

# Preliminary Outcome Of The Management Of Vesicovaginal Fistulae At A Teaching Hospital In Southeastern Nigeria.

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## Abstract

Background: Vesicovaginal fistula (VVF) is one of the most dehumanizing complications that can result from labour or urogenital surgeries. It is still very common in developing countries. It can lead to serious physiological, social and psychological problems with major impact on the life of the sufferers. Aim: To evaluate the causes and management outcome of VVF at the Imo State University Teaching Hospital, Orlu in Southeastern Nigeria. Patients and Methods: All Patients managed for VVF except due to malignancy and radiation between June 2004 and June 2007 were included in the study. History of socio-demographic features, cause of fistula and previous attempts at repair were taken. Investigations included urine culture, intravenous urogram and examination under anaesthesia. The method of treatment and outcome were noted. Results: Fifty six patients were included in the result. Women of child bearing age constituted the majority of the patients (94.9%). The patients were mostly primipara (75%), lived in the rural areas (89.3%) and came from the low socio-economic strata of the society (92.9%). Juxtacervical fistula (66.1%) was the most common type of fistula encountered. Prolonged obstructed labour (55.4%) was the commonest cause of fistula on the series. The vaginal route (71.7%) was the commonest route employed in the repair. Surgical repair was performed in 53 patients. Overall success rate of the procedure was 73.2% at the primary repair. Conservative management was successful in 60% of the cases. Vaginal repair was performed with 84.2% success rate. Conclusion: The transvaginal route was the most successful route for VVF repair. The commonest cause was obstetric trauma which is preventable by health education and improvement in maternity care delivery in rural areas.

## INTRODUCTION

A vesico- vaginal fistula (VVF) is an abnormal communication extending between the urinary bladder and the vagina that allows an uncontrollable, involuntary leakage of urine per vaginum<sup>1</sup>. Vesico-vaginal fistula imposes a great deal of physical, social and physiological handicap on the sufferer and is regarded as one of the most dehumanizing conditions that afflict women. It is a multidimensional morbidity that not only leads to complications such as local infections, vesical calculiformations, recurrent urinary tract infections, infertility, and gynestresia which makes sexual activity impossible, but also the continuous leakage of urine and faeces with their associated offensive odour renders the patient social outcast<sup>1</sup>. It typically affects young g primiparous women, married at an average age of 15.5 years being uneducated and poor<sup>2</sup>. Around the globe, the developing countries have an incidence of 1-2 VVF/ 1000

deliveries with 100,000 to 500,000 cases occurring annually<sup>3</sup>.

In India and Pakistan, some 70% to 90% of women with VVF are either abandoned or divorced<sup>4</sup>.

In developing countries with a low standard of obstetric care, prolonged obstructed labour remains the most common cause of VVF<sup>5</sup>. In developed countries with better obstetric facilities, gynaecologic and pelvic surgery, especially hysterectomy, are the leading causes of VVF<sup>4,6</sup>. Other rare causes of VVF are Caesarean section, urological and gastrointestinal surgery, criminal abortion, female genital mutilation (FGM), vulvo-vaginal trauma (like falling astride, bicycle spoke injuries etc.)<sup>7</sup>.

An accurate evaluation for number, size and location of the fistula is important before embarking on repair. The diagnostic armory include the dye test, examination under

anaesthesia, intravenous urography, cystography, hystero-graphy, colposcopy, subtraction MR fistulography, endocavitary ultrasound through trans-rectal or trans-vaginal route with or without Doppler or contrast agents<sup>8</sup>.

The management of VVF involves a multi-modal technique. It could involve immediate or a delayed repair. Immediate repair is carried out on those patients presenting within 24 hours of the injury and without evidence of infection or when the injury is detected at the time of injury ids detected at the time of Caesarean section for those VVF that are caused by surgical trauma at the time of performing a lower segment Caesarean section. The repair is carried out after 3months for those presenting after 24hours of the injury with evidence of inflammation or tissue oedema. During the waiting period, the patient is catheterized, put on broad spectrum antibiotic cover and nutritional support; the aim being to allow tissue reaction to subside before embarking on the repair.

The repair could be undertaken through the transabdominal or transvaginal route or a combined approach<sup>9,10</sup>. The location and size of the fistula usually determines the approach used<sup>7</sup>. The trans-abdominal approach is usually used in cases of large complex fistula, where the fistula is located high on the vaginal stump, close to the ureter, more than 2cm in size and in cases of previous failed repairs<sup>5,7</sup>. The vaginal route is preferable in cases of low fistulas that could easily be approached vaginally.

The techniques of repair also vary. The traditional technique employs the flap splitting technique, which involves dissecting off the bladder wall from the vaginal wall. This is followed by the repair of the bladder wall in two layers, picking up the underside of the vaginal wall with sutures of the second layer of the bladder wall repair. This is followed by complete repair of the vaginal wall defect. This is also known as the sliding repair technique<sup>11,12</sup>. Techniques involving the repair of only the bladder wall defect in two layers leaving the vaginal wall defects unrepaired has also been described<sup>13</sup>. Techniques involving saucerization and bulk closure of both the bladder and vaginal wall defects with or without fistula tract excision have also been described<sup>5</sup>. The particular method employed depends on the surgeon's preferences and the nature of the fistula. Successful repair of VVF, especially the giant and recurrent types, warrants the use of adjunctive measures<sup>14</sup>. These include the placement or interposition of some local tissue or graft between the two structures connected by the fistula.

Labial fat pad (Martius flap) interposition is popularly performed via transvaginal approach. The omentum, peritoneal flap, gracilis muscle, bladder wall flap, or appendix epiploica have all been interposed via the transabdominal and intraperitoneal approach in the repair of VVF<sup>15</sup>. The success rate has been associated with the aetiology of fistula, size of the fistula and the number of failed attempts at repair<sup>16</sup>.

The aim of this study is to review our experience in the management of vesicovaginal fistulas over a 7-years period (June 2004 to June 2011), with emphasis on causes, treatment modalities and outcomes.

## **MATERIALS AND METHODS**

The study was undertaken from June 2004 to June 2011 at the department of Obstetrics and Gynaecology, Imo State University Teaching Orlu, Southeastern Nigeria. Data was prospectively collected. Fifty six patients with vesicovaginal fistula resulting from causes other than radiations and malignancies were included in the study. A detailed history of the patients' ages, nature of injury, time interval of appearance of fistula and previous failed attempts at repair were taken. Examination under anaesthesia (EUA) and dye test was done to evaluate the site, size and number of the fistulae. The transvaginal, transabdominal and combined abdominovaginal approaches were all used in the repair. Postoperatively the patients were covered with Ceftriazone 1gm daily for 5days and continued with Co-trimoxazole tablet 960mg twice daily for as long as the Folley's catheter was in-situ. Continuous bladder drainage was ensured through Folley's catheter. A daily fluid intake of between 3-4 litres was ensured. Urine output was monitored to ensure they made more than 100mls of urine in 4 hours (25mls/hour). All the patients were kept catheterized for 14 days. Urine was sent for microscopy, culture and sensitivity at least two times a week and the antibiotics modified according to the result. Constipation was avoided by the use of intrarectal dulcolax, protein rich diet and multivitamins were prescribed. Bladder training was commenced on the 14<sup>th</sup> postoperative day after removal of the Folley's catheter and the patients were usually discharged home on the 21<sup>st</sup> postoperative day after achieving a satisfactory bladder training. Successful repair was taken as the absence of leakage of urine per vaginuum on follow up. The follow -up period ranged from 3 to 24 months after discharge from the hospital. The results obtained were analyzed using simple percentages.

## RESULTS

A total of 56 patients were included in the study over the 7-year period covered by the study.

Table 1 shows the age distribution of the patients. Majority of the patients (94.6%) were within the reproductive age group. Most of the fistulae occurred in women aged 20-29 years.

Table 2 depicts some selected socio-demographic characteristics of the patients. The patients were mostly primipara (75%), lived in the rural areas, came from the low socio-economic strata of the society (92.9%) and malnourished (73.2%). Juxtacervical fistula (66.1%) was the commonest form of fistula encountered (Table 3). Huge or giant fistulae accounted for only 3.6% of the cases.

As shown in table 4, prolonged obstructed labour (55.4%) was the commonest cause of fistula in this study. Rare causes of fistulae like Female Genital Mutilation, forceps delivery, trauma to the vagina resulting from falling astride, etc constituted only 7.1% of the cases.

The vaginal route (84.2%) was the commonest route employed in the repair of the fistulae as shown in table 5. Five patients with VVF less than 1cm in diameter who presented within 7 Days after obstructed labour were managed conservatively with catheterization. They were catheterized, placed on antibiotic cover according to urine culture result and multivitamins and high protein diet was advised. They were sent home and given a 6weeks appointment for check-up. Conservative management failed in two out of the five patients (40%) and the fistulae were repaired surgically after three months. Surgical repair was carried out in the remaining 53 patients through either the vaginal or abdominal route or a combination of both routes.

73.2% of the patients were cured at the primary repair while the rest had a recurrence. Recurrence occurred in those cases where the fistula was complex or large and in those with previous failed repairs.

The vaginal route 71.7% was the most commonly employed route of repair in this study and carried the highest success rate (84.2%).

A combined abdominovaginal approach was employed in the repair of 4 cases of Juxtaurethral VVF with a success rate of just 25% due to several repeated repairs.

A second repair was usually carried out after 3 months for cases of failed primary repair. The suture materials used were mainly chromic catgut number 2/0 in the continuous or interrupted stitches. The sizes of the fistulae ranged from 0.5cm to 6cm with a mean of 2.6cm. The mean duration of hospital stay was 17.5days with a range of 15-27 days.

**Figure 1**

Table 1. Age distribution of the patients N=56

Age(years)	No of Patients	% age
≤ 19	50	8.9
20-29	27	48.2
30-39	14	25.0
40-49	7	12.5
≥50	3	5.4
<b>Total</b>	<b>56</b>	<b>100.0</b>

**Figure 2**

Table 2: Some selected socio-demographic characteristics of the patients

Parameters	Types	Number	Percentage
Parity	Primipara	42	75.0
	Multipara	14	25.0
Socioeconomic class	Low	52	92.9
	High	4	7.1
Residence	Rural	50	89.3
	Urban	6	10.7
Nutritional status	Poor	41	73.2
	Good	15	26.8

**Figure 3**

Table 3: Position of the fistulae

Position	Number	Percentage
Juxtacervical	37	66.1
Juxtaurethral	10	17.9
Midvaginal	7	12.5
Giant(combinations of any of the above)	2	3.6
<b>Total</b>	<b>56</b>	<b>100</b>

**Figure 4**

Table 4: Aetiology of Fistulae

Cause	Number	Percentage
Prolonged Obstructed Labour	31	55.4
Caesarean delivery	9	16.1
Gynaecological operation [myomectomy, hysterectomy(abdominal and vaginal)]	8	14.3
Criminal abortion	4	7.1
Others(e.g. FGM, Striding falls e.t.c)	4	7.1
<b>Total</b>	<b>56</b>	<b>100</b>

**Figure 5**

Table 5: Route of Repair

Route	No	Cured	% Success rate
Conservative	5	3	60.0
Vaginal	38	32	84.2
Abdominal	9	5	55.5
Combined	4	1	25.0

## DISCUSSION

Prolonged obstructed labour was the commonest cause of VVF in this study. This is also the experience of other authors in the developing world<sup>7, 17, 18</sup>. Prolonged and difficult deliveries cause ischaemic necrosis of the vaginal vault and the posterior bladder wall causing them to slough off, resulting in the passage of urine through the vagina.

The VVF repair success rate in this study of 73.2% is

comparable to other national and international studies<sup>7, 13, 17</sup>.

The better success rate of the transvaginal route of repair when compared to the transabdominal route might be accounted for by the fact that it was patients with simple, small, low lying fistulae that were subjected to vaginal repair. This is also the experience of other authors<sup>7, 17</sup>.

According to the WHO 1991 Report on Obstetric Fistulae, VVF exclusively affects women from poor families and communities<sup>19</sup>. This is also the finding in this study.

The majority of women in this series were young primiparas. This is in agreement with the findings of Saba et al<sup>8</sup> but contrasts with that of Saaqib et al<sup>17</sup> where multiparas constituted the highest number of patients.

The majority of the births in this series were conducted by unskilled birth attendants otherwise known as TBAs (Traditional Birth Attendants). This might be due to poverty, illiteracy and to some degree ignorance. Enlightenment of the populace to utilize available maternity services will go a long way in reducing the incidence of Obstetric fistulae. Labour should be attended to by skilled and trained health personnel and difficult labour referred early to appropriate health care facilities.

Caesarean section and instrumental deliveries performed by medical officers in the rural areas also contributed to a smaller but significant number of cases. This underscores the need for doctors providing maternity services in these areas to attend refresher courses at regular intervals in specialist centres to acquire the best operative techniques and newly employed doctors should be properly trained on the act of Caesarean section and instrumental deliveries.

## CONCLUSION

Vesicovaginal fistula is chiefly caused by obstetric complications. Prolonged obstructed labour and complications of Caesarean section were the commonest causes of VVF in this series. The transvaginal route gave the highest success rate. Despite the impressive outcome of surgical repairs, emphasis should be shifted towards the prevention of this dehumanizing condition.

This could be achieved through proper enlightenment of the populace and general improvement in the quality of maternity service and it's delivery as well as the quality of surgical service.

## References

1. Sachadev PS. Surgical repairs of vesico-vaginal fistulae. *J Coll Physicians Surg Pak* 2002; 12: 223-6.
2. Wall LL, Karshima JA, Krischner C, Arrowsmith SD. The Obstetric vesicovesical fistula: Characteristics of patients from Jos, Nigeria. *IS J Obstet Gynecol* 2004; 190: 1011-9.
3. Hilton P. Vesicovaginal fistulae in developing countries. *Int J NObstet* 2003; 82: 285-95.
4. Cottingham J, Royston E. Obstetric fistula: A review of available information Geneva: World Health Organization; 1991.
5. 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: 189-94.
6. Kumar S, Kekre NS, Gopalakrishnan G. Vesicovaginal fistula: An update. *Indian J Urol* 2007; 23: 187-91.
7. Onkar, Shilpi SG, Raji KM. Urogenital Fistulas in women: a 5-year experience at a single centre. *Urol J* 2010; 7: 35-39.
8. Saba S, Kausar JS. Trans-vaginal Sonographic Evaluation of Vesicovaginal Fistula. *J Pak Med Assoc* 2005; 55(7): 292-294.
9. Rafique M. Genitourinary fistulas of Obstetric origin. *Int Urol Nephrol* 2002-2003; 34: 489-93.
10. Iloabachie GC. Two Stage repair of giant vesicovaginal fistula. *Int J Gynaecol Obstet* 1989; 28: 27-31.
11. Howkins J, Hudson CN. Treatment of injuries of the bladder and ureter; management of urinary fistulae; urinary diversion. In: Howkins J, Hudson CN (eds), Shaw's textbook of operative Gynaecology. 5th edition. New York: Churchill Livingstone, 1983; 336-68.
12. Lawson JB. Injuries to the urinary tract. In: Lawson JB, Stewart DB (eds), *Obstetrics and Gynaecology in the tropics and developing countries*. London: Edward Arnold, 1967; 481-522.
13. Nwogu- Ikojo E, Chigbu C, Iloabachie G. Bladder-only Repair of Vesicovaginal FistulaL: Twelve Years Experience in Southeastern Nigeria. *Webmed Central OBSTETRICS AND GYNAECOLOGY* 2010; 1(10): WMC 001030.
14. Puneekar SV, Prem AR, Kelkar AR, Ridhorkar VR. Repair of Complex vesicovaginal fistulae using peritoneal flap interposition: a different design. *Indian J Urol* 1997; 14: 24-8.
15. Gerbar GS, Shoenberg HW. Female Urinary tract fistulas. *J Urol* 1993; 149: 229- 36.
16. Rana M, Farhat N, Khursheed A. Management of vesicovaginal fistulae in urological context. *J Coll Physicians and surg Pak Jan* 2007; 17(1): 28-31.
17. Saaqib S, Rana T, Asghar F, Zia A, Iqbae S. Causes and Management of Urogenital Fistula. *Annals* 2010; 16(4): 303-306.
18. Malik HJ, Rajib AD, Jan MS. Vesico-vaginal fistula- experience of surgical repair at Larkana. *Pak J Med Res* 2006; 13(3): 445-52.
19. World Health Organization. Obstetric fistula. A review of available information. WHO/MCH/91.5. Geneva: WHO; 1991.

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