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Case Report

Intriguing case of transverse vaginal septum: unusual presentation and diagnostic insights

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ABSTRACT

The transverse vaginal septum is a type of Mullerian duct anomaly that occurs due to incomplete fusion or re-canalization of the vaginal and Mullerian structures. Typically, this condition presents as primary amenorrhoea along with cyclical abdominal pain, although it can also manifest as dyspareunia and infertility. Our 24-year-old female patient exhibited symptoms of menstruation upon manual expression, dyspareunia, and infertility. Following the excision of the septum, the patient resumed regular menstrual cycle and is currently 5 months pregnant. This case report focuses on unusual presentation of transverse vaginal septum (TVS) and also signifies how important is to take proper history and clinical examination.

Keywords: Transverse vaginal septum, Microperforated, Amenorrhorea, Infertility, Dysmenorrhoea

INTRODUCTION

Transverse vaginal septum (TVS), although a prevalent congenital anomaly of the vagina, is still considered a rare occurrence. The precise incidence rate is uncertain, but estimates range from 1 in 2,100 to 1 in 72,000.[1]

This entity was first documented by Delaunay in 1877, with Dannreuther subsequently detailing two cases in 1944 and identifying the anomaly as a congenital obstruction of the cervix.[2-4] The most extensive collection and literature of transverse vaginal septa was documented by Lodi in 1951, detailing 42 cases among 89,000 patients (1:2199) seen over a span of 44 years.[5,6]

Pre-pubertal diagnosis of imperforate septae can be challenging unless there is a significant mucocolpos. During adolescence, symptoms may include cyclical abdominal pain, hematocolpos, and haematometra. Women with a perforated septum may experience menstruation but have difficulties with intercourse. Diagnosis is typically made through clinical examination, with confirmation using ultrasound and magnetic resonance imaging (MRI). Treatment often involves surgical removal of the septum, with anastomosis of the proximal and distal ends or use of graft in severe cases. Prognosis post-resection depends on accurate diagnosis and the presence of other anomalies.

This case study presents a patient with a transverse vaginal septum who manifested reduced menstrual blood flow, infertility, and dyspareunia.

CASE REPORT

A 24-year-old woman, married for five years, presented with complaints of infertility lasting two years, reduced menstrual flow for three years, and menstruation only upon expression. Previously She attained menarche at the age of 13, with regular periods lasting 3-4 days, average flow, and well-developed secondary sexual characteristics. The patient did not report any symptoms such as dysmenorrhoea, pelvic pain, or dyspareunia until three years ago when she noticed decreased menstrual blood flow and also only menstrual blood appeared upon exerting pressure on a specific part of the perineum along

with difficulty during intercourse. The patient is of slender build, with stable vitals and no systemic diseases. Her other bodily systems were within normal limits. Upon perineal examination, the external genitalia (labia majora, and minora) appeared normal. A septum was observed upon separating the labia majora just above the hymen, but no opening was identified from where the patient used to express menstrual blood. The cervix was not visible. Patient was asked to visit during her menstural cycle for re-examination to see the opening from which blood was draining and a pin point opening was noted. A transvaginal ultrasound showed normal uterus and normal adnexa along with small amount of fluid in uterus and vagina. No other urogenital congenital anomalies were found in the upper or lower abdomen ultrasounography. To confirm the diagnosis, an abdominopelvic MRI (Figure 1) was performed, revealing normal uterine and adnexal anatomy, with a well-formed cervix and vagina with slight fluid in vagina and uterus.

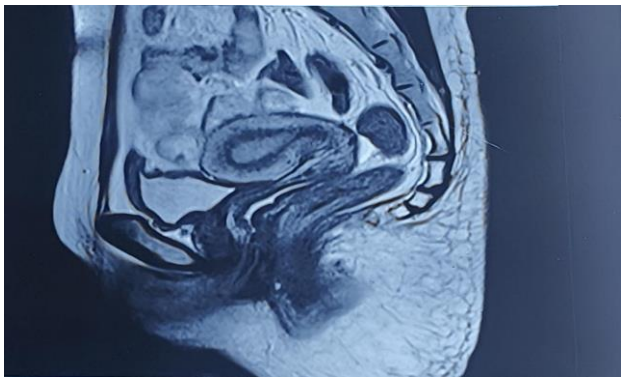

Figure 1: MRI Image showing normal uterus with maintained zonal anatomy. Both myometrium and endometrium reveal normal MR morphology with normal signal intensity. No definite focal or diffuse abnormality is detected. Both ovaries appear normal in size and signal intensity. Small amount of fluid collection seen in POD and vagina.

Patient is then planned for examination (Figure 2a) and excision during menstruation in operation theatre. Serial dilatation of a small orifice was performed using Hegar's dilator. Hysteroscopy is performed to look for upper vagina and cervix which were found to be normal. The septum was excised after ensuring no connection with adjacent structures. The vaginal length was approximately 9-10 cm, with a normal-appearing cervical ostium now visible after septal resection on per speculum. Margins was sutured in a purse-string fashion with delayed absorbable sutures (Figure 2b).

Following the procedure, a vaginal mold was put, created using a sterile condom filled with tampons to prevent vaginal stricture. Prophylactic antibiotics were administered to prevent vaginal infection. The patient was discharged on the second postoperative day after being instructed on how to use the vaginal mold daily and keep it in place overnight for the first two weeks. On follow-up, introitus was admitting 2 fingers, no vaginal discharge or strictures noted. Complete wound healing achieved in 6 weeks and sexual intercourse was allowed six weeks after the operation. Patient then conceived spontaneously and is now 5 months pregnant.

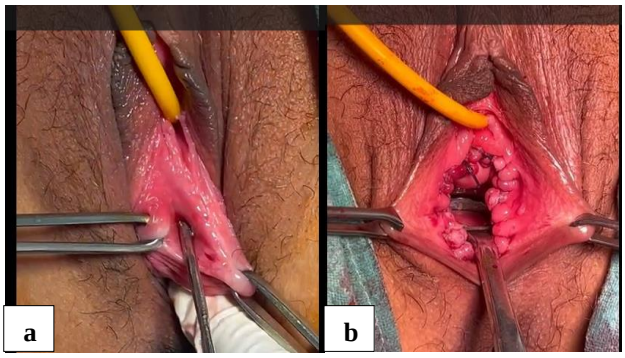

Figure 2: Preopertive and postoperative image of transverse vaginal septum (a) before surgery, and (b) after excision of septum.

DISCUSSION

A transverse vaginal septum is often caused by either the incomplete development of the vaginal plate or the failure of the paramesonephric ducts to connect with the urogenital sinus.[7]

Septae can present as either whole or partial, with the blockage occurring at various points along the vaginal canal. Transverse vaginal septae may be situated in the lower, middle, or upper segments of the vagina. While there is no universally accepted classification for septae, those located within 3 cm of the vaginal introitus are typically considered low vaginal septae.[8] Mid- and high septae are located at a distance greater than 3 cm from the introitus, with high septae positioned just beneath the cervical external os. The thickness of the septum typically measures less than 1 cm and may exhibit small eccentric or central perforations.[9]

Anomalies of the hymen and/or vagina may be discovered incidentally during a routine physical examination or imaging study for another purpose, or as a result of patient-reported symptoms. Patients experiencing symptoms may present with chronic pain, back pain, cyclical pain, amenorrhoea, irregular or prolonged menstruation, vaginal discharge, pelvic inflammatory disease (PID), dyspareunia, and/or infertility. Our patient presented with complaints of menstruation only on expression, as well as dyspareunia and infertility. Furthermore, abnormalities of the uterus and vagina have been associated with documented renal abnormalities, spinal deformities, cardiac issues, anorectal malformations and abdominal wall anomalies.

The diagnosis of transverse vaginal septum (TVS) is typically established based on a combination of clinical and radiological findings. An obstructive genital anomaly

should be considered in all young women who exhibit the classical symptoms of cyclical abdominal pain, primary amenorrhea and well developed secondary sexual characteristics. Imperforate hymen and TVS are the primary differential diagnoses, and these can be distinguished through physical examination. A bluish bulge often appears between the labia in the case of an imperforate hymen, which becomes visibly distended upon application of suprapubic pressure, a feature absents in cases of TVS.[10]

Ultrasonography (USG) is a cost-effective method for diagnosing suspected TVS or congenital outflow tract abnormalities. It can aid in determining the position and thickness of the septum, estimating the distance from the introitus and identifying any additional abnormalities that might exist.[11]

MRI is the preferred/gold standard method for confirming TVS cases. It provides details on orientation, site, distance from introitus, septal thickness, and potential genitourinary anomaly if any. It also helps rule out cervical agenesis.[12]

A thin septum can be primarily excised, followed by an end-to-end anastomosis of the upper and lower vaginal mucosa. A thick septum poses greater challenges for excision and repair, carrying an increased risk of re-stenosis and obstruction. Excision should only be carried out by surgeons well-versed in this procedure. Primary anastomosis can be made simpler if the upper vagina has been distended with menstrual blood which serve as a tissue expander to upper vaginal tissue available for the anastomosis. Moreover, the preoperative use of vaginal dilators may aid in thinning the septum and facilitating the anastomosis.[13]

A Z-plasty technique is well known procedure, can be used to prevent circumferential scar formation.[14] This technique involves making Z-shaped incisions in the skin to redirect tension lines and prevent contractures. By changing the orientation of the scars, the risk of tight, constricting scars is minimized, allowing for better healing and improved cosmetic outcomes. During the postoperative phase, patients require guidance on the proper utilization of vaginal dilators to facilitate the healing process and prevent the development of scar tissue and stenosis. The likelihood of re-stenosis is considerable. In an observational study conducted by Williams et al which involved 46 female patients who underwent surgery for TVS, it was noted that 11% (with a 95% confidence interval of 0.05-0.23) of the patients experienced obstruction, all of them had undergone abdomino-perineal vaginoplasty.[15] Additionally, 7% of the patients were diagnosed with vaginal stenosis, with two cases following vaginal resection and one following the abdomino-perineal approach. Subsequent follow-up examinations revealed that out of 23 patients, 22 were menstruating while one needed hysterectomy. Furthermore, 74% of the patients reported being sexually active, 35 experienced dyspareunia, and 36% had dysmenorrhea. Notably, there were seven reported pregnancies resulting in six live births. The obstetric management of unresected septa demonstrates considerable variability. It has been documented that approximately 36 pregnancies have occurred in individuals with transverse septa.[16]

In this patient, we did dilatation followed by resection of septum after ensuring proximity to adjacent structures. Patient is followed after 6weeks and she was doing well with no complaints. She has conceived spontaneously and is now 5 months pregnant.

CONCLUSION

Transverse vaginal septum is rare anomaly, detected mostly at menarche with complain of cyclical abdominal pain with hematometra or hematocolpos. But presentation can vary and hence careful history and examination is necessary. Sometimes microperforated septum gets occluded so it can also present with secondary amenorrhoea and later abdomninal mass due to hematocolpos and hematometra. So, physical examination of any patient is very important for proper diagnosis and treatment and it cannot be overlooked.

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