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Evaluation of Vesicouterine Fistula with Ultrasonography in a Resource-constrained Setting

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Abstract
Objective: To determine the role of ultrasonography in the evaluation of patients with vesicouterine fistula.
Methodology: This was a retrospective study conducted at the National Obstetric Fistula Centre, Abakaliki, South-East Nigeria between January 2015 and November 2016. Ethical clearance was obtained from Ethics and Research Committee of the National Obstetric Fistula Centre, Abakaliki, Nigeria. A total of 25 patients had vesicouterine fistula during the study period. The records of 22 patients who had pelvic ultrasonography were reviewed and formed the basis of this study.
Results: The mean age of the study population was 30.1±6.2 years. Pelvic ultrasonography revealed a communication between the uterus and the bladder in 19 (86.4%) of patients which is suggestive of vesicouterine fistula. Three patients (13.6%) had normal sonographic assessment. All patients were successfully repaired.
Conclusion: Ultrasonography appears to be a useful, cheap, quick and readily available means of evaluating vesicouterine fistula in a resource-constrained setting. It provides an added advantage to clinical diagnosis in the evaluation of vesicouterine fistula.
Keywords: Vesicouterine fistula, urogenital fistula, ultrasonography.

1. Introduction

Vesicouterine fistula represents an abnormal communication between the bladder and the uterus. It is a cause of urinary incontinence hence it negatively affects the social wellbeing of the affected woman.[1] It comprises 1-4% of all urogenital fistulas.[1,2] In a previous study done in our setting, it was encountered in 2.1% of patients with genital fistulas.[1]

Vesicouterine fistula is usually iatrogenic, following a low segment incision on the uterus.[1,3-6] Clinical findings of menouria and urine leakage are suggestive of vesicouterine fistula as seen in some patients.[7]

Ultrasonography is an inexpensive and relatively available technique that can be used in the evaluation of patients with vesicouterine fistula. This may be helpful after a proper clinical assessment of the patient. Vesicouterine fistula may appear as double echogenic lines from the endometrial cavity to the posterior wall of the bladder on ulrasonography.[4] Other imaging techniques that may be helpful in this condition are cystoscopy, intravenous urography, hysterosalpingography, sonohysterography, computerized tomography and magnetic resonance imaging.[1-3,7]

The objective of this study was to determine the role of ultrasonography in the evaluation of patients with vesicouterine fistula.

2. Materials and Methods

This was a retrospective study conducted at the National Obstetric Fistula Centre, Abakaliki, South-East Nigeria between January 2015 and November 2016. The centre is a national reference centre for free treatment of female genital fistula. A total of 25 patients had repair of vesicouterine fistula during the study period. Three patients were excluded from this study because they did not have ultrasonographic evaluation before surgery. Ethical clearance was obtained from Ethics and Research Committee of the National Obstetric Fistula Centre, Abakaliki, Nigeria. The medical records of 22 women who had vesicouterine fistula and also had ultrasound scan before surgery were reviewed. All patients had free repair of vesicouterine fistula via the transvesical extraperitoneal route.

3. Results

A total of 22 patients were involved in the study. They were between the ages of 23 and 42 years (Table 1). The mean age was 30.1±6.2 years. Fifteen (68.2%) belonged to the Igbo Ethnic group. Majority (81.8%) of patients were traders and most patients had either primary or secondary level of education. All patients have had at least a previous caesarean section. Duration of symptoms ranged from 1 to 96 months. Twelve (54.5%) of the patients had urinary incontinence, 19 (86.4%) had menouria while 1 (4.5%) presented with amenorrhea. Ultrasound scan established a communication between the bladder and the uterus (suggestive of vesicouterine fistula) in 19 (86.4%) out of the 22 patients. This is shown in table 2. This was confirmed during surgery. All patients were

successfully repaired.

Table 1: Sociodemographic indices of patients

Variable	Frequency (%)
Age	
20 – 29	12(54.5)
30 – 39	6(27.3)
40 – 49	4(18.2)
Tribe	
Igbo	15(68.2)
Hausa	3(13.6)
Others	4(18.2)
Religion	
Christian	19(86.4)
Islam	3(13.6)
Occupation	
Trading	18(81.8)
Farming	2(9.1)
Others	2(9.1)
Level of Education	
Primary	9(40.9)
Secondary	8(36.4)
Tertiary	2(9.1)
No Formal Education	3(13.6)
Marital status	
Married	21(95.5)
Seperated	1(4.5)

Table 2: Ultrasound findings in patients with vesicouterine fistula

Ultrasound findings	Frequency(%)
Vesicouterine fistula	19(86.4)
Normal findings	3(13.6)

4. Discussion

Vesicouterine fistula is a rare type of urogenital fistula which often occurs following caesarean section and its incidence appears to be increasing as a result of increasing caesarean section rate.[1,3-6,8] Symptoms of vesicouterine fistula include urinary incontinence, menouria and amenorrhea[1,2] These symptoms were seen in the index study. Youssef syndrome is pathognomonic for vesicouterine fistula which is a combination of amenorrhea, menouria and continence of urine.[9] One of our patients exhibited this classic triad. Clinically, three types of vesicouterine fistula have been previously described in the literature: type I - with menouria; type II - with dual menstrual flow through the bladder and vagina; and type III - with normal vaginal menstruation.[10]

After a clinical diagnosis of vesicouterine fistula ultrasonography is an added advantage as it may further strengthen the diagnosis. The diagnosis of vesicouterine fistula may be made by demonstrating a communication between the uterine cavity and the lumen of the bladder.[4] This was the major finding of this study. Several studies have also demonstrated the usefulness of ultrasonography in patients with vesicouterine fistula.[1,4,11] There are other modalities that can be used to evaluate this condition which include hysterosalpingography, cystoscopy, computerised tomography scan, magnetic resonance imaging and cystography.[9,10] These may be invasive and stressful to the patient who may not even be able to afford them in a low-resource setting.[4] These relatively sophisticated investigations may not even be diagnostic of vesicouterine fistula in some cases.[7] There is need to look for a cheap way to evaluate women with this kind of fistula in our setting. We therefore described a cheap way of assessing women with vesicouterine fistula using ultrasonography following a clinical assessment. Some of our patients had normal sonographic features. This has also been documented by some other authors.[2]

Apart from establishing a communication between the bladder and the uterus in patients with vesicouterine fistula, ultrasonography may also give additional useful information on the state of the upper urinary tract.

5. Conclusion

Ultrasonography is complementary to clinical assessment in the diagnosis of vesicouterine fistula. It is non-invasive, inexpensive and appears reliable in patients with vesicouterine fistula. There is a need to look towards

this direction in a resource-constrained setting like ours as other sophisticated and expensive investigation modalities may not always be available. Even if they are available they may not always be diagnostic of vesicouterine fistula.

Conflicts of interest
None

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