

Management and Outcome of Transverse Vaginal Septum in a Nigerian Tertiary Health Institution

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Abstract

Background: Transverse vaginal septum is a congenital müllerian malformation resulting from failure of fusion or canalization of the urogenital sinus and the müllerian ducts. This results in amenorrhoea, inability to consummate marriage and primary infertility if left untreated. It is a rare finding in pregnancy and labor. **Objectives:** The objective of this study was to review the management and outcome of patients with transverse vaginal septum. **Materials and Method:** It was a retrospective study where data from medical records of all cases of transverse vaginal septum managed over a 10-year period (January 2008 to December 2017) were collected and reviewed. There were 18 patients managed over the period of study, however 16 case folders were retrieved and 2 were missing. **Results:** The patients' ages ranged between 16 and 40 years, with a mean (\pm SD) age of 23.3(\pm 7.7) years. They had varying presenting symptoms including lower abdominal pain in 15(93.7%), lower abdominal swelling in 8(53.3%), dyspareunia in 9(56.2%), primary amenorrhoea in 12(75%) and failure of coital penetration in 9 (56.2%) patients. The septum was imperforate in 12(75.0%) and perforate in 4 (25.0%) patients. The septum was located in the lower third of the vagina in 13 (78.6%) patients and at mid and upper portions in 1(7.1%) and 2(14.3%) patients respectively. Some of the patients (31.2%) had previous surgery prior to presentation. Fourteen (87.5%) were managed via perineal approach and 2(12.5%) via abdominoperineal route. Most patients, (68.8%) did not develop any complication, however 4(25%) had re-obstruction and only 1(6.2%) had vaginal stenosis. **Conclusion:** Transverse vaginal septum is a rare anomaly of the female genital tract. The most common symptom was lower abdominal pain and the predominant type was the low type. The main treatment modality was surgical with significant success.

Keywords: Management, Outcome, Transverse, Vaginal, Septum.

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INTRODUCTION

Transverse vaginal septum is a rare type of müllerian anomaly. It results from faulty fusion or canalization of the urogenital sinus and müllerian ducts. Delaunay first described it in 1877 [1]. The cause is unknown, although some cases may be the result of a female sex linked autosomal recessive transmission [2]. Various combinations may co-exist in a single subject. The exact incidence is unknown; however, approximately 1 in 30,000 to 1 in 80,000 women [3] have been reported. Approximately, 45% occur in the upper vagina, 40% in the mid-portion and 15% in the lower vagina [4, 5]. When the septum is located in the upper vagina, it is likely to be patent, whereas those located in the lower part of the vagina are more often

complete. Septum can be perforate or imperforate, and vary in their thickness and location in the vagina. Imperforate septum present in adolescence with obstructed menstruation and haematocolpos while women with a perforate septum often have normal menses and usually present with difficulties with intercourse or inserting tampons [6, 7]. Uterovaginal anomalies are classified into four groups. The first group is agenesis of uterus and vagina (Mayer Rokitansky-Kuster Hauser syndrome) due to dysplasia of müllerian ducts with absence of normal uterus and most or the entire vagina. The second group, disorders of vertical fusion result from faults in the junction between the downward growing müllerian ducts and upward growing derivatives of urogenital sinus and the vaginal bulbs. This group include; transverse vaginal

septum and cervical agenesis. The third group consists of disorders of lateral fusion of the true mullerian ducts and failure of absorption of the uterine septum. The fourth group include; unusual configurations of vertical and lateral fusion defects [5].

Clinical examination, ultrasound, and magnetic resonance imaging (MRI) are all used in diagnosis and pre-operative planning. Treatment involves surgical resection of the septum and anastomosis of the proximal and distal vagina. This can be performed vaginally, laparoscopically, or via an abdominoperineal approach, depending on the location and thickness of the septum. It is essential that accurate information on the septum is available to ensure that the correct operative approach is chosen.

There is scanty published data on short- or long- term outcomes following the resection of transverse vaginal septum. Complications may be significant and include vaginal stenosis and reobstruction (recurrence), dyspareunia, endometriosis, infertility, obstetric complications, and psychological difficulties, although there is no long- term follow- up data for this.

The aim of this study was to describe the presentation, treatment, and management outcome among females with a congenital transverse vaginal septum managed at our facility to improve clinical decision- making and outcome.

MATERIALS AND METHOD

It was a retrospective study conducted at the Obstetrics and Gynaecology Department of Usmanu Danfodiyo University Teaching Hospital Sokoto. All cases of transverse vaginal septum diagnosed over a 10-year period from January 2008 to December 2017 were included in the study.

Medical records of all the cases were retrieved and reviewed for information regarding clinical presentation, vaginal examination and ultrasound findings, treatment modalities and outcome. The pattern of classification of the vaginal septum, which was based on the location and presence or absence of perforation,

was also noted as shown in table 1. The location was based on the distance from the vaginal introitus to the distal end of the septum, as assessed by vaginal examination in the clinic or by examination under anaesthesia in the theatre.

Statistical analysis was performed using SPSS version 23. The data was presented in text, tables and charts.

Table-1: Classification of transverse vaginal septum

Classification of vaginal septum	
*Location	
Low type	<3 cm
Mid type	3–6 cm
High type	>6 cm
Presence of perforation	
Perforate	
Imperforate	

* Distance measured from vaginal introitus to the distal end of the septum

RESULTS

The patients with transverse vaginal septum studied aged between 16 and 40years, with a mean (+SD) age of 23.3(+7.7) years. Most of the patients were married 13 (81.3%) while 2(12.5%) were single and 1(6.2%) was a divorcee. Majority of the patients (93.8%) were not formally educated and 87.5% were of Hausa/Fulani ethnic group. They had varying presenting symptoms ranging from lower abdominal pain in 15(93.7%), lower abdominal swelling in 8(53.3%), dyspareunia in 9(56.2%), primary amenorrhoea in 12(75%) to failure of coital penetration in 9(56.2%) patients. One out of the 9 patients with failure of coital penetration 1 developed obstructed labour, which necessitated having an emergency caesarean section with delivery of a macerated stillbirth baby. She was planned for an excision of the septum however she was lost to follow up.

On examination, varying sizes of abdominal mass were found with the largest up to 36 weeks uterine size. The mode of presentation is as shown on figure 1 below.

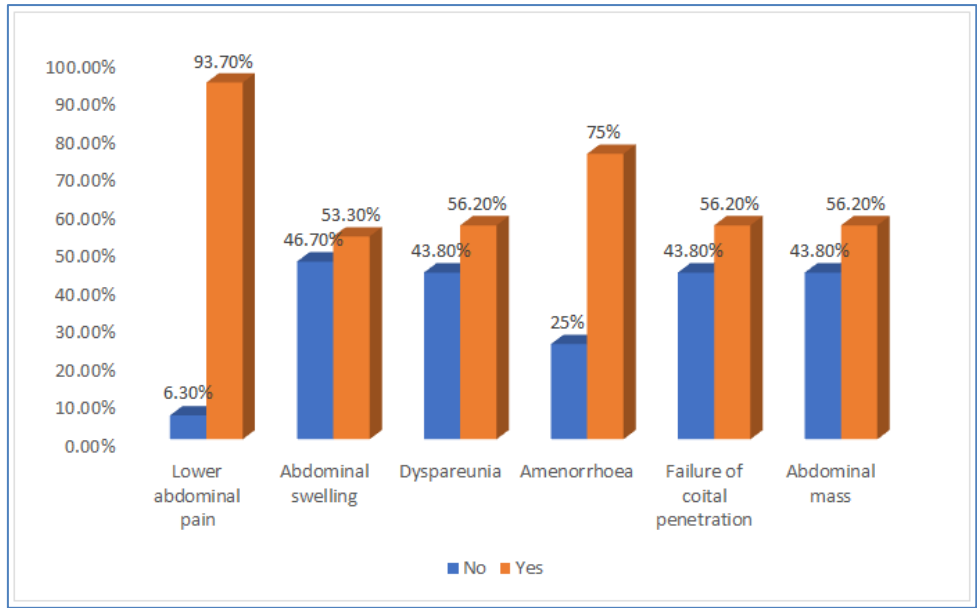


Fig-1: Presenting symptoms

The septum was imperforate in 12(75%) patients. The thickness of the septum was not assessed as majority of the patients had imperforate septum and Transvaginal Scan (TVS) as well as MRI were not

available. Thirteen (78.6%) patients had the septum at low level, while others had it located at different levels of the vagina as shown on figure 2 below.

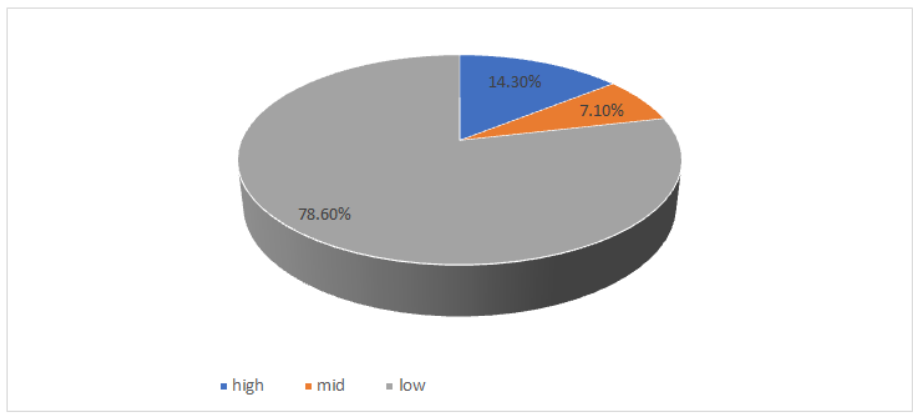


Fig-2: Position of vaginal septum

Some of the patients (31.2%) had previous unsuccessful surgeries prior to presentation. Fourteen (87.5%) were managed via perineal approach while 2(12.5%) had abdomino-perineal vaginoplasty by a multidisciplinary team, with one case requiring the use of bowel to repair the resulting vaginal defect. All of these cases that had abdominoperineal surgery were imperforate and had undergone previous surgery for the septum in other hospitals.

Twelve out of 14(85.7%) of those managed via the perineal approach were offered surgical excision while the remaining 2(14.3%) had incision and drainage

of haematocolpos. Three were requested to perform vaginal dilatation after surgery especially in those with significant scarring from previous surgery and 11 were encouraged to have regular and frequent coitus to maintain patency of the vagina.

Most patients (68.8%) did not develop any complication, however 4(25%) had re-obstruction and only 1(6.2%) had vaginal stenosis. The patient who developed vaginal stenosis did not practice repeated vaginal dilatation as advised. She was retreated by vaginal dilatation therapy.

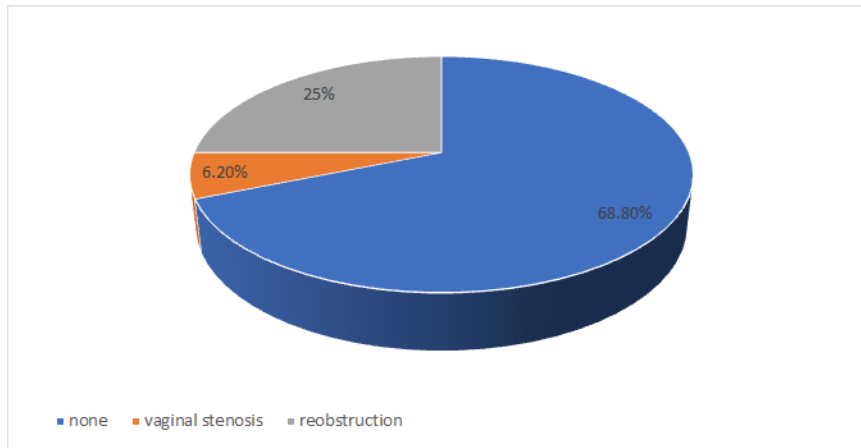


Fig-3: Longterm complications

The median length of follow-up after surgery was 3 months with a range of 6 weeks to 3 months. All the patients had regular menstrual periods during follow-up. Thirteen (81.2%) out of them were sexually active among which three had dyspareunia. Two patients who had vaginal excision of the septum conceived spontaneously and had vaginal delivery.

DISCUSSION

A transverse vaginal septum results from either incomplete canalization of the vaginal plate or failure of the paramesonephric ducts to meet the urogenital sinus [4]. It is one of the main causes of hematocolpometria.

Majority of the patients studied were married and their age range was between 16 and 40 years with a mean age of 23.3 years. This reflects the practice of early marriage which is a common cultural event in the Northern part of Nigeria.

Transverse vaginal septum is classified based on septum location, thickness and presence or absence of perforation [4]. The location of the septum is based on the distance from the vaginal introitus to the distal end of the septum, and it can be low (< 3 cm), mid (3–6 cm), or high (> 6 cm). Most of the patients in our study had the septum located in the lower part of the vagina. This finding is similar to the study by Williams *et al.* [8] and Sardesai *et al.* [9] where majority of the patients also had a low vaginal septum. The thickness of the septum can be thin (< 1 cm) or thick (> 1 cm) [6]. This can usually be determined upon vaginal examination if it is perforate or by using MRI, Transvaginal Scan (TVS) or Transperineal Ultrasound if imperforate [6, 7]. In our study, septal thickness was not assessed and included in the classification of the patients because MRI and transvaginal probe were not available. As noted by Oloyede *et al.* [10], measurement of septum thickness preoperatively helps to plan the surgical technique.

The clinical presentation of vaginal septum is variable. Majority of patients in our study presented with lower abdominal pain and amenorrhoea. This is not surprising since most of the subjects (75.0%) have imperforate septum and therefore may not have normal menstrual flow. In addition, these symptoms manifest earlier than other clinical features, as they usually occur at the onset of puberty even before engaging in sexual activity. Rarely, it may present with massive abdominal swelling as was found in one of our patients who presented late at the age of 40 years with an abdominal mass of up to 36 weeks size.

Treatment approach for affected patients depends on the thickness and location of the septum. It is accepted that low thin as well as thin perforate septum are less complex, and can be resected vaginally with a low complication rate. It is important that the entire septum is resected to prevent re-stenosis and scarring. Obstructed, mid, high, and thick septum are more complex, and are best resected through the abdominoperineal route. This is because approaching a mid or high septum blindly through the vagina increases the risk of trauma to adjacent organs [7]. Thick septum may be difficult to remove and may leave a defect in the vagina between the proximal and distal vagina. In our study, this problem was encountered in one of the patients with previous unsuccessful repair, who had repeat surgery in our centre. It was managed by the use of a section of intestine to bridge the vaginal defect. Other workers have reported the use of skin grafts for this purpose [9].

There are various techniques of managing vaginal septum, which include simple excision through the vagina, incision and drainage of hematocolpos, vaginoscopy, abdominoperineal vaginoplasty and laparoscopic resection of the vaginal septum [9-11]. Most of the patients in this study had simple excision of the septum as majority had a low type that was easy to approach through the vagina. Only two had abdominoperineal repair.

Beside the aforementioned conventional techniques, newer methods have been described in literature [12-16]. The Grünberger method consists of a cross-shaped incision on the caudal part of the septum, a cruciate incision on the cranial part, and transverse closure [12]. Wierrani *et al.* [13] described good results in 13 patients treated with Grünberger modification of the Garcia Z plasty. Van Bijsterveldt *et al.* [14] proposed two novel techniques for the treatment of the vaginal septum: the push through and pull through techniques. The former requires a combined abdominal-vaginal approach, which is used in patients with higher risk of restenosis after surgery; while the latter technique is reserved for those with a simple vaginal obstruction. A modification of this technique was performed by Layman *et al.* [15] with a pull through of a proximal distended vagina using an Olbert balloon catheter to facilitate the surgical management and to limit the postoperative narrowing of the vagina. Sardesai *et al.* [9] described double cross plasty/Z plasty for the management of transverse vaginal septum after a 20-year experience as a better technique compared with the other surgical methods. A method of serial balloon dilation using a transvaginally inserted guide wire was described by Kansagra *et al.* [16].

Post-operative complications such as vaginal stenosis and re-obstruction can occur, especially when the septum is thick or when there is failure of repeated dilatation after surgery. Our patient who developed stenosis resulted from her inability to practice repeated vaginal dilatation as advised. Gupta *et al.* [17] had similarly reported a case of recurrent stricture formation arising from failure to perform repeated dilatation. It has been shown that postoperative vaginal dilation or a vaginal mould may help in decreasing the scarring and stenosis of the surgical site [12]. However, these require the cooperation of the young adolescent patient, who may be apprehensive and not emotionally mature enough to use dilators faithfully. It is critical to the success of the procedure. Wierrani *et al.* [13] reported success in patients using a mould for 5–8 months postoperatively and then nightly for 6 months afterwards, in patients that were not sexually active. Thus, the outcome is better with long-term use of vaginal mould or stent.

Long-term follow up of these patients is very important as they may develop other complications such as dyspareunia, menstrual irregularities, infertility, spontaneous abortions preterm and obstructed labor as reported by Bello *et al.* [18]. Rock *et al.* [19] reported that patients were less likely to conceive after surgical correction if their transverse vaginal septum was located in the upper or middle third of the vagina. If they did succeed, 50% of pregnancies ended in spontaneous abortions. Patients should be educated about these potential long-term complications and the need to closely follow up with their provider when trying to become pregnant.

CONCLUSION

The transverse vaginal septum remains a rare anomaly of the female genital tract. They are variable depending on the location and thickness of the septum. Haematocolpos remains the main consequence of this septum. The management is essentially based on surgery while taking into account the risks of postoperative stenosis and the repercussions on the upper genital tract. Psychosocial support especially for adolescents cannot be over emphasized.

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