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Case Report

Congenital transverse vaginal septum - a cause of primary infertility

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Abstract

Congenital transverse vaginal septum is a malformation of the lower genital tract resulting from failure of canalization of the vagina during the development of an embryo. It is a common congenital abnormality of the lower female genital tract that usually presents with cryptomenorrhea. The location, extent of the vaginal septum and clinical presentation vary by case. It commonly presents as obstruction of menstrual flow with associated haematometria. We described a case of a 24 year old woman with congenital transverse vaginal septum, regular menstrual flow presenting with primary infertility of 3 years, in her second marriage and eventually had a successful pregnancy after surgical resection of the septum.

Keywords: *Transverse vaginal septum, congenital anormaly vagina, congenital anomaly infertility, primary infertility*

Abstrait

Le septum vaginal transversal congénital est une malformation du tractus génital inférieur résultant de l'échec de la canalisation du vagin lors du développement d'un embryon. C'est une anomalie congénitale commune du tractus génital inférieur de la femme qui se présente généralement avec une crypto-ménorrhée. L'emplacement, l'étendue du septum vaginal et la présentation clinique varient selon les cas. Il se présente généralement comme une obstruction du flux menstruel avec une hémato-métrie associée.
Nous avons décrit le cas d'une femme de 24 ans présentant un septum vaginal transversal congénital, un flux menstruel régulier présentant une stérilité primaire de 3 ans, lors de son deuxième mariage et ayant eu une grossesse réussie après une résection chirurgicale du septum.

Mots – clés : *septum vaginal Transverse, anomalie congénitale du vagin, anomalie d'infécondité congénitale, l'infécondité primaire*

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Introduction

Infertility is the inability of a couple to achieve pregnancy despite regular unprotected sexual intercourse at a frequency of least two to three times a week for more than 12months[1]. Primary infertility occurs when pregnancy has never been achieved. For pregnancy to occur, it is imperative for the reproductive tract of both the male and female to develop and function optimally. The causes of infertility may be due to male or female factors or a combination of both [2]. The female factor infertility may be due to hormonal imbalance, ovulatory factors, tubal factor, uterine, cervical and vaginal causes including structural abnormalities [2].

Congenital abnormalities of the genital tract occur as a result of a developmental malformation of the genital tract during intrauterine life arising from failure of Mmullerian fusion. A lower Mullerian fusion defect may result in a longitudinal or a transverse vaginal septum. The transverse vaginal septum as a structural abnormality of the vaginal may be partial or complete; and may cause varying degrees of obstruction of the lower genital outflow tract. Abnormalities of the genital tract may co-exist with other abnormalities of the urogenital system and other organ systems [3].

This case report showcases the rare presentation of transverse vaginal septum with primary infertility; demonstrates the importance of prompt detailed evaluation and intervention in the management of this patient with infertility-associated transverse vaginal septum.

Case report

Mrs. S. B. is a 24 year old married patent medicine seller who presented with a history of inability to conceive of 3 years duration despite adequate unprotected sexual intercourse 2-3 times per week. There was no history of galactorrhea, headache, blurring of vision, neck swelling, heat or cold intolerance. There was no history of abdominal pain, abdominal swelling, vaginal surgery, instrumentation, trauma, vaginal infection or history of insertion of caustic or corrosive substance.

She attained menarche at the age of 15 years and menstruates for 4 days in a regular cycle of 29 days; there was no menorrhagia or dysmenorrhea. She attained coitarche at the age of 17 years and there was a history of dyspareunia.

She is in her second marriage in a polygamous family setting. She is the second of two wives of a 41 year old automobile mechanic. Her current husband had children from the first wife. The first marriage was disrupted over the challenge of inability to conceive and was divorced by the first husband.

The physical examination revealed a healthy looking young woman, not pale, anicteric, acyanosed and no pedal oedema. The abdominal findings were normal. The speculum vaginal examination revealed a normal vulva, blind ending vagina with a transverse band of tissue occluding the upper vagina, vaginal fornices and cervix. There were two oval-shaped recesses at 9 and 12' o clock, measuring about 2cm each, a lax vaginal septum and posterior vaginal wall tissue; and there was no vaginal discharge. A bimanual digital vaginal examination showed a cervix palpable proximal to the vaginal septum, normal sized uterus and adnexae. An assessment of primary infertility due to a congenital transverse vaginal septum was made.

An examination under anaesthesia was done during her menstrual period. There was egress of menstrual blood from the aperture at 9'0clock position suggesting possible connection with the cervix. An abdominopelvic ultrasound revealed normal findings, bilateral normal kidneys with normal cortico-medullary differentiation and no evidence of hydro-nephrosis or hydro-ureters; and normal smooth walled bladder, no debris. The uterus was normal sized, retroflexed and both ovaries were normal.

The intravenous urogram revealed normal findings. Urinalysis was normal and Urine microscopy, culture and sensitivity yielded no growth of pathogens. The complete blood count was normal.

She had a surgical resection of transverse vaginal septum and vaginoplasty under regional anaesthesia. The intraoperative findings were vaginal length of about 8cm with a high transverse septum with two oval-shaped recesses (apertures) at 9 and 12' o clock position as shown in figure 1; redundant posterior vaginal wall mucosa, retroverted uterus of 10 weeks size and a nulliparous anterior cervix as shown in figure 2. We achieved complete resection of the septum and repair of the vaginal wall. The cervix was examined and the cervical os was patent.

She had a satisfactory post-operative period; she had antibiotics for five days, analgesics and daily vaginal dressing with vaginal mold. She healed satisfactorily. She commenced self vaginal dilation with vaginal dilator and was discharged on the 14th post-operative day.

She had two successful menstrual flows which were described as normal and lasted 4 days. She missed her menstrual period in the third month and a pregnancy test by serum B-hCG at five weeks was positive. The pelvic ultrasonography confirmed a viable intrauterine pregnancy at a gestational age of 6 weeks gestational age.

The pregnancy progressed normally with no complication and there was no contraindication to vaginal delivery. An obstetric ultrasound done at a gestational age of 38weeks revealed a live fetus with estimated fetal weight of 3.5kg in longitudinal lie and cephalic presentation. The vaginal examination revealed a capacious vagina with vaginal length of 8 cm, normal mucosa, supple and no vaginal scarring. The cervix was central, smooth, firm and uneffaced.

She fell into labour at a gestational age of 41weeks and 1 day and it lasted 8 hours. She was delivered of a live male neonate with a birth weight of 3.8kg.

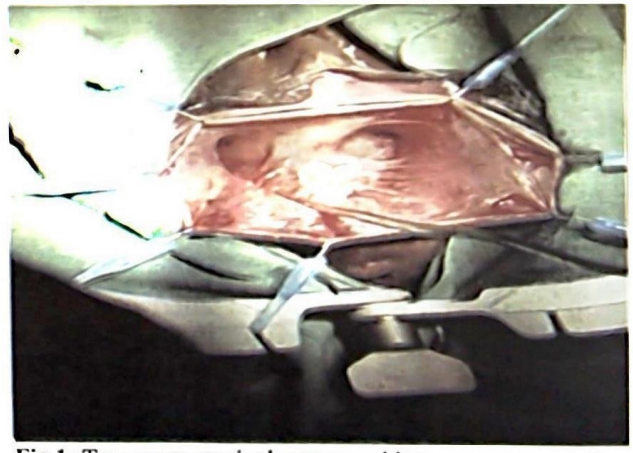

Fig.1: Transverse vaginal septum with two apertures and a stretchable vaginal septum

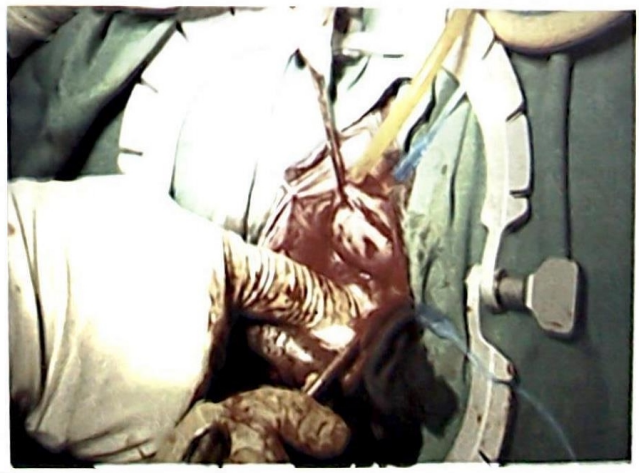

Fig. 2: Normal urethral opening with catheter in situ. Cervix with a patent cervical os after the excision of the transverse vaginal septum

Discussion

Mullerian duct anomalies are a spectrum of embryological defects affecting the genital tract. A vaginal septum is one of such defects and it occurs following a mullerian duct fusion defect or failure of recanalization during development. It may present as a longitudinal vaginal septum in the case of lateral fusion defect or a transverse vaginal septum in the case of a horizontal fusion defect or failure of recanalization of the tissue [4]. Transverse vaginal septum results from failure of fusion of the lower mullerian duct with the urogenital sinus or due to failure of recanalization of the tract after fusion [4].

The incidence of transverse vaginal septum varies from about 1:2,100 to 1:72,000 females [5, 6, 7]. The transverse vaginal septum presents as a tissue plane of varying thickness separating the upper and lower vagina. The thickness of septum ranges from 0.5 – 6 cm; thin septum is <1cm, thick septum ≥ 1cm. A septum may be located in the upper (46%), middle (40%) or lower vagina (14%) [7]. A septum in the vagina located <3cm from the vaginal introitus is low, 3-6cm is middle and >6cm from the vaginal introitus is a high transverse vaginal septum [8]. In this case, the septum was located in the upper third of the vagina, occluding the cervix and with two apertures; one located centrally and the other right lateral. The transverse vaginal septum as a structural abnormality of the vaginal may be partial or complete; causing varying degrees of obstruction of the lower genital outflow tract. A previous study documented imperforate septum in 61% of cases in the series and perforate septum in 39% of cases [8].

The common presenting complaints include amenorrhea, hydrometrocolpos, cyclical lower abdominal pain, swelling, haematocolpos and bulging vaginal mass in cases of complete obstruction of the outflow tract. In the case of partial obstruction, the condition may be asymptomatic and present as an incidental finding during antenatal care, labour/delivery [9, 10] and gynaecological vaginal examinations or during pelvic imaging. It may also present with symptoms such as dyspareunia, inability to have sexual intercourse or to insert tampons, primary infertility. The presentation of transverse vaginal septum with primary infertility is quite rare and has been documented by only a previous report. [11]

In the index case, the presentation was primary infertility of 3 years duration and a transverse vaginal septum was an incidental finding during vaginal examination on the first visit. The primary infertility complicated and disrupted the first marriage with the attending stigma of infertility and its sociocultural consequences on the affected women. [12, 13]

The presence of a perforate transverse vaginal septum and its location in the upper vagina, contributed to the late presentation of this patient and the absence of symptoms such as amenorrhea, cryptomenorrhea, inability to achieve sexual intercourse which may have necessitated earlier presentation in the hospital for evaluation.

Other abnormalities of the genital tract may co-exist with other abnormalities of the uro-genital system in cases of transverse vaginal septum [3]. Anomalies of the uterus, cervix, and renal anomaly have been found to co-exist with transverse vaginal septum. Others include coarctation of the aorta and atrial septal defect [3, 10, 14, 15]. There was no other congenital anomaly identified in this case.

The options of management depend on the location/ extent of the septum, size, and other associated anomalies. The vaginal, abdomino-perineal and laparoscopic approaches are options for the route of repair. [4]

This case was managed by successful resection of the transverse vaginal septum via a vaginal approach. Surgical resection of the septum healed satisfactorily and was followed by successful vaginal dilation using vaginal dilator. She resumed sexual intercourse; achieved a spontaneous conception two months after surgery and vaginal delivery of a healthy baby.

The role of a detailed clinical history and physical examination in routine clinical practice cannot be overemphasized. A thorough examination and investigation of all cases of infertility and other medical condition is important. The ordeal of primary infertility was terminated by a detailed vaginal examination that revealed a transverse vaginal septum which posed obstruction to influx of seminal fluid despite its being perforate.

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