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Clinical Report

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Perforated Transverse High Vaginal Septum Diagnosed on Transvaginal Sonography and MRI in patient with Dyspareunia - A Rare Case Report

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Abstract

Transverse vaginal septum is a rare type of mullerian anomaly. We report a rare case of perforated transverse vaginal septum in 31-year-old female with history of dyspareunia diagnosed on ultrasound. Transvaginal sonography was performed which showed a thick iso to hypoechoic flap like structure seen posteroinferior to the cervix suggestive of vaginal septum. The findings of vaginal septum on transvaginal sonography were later confirmed on magnetic resonance imaging. It was successfully surgically resected followed by hysteroscopy and vaginoplasty. To our knowledge, this is the first case report of ultrasound findings of perforated transverse vaginal septum.

Keywords

Perforated transverse vaginal septum, Dyspareunia, Transvaginal sonography, Magnetic resonance imaging, Resection, vaginoplasty

Introduction

Transverse vaginal septum (TVS) is a rare type of Mullerian duct anomaly that results from incomplete fusion of the vaginal components of the Mullerian duct and the urogenital sinus. The incidence of TVS is ranging between 1:40,000 to 1:84,000. Histologically, it is a membrane of fibrous connective tissue with vascular and muscular components. Whether the septum is intact or perforated, clinical manifestations of TVS may vary [1]. Clinical examination, ultrasound, and magnetic resonance imaging (MRI) are all used in diagnosis of TVS however MRI is considered the gold standard imaging modality [2]. Role of pelvic ultrasound including the 3D ultrasound is limited in evaluating the vaginal anomalies. Even with the transvaginal sonography, the diagnosis of perforated TVS is quite difficult especially in the absence of hematocolpos and hematometra. Treatment involves surgical resection of the septum and anastomosis of the proximal and distal vagina [2, 3]. We report a rare case of symptomatic perforated high transverse septum in 31-year-old female which was first suspected on transvaginal sonography with the finding of iso to hypoechoic thick flap like structure posteroinferior to the cervix. Based on clinical history and transvaginal sonography findings, provisional diagnosis of perforated TVS was made. The diagnosis was further confirmed on MRI. Vaginal septal resection and hysteroscopy followed by vaginoplasty were performed later.

Case History

A 31-year-old married female presented to gynaecology department with complaints of difficult sexual intercourse. She got married 1 year prior to presentation and since then had been having very painful intercourse at penetration.

Menarche was attained when she was aged 12 years old and her previous menstrual cycles were regular at 30 days interval with a 4 days flow. There was also a history of dysmenorrhoea. On examination, she had well developed secondary sexual characteristics. There was no mass palpable mass during clinical examination. Local examination showed normal labia majora and minora. Vaginal examination could not be done as patient was anxious and not co-operative. Transvaginal sonography was performed on next day which showed iso to hypoechoic thick flap like structure posteroinferior to the cervix in lower transcervical scan with minimal adjacent fluid (Figure 1). There was no evidence of hematometra and hematocolpos on transvaginal sonography. This was followed by abdominopelvic ultrasound scan which showed grossly normal urinary tract system. Based on history of dyspareunia and transvaginal sonography findings, suspicion of muscular septum was raised and a provisional diagnosis of TVS was made.

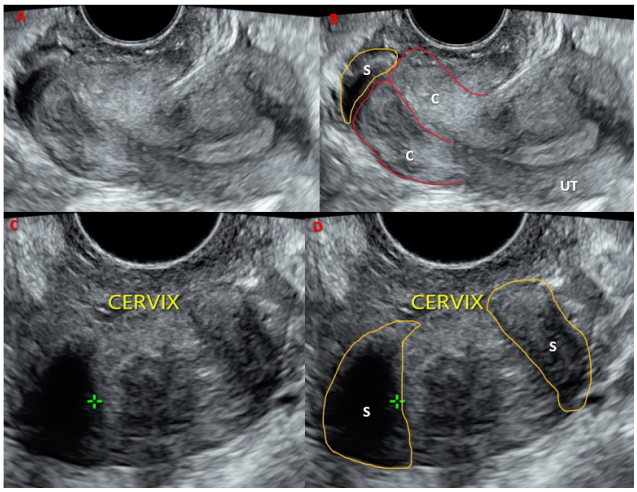

Figure 1: TVS (Sagittal image) shows normal uterus with isoechoic thick muscular septum along the posteroinferior aspect of the cervix (A, B); S–Septum, C–Cervix, UT-Uterus. TVS (Axial image) in the lower transcervical level shows thick muscular septum seen projecting along the sides of cervix (C, D). S–Septum.

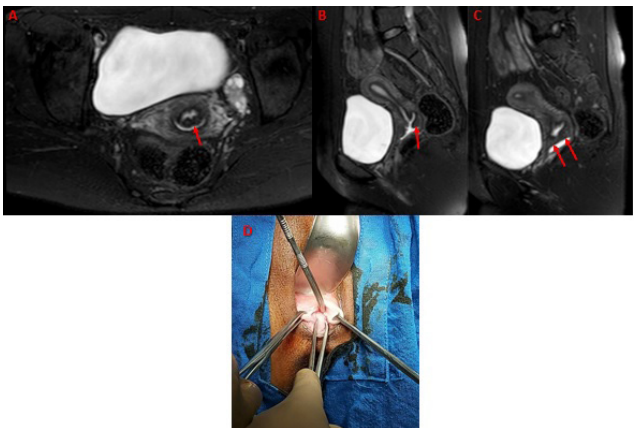

Figure 2: MRI T2 Axial image at the cervicovaginal region shows hypointense muscular septum (arrow) (A), Sagittal image shows thick incomplete muscular vaginal septum on the right side (arrow) (B), Sagittal image shows complete TVS on the left side with minimal fluid in the vaginal cavity proximal and distal to the septum (arrows) (C). Anatomical view of vagina showing a TVS (D).

Patient was advised MRI pelvis to confirm the findings. MRI pelvis was performed which confirmed the ultrasound findings of TVS. There was hypointense muscular septum on T2W image which was incomplete on the right side and complete on the left side with minimal fluid in the vaginal cavity proximal and distal to the septum (Figure 2 A-C). Surgery was electively planned for vaginal septum resection. Procedure was done under general anaesthesia. During surgery, the TVS (Figure 2D) was resected followed by hysteroscopy and vaginoplasty. Post operatively, she was managed with intravenous antibiotics, intravenous fluids and analgesics. Additionally, in order to prevent vagina stricture, a manual dilatation was explained 2-3 times a day. Patient had an uneventful recovery and she was discharged on day 2 after the surgery. On clinical follow-up, patient had no complaints.

Discussion

Mullerian system give rise to the upper part of the vagina while sinovaginal bulbs of the urogenital sinus give rise to the lower half. The aetiology of TVS as proposed by Koff is due to failure of fusion of the two, after examining human embryos at various stages. Other theories being the failure of canalisation of vaginal plates, abnormal proliferation of mesoderm or combination of any of these. The theory of incomplete fusion is supported by the histopathology of septum, as the cranial surface of the septum is lined by the columnar epithelium of Mullerian origin and the caudal surface is lined by the squamous epithelium of urogenital sinus. The presence of TVS at various levels also supports another theory of failed canalisation of the vaginal plate [1]. The common site of TVS is upper third vagina however it can also occur in middle third and lower third of vagina. Lodi found within his large study of 42 patients over the 42 years that 45% of septa were high vaginal, 40% of septa were midvaginal, and 14% were low vaginal [2]. In our case, the TVS was also located in upper third of vagina. Depending upon the presence of communication, TVS can be perforated and imperforated. Lodi also found in his study of 42 patients that, 39 had perforated septum while only 3 patients had an imperforated septum. Other literature also supported the same showing 90% perforated vaginal and 10% imperforated septum. Imperforated septum usually presents in the early puberty as hydrometrocolpos and primary amenorrhea with cyclical pain respectively. Whereas women with perforated septum usually have a normal menstrual cycle. It can be presented as dyspareunia, primary infertility, dysmenorrhoea, and childbirth issues usually after starting sexual life [1, 3, 4]. The reason for infertility may be due to an obstacle for the passage of sperm. They may also be diagnosed incidentally during vaginal examination [2]. Although, an isolated TVS is less frequently associated with urinary tract anomalies, however imaging to evaluate the urinary system should be performed in all the cases. In our index case of perforated TVS, patient presented with coital problems and dysmenorrhoea and our patient had an abdominopelvic ultrasound scan which showed normal urinary tract system [1, 3]. The European Society of Human Reproduction and Embryology/European Society for Gynaecological Endoscopy consensus in 2013 has classified TVS as the V3 subgroup among the Mullerian duct anom-

alies. Our index was classified as U0C0V3 (Uterus-Normal, CervixNormal, Vagina-Transverse vaginal septum) [1, 4]. The most commonly used diagnostic tool is physical examination but this may sometimes be denied by patients as in our index case. The imaging modalities for the diagnosis of TVS have certain limitations to differentiate between vaginal septum/vaginal atresia/aplasia. Ultrasound helps to visualize a hematocolpos and the presence or absence of a uterus and/or septum but MRI helps in identification of the exact location and thickness of the septum and thus provide relevant information about the surgical approach. Diagnosis is sometimes difficult especially in cases of the perforated vaginal septum when there is no haematocolpos [1, 2, 4]. In our case, provisional diagnosis of TVS was made based on the clinical history and sonography findings which was later confirmed on MRI. The treatment for TVS include excision or incision of the septum with or without vaginal dilatation. Z plasty and Y plasty are the treatment of choice for thick vaginal septum. At times the patient may also need grafts. Abdominopelvic approaches are required for the higher and thicker septum. The role of vaginal dilators post surgically in unmarried woman or early resumption of coitus in sexually active after healing has been described in many studies [1, 3]. In our case, we had a successful outcome with resection followed by hysteroscopy and vaginoplasty.

Conclusion

TVS can be suspected in patient with history of dyspareunia and transvaginal findings of a thick flap like structure in relation to cervix.

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