cm. Out of 60 patients, 55 patients had an immediate successful result (Table-IV). Patient with Ca cervix expired and in 4 patients recurrence occurred. In majority of the patients Foley's catheter was removed after two weeks except in 2 patients it was kept for 3 weeks. In these two patients one was having large fistula while other with Ca was complicated and expired.

Obstetrical causes	No. of patients	%age
Normal vaginal delivery	14	23.33
Forceps delivery	04	06.66
Cesarean Section	26	43.33
Cesarean Hyterectomy	06	10
Gynecological /Urological	**Causes**	
D&C	01	1.66
Abdominal Hyterectomy	06	10
Vaginoplasty	01	1.66
R.T for Ca Cervix	01	1.66
Cystolithotomy	01	1.66
Total	60	100

Table-III. Causes of vesico-vaginal fistulae with percentage

Results	No. of patients	%age
Successful	55	91.66
Unsuccessful	04	6.66
Expired	01	1.66
Total	60	100

Table-IV. Results of vesico-vaginal repair

DISCUSSION

This prospective stuy was carried out to find the outcome of surgical procedure in urogenital tract fistula. Female genito urinary fistulae represent unpleasant health, demoralization, excluded from all religious and family activities. Vesico-vaginal fistula causes disabling child birth and urogenital injuries resulting in incontinence. These patients suffer physically, emotionally and also represent big social problems[14].

Pakistan is the seventh most populous country in the world(>156 million people and women in reproductive age up to 34 million). Balochistanis the largest province, has wide spread population in remote rural area. This province is deficient in education and awareness of diseases. It is the most suitable area for fistulae occurrence. In this province more than 90% deliveries are conducted by traditional birth attendants at home. This exposes women to a high risk for obstetric fistulae. Data on obstetric fistula is lacking in Pakistan, but it is estimated that approximately 5000- 8000 new cases occur each year[15-17].

Majority of our patients were young and in child bearing age, with 50% being below 30 year of age. This shows the trend of early age marriage in our society. Genito-urinary fistula is the main problem among women of child bearing age in developing countries[18]. The etiology has changed over years, with a wide difference between the developed and developing countries. In the industrialized world 70% of fistulae occur during Gynecological surgery while in developing countries it is mostly obstetrical fistulae[19].

Basic principal of fistula repair applied were as those of other authors[20,21]. These include, adequate preoperative nutritional repletion, good

haemostasis, adequate exposure of the fistula tract, water tight closure of each layer, excision of fibrous tissue from the edges of the fistula, multiple layer closure, tension free non over lapping suture lines, adequate urinary drainage after repair and prevention of infection.

The vvf were classified into 3 groups. 1st was obstetric group, were due to pressure necrosis of obstructed labour, Forceps deliveries and caesarean hysterectomy. 2nd group due to hysterectomy, 3rd group was miscellaneous e.g congenital and due to radiation. 44 (73.33%) cases of our study were due to obstetrical/child birth cases, which is similar to other studies[22].

Most fistulae experts are of the opinion that almost all the vvf can be repaired by vaginal route[22]. In present study the same rule was adapted, 48 (80%) patients out of 60 were repaired through transvaginal approach and 12 (20%) through transabdominal approach.

We used omentum flaps in 4 patients as was used by Nasreen in the same ratio[23]. Finally repair success rate in this study was 90% which is comparable with the results of Yasin[24].

CONCLUSIONS

This study shows that majority of our patients were young and in child bearing age, with 50% being below 30 year of age. This could be the trend of early age marriage in our society. Secondly majority of the patients came from periphery,which shows that another cause of VVF could be gynaecological surgery that is being performed by untrained persons in periphery.

REFERENCES

1. Saba S, Kausar JS, **Trans-vaginal sonographic evaluation of vesicovaginal fistula.** J Pak Med Assoc 2005; 55:292-94.
2. Derry DE, **Note on five pelvis of women in the Eleventh Dynasty in Egypt.** J ObstetGynaecol Br Emp 1935; 42: 490.
3. Kelly J. **Repair of obstetrical fistula; a review from an overseas perspective Obstetrician Gynaecologist** 2002;4:205-11.
4. Raut V, Bhattacharya M. **Vesical fistulae; an experience from a developing country.** J Postgrad Med 1993; 39:20-1.
5. Malik HussainJalbani, Rajib Ali Deenari, Jan Muhammad Shikh. **Vesico-Vaginal Fistula- Experience of Surgical Repair at Larkana;** Pak J Med Res;Vol 45,3 2006; 1-3.
6. Smith GL, Williams G. **Vesicovaginal fistulae.** BJUint 1999;83:564-70.
7. Tancer ML, **Observations on prevention and management of vesicovaginal fistula after total hysterectomy,** SurgGynaecolObstet 1992; 175:501-6.
8. Goodwin WE, Soordino PT. **Vesicovaginal and uterovaginal fistulae; a summary of 25 years experience,** J Urol 1980;123-367.
9. Puri M, Goyal U, Jain S, Pasrija S. **A rare case of vesico-vaginal fistula following illegal abortion,** Indian J Med Sci 2005; 59: 30-1.
10. Bai SW, Huh EH, Jung da J, Park JH et al. **Urinary tract injuries during pelvic surgery; incidence rate and predisposing factors,** IntUrogynaecol J pelvic floor Dysfunct 2006; 17:360-4, Epub 2005 sep 30.
11. Cook RJ, Dickens BM. Syed S, **Obstetric fistula; the challenge to human rights.** Int J GynaecolObstet 2004;87;72-7.
12. Khan RM, Raza N, JahanzaibN,Sultana R. **Vesico-vaginal fistula; an experience of 30 cases at Ayub Teaching Hospital Abbotabad.** J Ayub Med CollAbbotabad 2005;17:48-50.
13. Zacharin RF. **A history of obstetric Vesico-vaginal fistula.** Aust NZ J Surg 2000; 70:851-4.
14. Dolly C, Sebanti G, Sudhir A, Mumtaz S. **Analysis of vesico-vaginal fistulae in Eden hospital- A 10 year study.** J ObstetGynecol India 2007;57: 139-41.
15. Hafeez M, Asif S, Hanif H, **Profile and repair success of Vesico-vaginal fistulae in Lahore.** J CollPhy&Surg Pak 2005: 15;142-4.
16. Nawaz H, Khan S, Khan M, Ahmed S, Pervaiz A, Din S, Muhammad S. **Surgical repair of Vesico-vaginal fistula.** J Surg Pak 2001; 68-70.
17. Parveen F, Shah Q, **Vesico-vaginal fistula a challenge for women in developing country.** J CollPhy&Surg Pak 1988; 8:230-2.
18. Hilton P, **Vesico-vaginal fistula; New perspective,**

CurrOpinObstetGynecol 2001;13:513-20.

19. Roy KK, Malhotra N, Kumar S, Seth A, Nayar B, **Gen to urinary fistula: an experience from a tertiary care hospital,** J K Science 2006; 8: 144-8.

20. Cohen BL, Gousse AE, **Current techniques for Vesico-vaginal fistula repair: Surgical Pearls to optimize cure rate.** CurrUrol Rep 2007; 5:413-8.

21. Pathraon S, **Lower Genito Urinary fistulae.** Saudi J Kidney Dis Transplant 2007;18:643-7.

22. Nasreen J, Nek M, Fouzia S, Pushpa S, **Key to successful vesico-vaginal fistula repair- An experience of urogenital fistula surgeries and outcome at gynecological Surgical camp-2005;** J Ayub Med CollAbbotabad 2008; 20(2) 125-27.

23. Armenakas NA, **Current methods of diagnosis and management of uretral injuries;** World J Urol 1999;17:78-83.

24. Yasin Rashid, TayyabaMajeed, NaseemMajeed et al, **Iatrogenic vesicovaginal Fistula,** J CollPhy&Surg Pak;2010: 20(7):436-8.