

## Vesico-vaginal fistula repair: experience with first twenty-three patients seen at a tertiary hospital in north-central Nigeria

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### Abstract

**Background:** Vesico-vaginal fistula (VVF) has been a recurrent challenge to Obstetricians and Gynaecologists in many hospitals in Nigeria. The objective of this study was to determine the causes of VVF, site and size and the success of surgery in VVF patients.

**Methods:** This was a prospective descriptive study of the first 23 cases of VVF repair at the Federal Medical Centre, Makurdi, from January, 2012 to December, 2014. The clinical records of all patients who had VVF repair were reviewed and analysed.

**Results:** The main cause of VVF in this study was prolonged obstructed labour accounting for 52.1% followed by iatrogenic causes such as gynaecological procedures (30.4%). Anterior vaginal wall fistula was the commonest defect accounting for 91.3%. Most of the fistulas were less than 5cm and surgery was successful in 80.9% of the cases. Most of the cases (76.2%) were

done under regional anaesthesia. Majority (94.1%) of the successful repairs were done under spinal anaesthesia. Most of the patients were discharged after three weeks.

**Conclusion:** Prolonged obstructed labour was still the leading cause of VVF, though the percentage is lower compared to most reviews across the country. Majority of the cases had successful surgery because of the sizes and the uncomplicated nature of the fistulae. Iatrogenic causes account for about a third of the cases of VVF indicating the need for extra vigilance on the part of the practitioners. Spinal anaesthesia can be used beneficially for VVF repair.

**Keywords:** Vesico-vaginal fistula, repair, iatrogenic, outcomes.

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### Introduction

Vesico-vaginal fistula (VVF) is a gynaecological condition in which there is abnormal communication between the urinary bladder and the vagina resulting in leakage of urine through the vagina<sup>1,2</sup>. The disease is known worldwide and indeed was widespread in America and Europe in the early parts of the twentieth Century<sup>3,4</sup>. Vesico-vaginal fistula is a very serious problem among the Hausa and Fulani women in Northern Nigeria with prolonged obstructed labour being the leading cause accounting for about 80-95% of cases seen<sup>5</sup>. Other common causes of VVF include destructive operations such as craniotomy, forceps delivery, ruptured uterus, hysterectomy and cancer of the

cervix<sup>3-5</sup>. Rare causes such as induced unsafe abortions<sup>5,6</sup> have been reported. Nigeria has the highest prevalence rate of VVF in the world with about 400,000 -800,000 women living with the disease and almost 20,000 new cases every year and 90% of them untreated<sup>7</sup>.

Benue State, North-Central Nigeria, contributes 1% to the annual incidence<sup>7</sup>. Before now, surgeons used to come from other states for VVF repair but there is a trained surgeon at the Federal Medical Centre, Makurdi who started work few years ago necessitating the need for this study.

### Materials and Methods

This was a prospective descriptive study covering a period of three years from January, 2012 to December, 2014 carried out at the Federal Medical Centre, Makurdi, North-Central Nigeria. The clinical and operative records of all patients who had VVF repair during the study period were analysed using simple frequency tables. The data extracted from the notes included the patients age, parity, religion, tribe, cause of fistula, size and site of fistula, type of anaesthesia, duration of hospital stay and whether the surgery was successful or not.

### Results

A total of 23 patients had VVF repair during the study period. Majority of the cases (91.2%) were aged 26 years and above. Only two (8.8%) of the cases were of the

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teenage age group ( $\leq 19$  years). Primipara accounted for 21.7% of cases while 78.3% were multipara. Based on religion, about 90% of them were Christians while about 10% were Muslims. Eleven (47.8%) of the patients were from the Tiv tribe while the remaining cases were accounted for by the Idoma (26.1%), Igala (13%), Hausa-Fulani (8.7%) and Igbo (4.4%). See table.

Table: Showing the biodata, causes, sites and sizes of fistulae in VVF patients

Age	Frequency	Percentage
$\leq 15$	1	4.4
16-25	1	4.4
26-35	5	21.7
36-45	10	43.5
$\geq 46$	6	26.0
Total	23	100
Parity		
Primipara	5	21.7
Multipara	18	78.3
Total	23	100
Religion		
Christianity	21	91.3
Islam	2	8.3
Total	23	100
Tribe		
Tiv	11	47.8
Idoma	6	26.1
Igbo	1	4.4
Hausa/Fulani	2	8.7
Total	23	100
Causes		
Prolonged Obstructed labour iatrogenic	12	52.1
- Forceps delivery	1	4.4
- TAH	7	30.4
- Unsafe abortion	1	4.4
Cancer of the cervix	2	8.7
Total	23	100
Site		
- Anterior vaginal wall	21	91.3
- Lateral vaginal wall	2	8.7
Total	23	100
Size		
- $< 2\text{cm}$	2	8.7
- 2-5cm	10	43.5
- $> 5\text{cm}$	11	47.8
Total	23	100

The surgical route used for the majority of the patients who had VVF repair was transvaginal while two had the repair through the abdominal route. Prolonged obstructed labour was the commonest cause of VVF (52.1%). Of the iatrogenic causes, total abdominal hysterectomy was the commonest procedure responsible for VVF. It accounted for seven (30.4%) of all cases of

VVF. One case (4.4%) resulted from a difficult forceps delivery conducted at the hospital under review. Another one (4.4%) resulted from an unsafe abortion that was neglected for many years resulting in VVF and bladder stone formation. There were two (8.7%) cases of cancer of the cervix causing VVF. The sites and sizes of the fistulae during examination can be seen in the table.

Seventeen (81%) of the patients had successful repair while four (19%) had unsuccessful repair. Most of the cases, 16 (76.2%), were done under regional anaesthesia while 5 (23.8%) were under general anaesthesia. Sixteen (94%) of the successful repairs were done under regional (spinal) anaesthesia while one (6%) was under general anaesthesia. All the unsuccessful repairs were done under general anaesthesia.

Twenty (95.2%) of the patients were discharged after three weeks of stay in hospital. One (4.8%) of them was discharged after two weeks. This patient's size of fistula was 2cm.

### Discussion

This study reveals that majority of the women who had VVF were aged 26 years and above and only 8.8% were within the teenage age group. Also, most of the women were multipara. These findings are contrary to most studies in the Northern part of Nigeria. Ameh in Sokoto, North Western Nigeria found that 72.7% of women with VVF were within the teenage age group while majority of them were primipara<sup>1</sup>. Harrison in Zaria and Lawson in Ibadan in the eighties also found that majority of cases of VVF were within the teenage age group and were also primipara<sup>3,8</sup>.

Over 90% of the patients were Christians of the dominant Tiv and Idoma speaking tribes in the State. Hausa/Fulani who form a small population ( $< 1\%$ ) in the State accounted for less than 10%. Our results are similar to those obtained in the South Eastern part of Nigeria which is also Christian dominated<sup>9</sup>.

Prolonged obstructed labour was still the leading cause of VVF in this study accounting for about 52% though lower than most studies in Nigeria which ranges between 80-95%<sup>3,8,11</sup>. Pressure necrosis following prolonged obstructed labour usually results in fistula formation. Of the iatrogenic causes, 7 (30.4%) interestingly were caused by total abdominal hysterectomy which were carried out by non-specialist and junior doctors within the State. One of the procedures was done by a Senior Registrar in a private hospital.

Apart from the major causes of VVF noted in this study, there were some rare causes. One of such rare causes of VVF was also iatrogenic and occurred following a difficult delivery in the hospital under review. Induced unsafe abortion in a 26 year old woman was another rare cause of VVF<sup>6</sup>. This patient was poorly managed for six years after the incidence of the unsafe abortion and she developed a huge bladder stone as a

complication. The bladder stone was removed during the VVF repair<sup>6</sup>. Similarly, Nwobodo reported a rare case of VVF following sexual assault in Sokoto, North Western Nigeria<sup>5</sup>. There were two cases of VVF caused by cancer of the cervix. These patients had examination under anaesthesia, staging and biopsy and were referred for radiotherapy. Other causes of VVF such as Caesarean section, uterine rupture, harmful traditional practices like female genital cutting, 'Gishiri' cut were not found in this study<sup>20</sup>.

Anterior vaginal wall defects were the commonest site of the VVF in the study accounting for 91.3% of the cases. Lateral wall defect accounted for the minority of the cases. When fistulae occur on the posterior wall, they are known as rectovaginal fistulae and in these cases, faeces instead of urine comes out through the vagina.

Surgery was successful in 81% of the cases, especially in those patients that the sizes of the fistulae were less than 5cm. Several factors contributed to the success of the repair operation. These factors were those generally associated with post operative wound healing and include good nutritional status of the patients and absence of anaemia and infection. In the VVF patients, the size of the fistulae was a factor in the healing of the wound as those with a defect less than 5cm healed successfully. The unsuccessful cases were due to large circumferential defect and excessive scarring. Most of the successful repairs were under spinal anaesthesia. This is likely due to some advantages of spinal anaesthesia that aids the surgeon in carrying out surgery. Spinal anaesthesia reduces blood loss and oozing at the site of surgery which is helpful to the surgeon in having good access<sup>12</sup>. The reduction in metabolic and endocrine response to surgery induced by regional anaesthesia also aids healing<sup>13</sup>. However, since most of the repair was done transvaginally necessitating the lithotomy position, spinal anaesthesia was and should be supplemented with sedation to protect the women's sense of privacy<sup>14</sup>.

With adequate training and careful patient selection, the success rate of fistula repair is encouraging. This knowledge need to spread to patients of VVF as a part of an awareness campaign which is necessary in fighting the scourge. It also appears that the surgical fees of between 40,000 and 100,000 naira (\$201 - 502) charged at the Centre is beyond the reach of many of the patients. Poverty and lack of education are well known factors militating against the eradication of the disease<sup>7,15</sup>. Therefore, there is the need for public enlightenment<sup>16</sup> and effort to address poverty and access to health services by the poorest of the poor who are often the victims of the dreaded disease.

#### **Limitations of the Study**

This study was hospital-based and so may not be a complete reflection of the magnitude of the problem in the larger society. The study also covered a short period of time (three years) thus limiting the potential numbers

of cases that could be recruited. A continuous collation of data at the Centre is recommended.

#### **References**

1. Ameh IG. Vesico-vaginal fistula and urogenital parasituria in Sokoto: Psychosocial response among affected group. *Jos Journal of Medicine* 2008; 3: 37-39.
2. Murphy M. Social consequences of vesico-vaginal fistulae in Northern Nigeria. *J Biosocial Sc* 1981; 13: 139-150.
3. Lawson JB. Management of genito-urinary fistulae. *Clin Obstet Gynaecol* 1978; 5: 209-236.
4. Lister UG. Vesico-vaginal fistula. *Postgr Doc* 1984; 321-323.
5. Nwobodo EI. Vesico-vaginal fistula following sexual assault: a case report. *Trop J Obstet Gynaecol* 2004; 21: 186.
6. Ngwan SD, Obekpa AS, Eke BA, Oguche EI. Vesico-vaginal fistula following an induced abortion with a huge bladder stone: case report. *Jos Journal of Medicine* 2013; 7: 12-13.
7. Ochejele SO, Upuji F. Nigeria has the Highest Rate of VVF in the World (Interview). *Choices* 2014; 1: 25-28.
8. Harrison KA. Child bearing, Health and Social Priorities: A Survey of 22,774 consecutive hospital births in Zaria, Northern Nigeria. *Br J Obstet Gynaecol* 1985; 92: 61-80.
9. Opuji F. It's impracticable to wipe out VVF in Nigeria in a short time. *National Mirror Online*, October 13, 2013. Available at [www.nationalmirroronline.net](http://www.nationalmirroronline.net). Accessed on 2/6/15.
10. Aghaji AE, Odoemene C. Ureteric injuries in Enugu, Nigeria. *East Afr Med J* 1999; 76: 184-188.
11. Ibrahim T, Sadiq AU, Daniel SO. Characteristics of VVF patients as seen in Specialist Hospital, Sokoto, Nigeria. *West Afr J Med* 2000; 19: 59-63.
12. Schnittger T. Regional anaesthesia in developing countries. *Anaesthesia* 2007; Suppl. 1: 44-7.
13. Yokoyama M, Itano Y, Katayama H et al. The effects of continuous epidural anesthesia and analgesia on stress response and immune function in patients undergoing radical esophagectomy. *Anesth Analg* 2005; 101: 1521-7.
14. Edem BE, Anzaku SA, Agan TU, Oku OO. Audit of epidural anaesthesia service at a district hospital in Nigeria. *Highland Med Res J* 2014; 14: 35-38.
15. Nnata S. Profile of obstetric fistula in sub-Saharan health centre. *J Obstet Gynaecol East & Central Afr* 1986; 5: 17-19.
16. Oyenuga DN. Education: the key to preventing vesico-vaginal fistula in Nigeria. *World Health Forum* 1992; 13: 54-56.
17. Hudson CN, Hendricks JP, Ward A. An operation for restoration of urinary continence following total loss of urethra. *Br J Obstet Gynaecol* 1975; 82: 501-504.
18. Janagho EA, Smith O. Clinical evaluation of surgical technique for the correction of complete urinary incontinence. *J Urol* 1972; 107: 401-411.
19. Mustafa AZ, Bushwan HMF. Acquired genitor-urinary fistulae in Sudan. *J Obstet Gynaecol Brit Comm Wlth* 1971; 78: 213-229.
20. Danso KA. Genital tract fistulas. In: Kwawukume EY, Emuveyan EE. (Eds.) *Comprehensive Gynaecology in the Tropics*, Accra, Graphic Packaging Ltd, 2005; 174-81.