SEPTATE UTERUS WITH BILATERAL TUBAL BLOCKAGE: A CASE REPORT AND LITERATURE REVIEW.

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ABSTRACT

Septate uterus is a form of congenital anomaly of the müllerian ducts. This anomaly of the female reproductive tract may be associated with various reproductive problems including infertility, recurrent miscarriages, increased risk of preterm delivery, abnormal fetal presentation, delivery by caesarean section, intrauterine fetal growth restriction, low birth weight, and perinatal mortality. Diagnosis of a septate uterus on imaging may be challenging due to its similarity with other congenital uterine anomalies. We present a case of septate uterus with bilateral tubal blockage in a young woman being evaluated for primary infertility who was referred for hysterosalpingography.

Keywords: Septate uterus, Mullerian ducts, Hysterosalpingography.

Introduction

The female reproductive tract arises from complex processes that involves differentiation, migration, fusion, and resorption of the mullerian ducts during embryogenesis. Anomalies of the mullerian ducts may arise from failure of any of these processes.[1]

The prevalence of congenital uterine anomalies varies, depending on the population and the diagnostic method. A prevalence of 5.5% in unselected populations, 8% in infertile women, 13.3% in those with miscarriages, and 24.5% in infertile women who also had a history of miscarriage has been reported.[1,2]

The septate uterus is the most common congenital uterine anomaly, accounting for 35% to 55% of all uterine anomalies, with a prevalence of 0.2–2.3% in women of reproductive age.[2,3] It occurs as a result of failure in the resorption of the utero-vaginal septum and is associated with the poorest obstetrical outcome with a fetal survival rate ranging between 6% and 28% and a spontaneous miscarriage rate >60%.[3,4] The utero-vaginal septum may extend to the internal os of the cervix giving rise to a complete septate uterus or may stop midway (subseptate uterus). Women with septate uterus may present with infertility, recurrent miscarriages, history of preterm delivery, abnormal fetal presentation, delivery by caesarean section, intrauterine fetal growth restriction, low birth weight, and perinatal mortality.

Imaging modalities such as ultrasonography, hysterosalpingography (HSG) and magnetic resonance imaging (MRI) play a vital role in the management of septate uterus.[5]

Case Presentation

The case is of a 25yr old female P_0^{+0} who is a Hausa student, and consented for the publication of this article. She presented to the general out-patient department (GOPD) of Jos university Teaching Hospital on account of inability to conceive. She has been married for about 6yrs but has never been pregnant. Her monthly menstrual cycle has been normal. She had been having recurrent foul smelling vaginal discharge and lower abdominal pain. No

history suggestive of polycystic ovarian syndrome, hyperthyroidism or hyperprolactinaemia was reported. She is not a known diabetic or hypertensive; however, a high blood pressure measurement was reported during one of her clinic visits. She does not consume alcohol nor smoke cigarette. She is from a monogamous setting with no history of change of spouse. Her husband is a 31year old trader who has never fathered a child before. He does not consume alcohol nor smoke cigarette. There was no family history of infertility or congenital anomalies. She had presented to different hospitals for evaluation where different investigations were carried out, but was told everything was normal except for a HSG which showed bilateral blocked fallopian tubes.

Her physical examination findings were unremarkable. Bi-manual pelvic examination showed a normal sized uterus, no cervical motion tenderness was noted. Speculum examination showed a normal vagina and cervix. Several investigations were requested for including a high vaginal swab (HVS) microscopy, culture, and sensitivity, Abdominopelvic ultrasound scan and HSG. Seminal fluid analysis (SFA) was also done for the husband. HVS done showed numerous pus cells and epithelial cells, Hemolytic streptococci specie, Gram negative bacilli and Candida albicans were also isolated. The SFA result showed Oligospermia with sperm concentration of 10million per mm^3, active mobile sperm cells were 10%, sluggish sperm cells were 40% and non-motile cells 50%.

She was then referred to the radiology department of Jos university teaching hospital for HSG. A speculum vaginal examination showed a single external cervical os and a single vagina. No vaginal septum was seen. A HSG was then carried out which showed two separate contrast outlined uterine cavities with two cervices with an acute angle separating the two uterine horns. Both Fallopian tubes were not demonstrated (Figure 1). An assessment of septate uterus with bilateral non patent tubes was made.

The patient later had a trans-abdominal and pelvic ultrasound scan which showed a normal sized uterus with a convex fundus on longitudinal plane (Figure 2) and two endometrial complexes with myometrial tissue separating them on transverse plane (Figure 3). The intra-abdominal organs including the kidneys were normal. No other congenital anomalies were seen. A final diagnosis of septate uterus with bilateral non patent tubes was then made.

With the findings from HVS, Abdominal ultrasonography, HSG and SFA, the couple was placed on medications and were subsequently referred from the out-patient department of Jos University Teaching Hospital to the Gynaecology Clinic of the same Hospital for further evaluation.
In the Gynaecology clinic, the husband was placed on Addyzoa and other multivitamins, while the wife was placed on antibiotics. The couple was then counseled for a possible septoplasty and assisted reproductive technology (ART) procedures due to the findings of bilateral non patent Fallopian tubes, Septate uterus and Oligospermia. As at the time of writing this report, the couple is yet to return to the Hospital for follow-up.

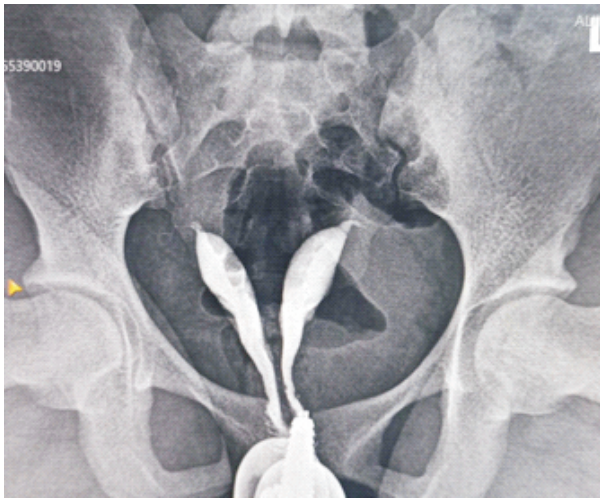

Figure 1: An anteroposterior hysterosalpingogram demonstrating two contrast outlined uterine horns and cervices separated by an acute angle. Both fallopian tubes were also non patent.

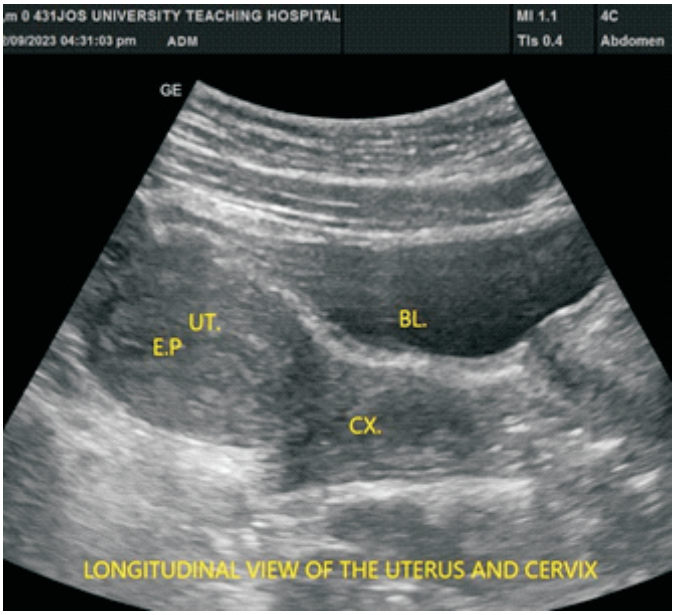

Figure 2: A grayscale transabdominal longitudinal sonogram demonstrating a normal sized uterus (UT) with a convex fundus. The endometrial plate (EP), the cervix (CX) and the urinary bladder (BL) were also demonstrated.

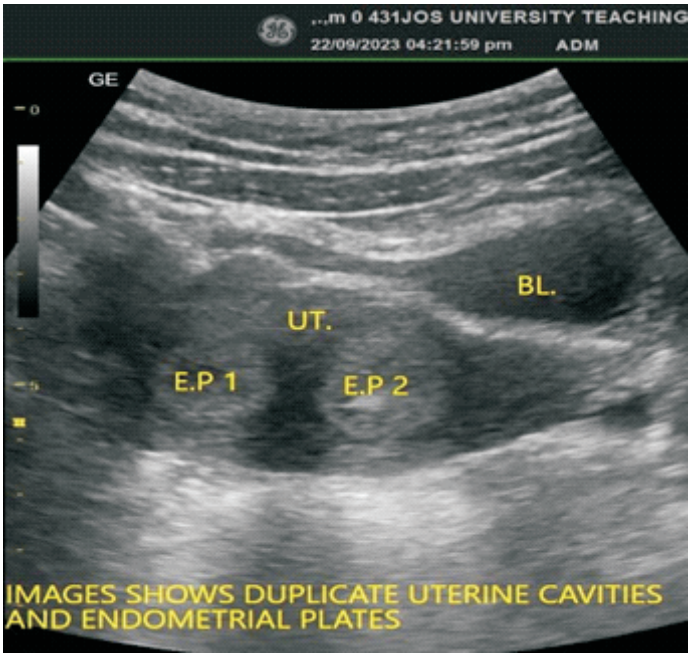

Figure 3: A grayscale transabdominal transverse sonogram of the uterus (UT) demonstrating two endometrial complexes (E.P 1 and E.P 2) separated by myometrial tissue.

Discussion

Mullerian duct anomalies (MDAs) are congenital defects of the female genital system that arise from abnormal embryological development of the Mullerian ducts. These anomalies may be due to failure of development, fusion, canalization, or reabsorption of the mullerian ducts which normally occurs between 6 and 22 weeks in utero. Most sources estimate an incidence of these abnormalities to be 4 to 7%, one of which was done by the American Fertility Society (AFS) who classified them into seven classes [7]. These anomalies include uterine hypoplasia / agenesis, unicornuate uterus, uterine didelphys, bicornuate uterus, septate uterus, arcuate uterus and diethylstilbesterol drug related uterine anomaly (T-shaped uterus) [7].

Septate uterus is the commonest uterine anomaly

with a mean incidence of 35% - 50% followed by bicornuate uterus (25%) and arcuate uterus (20%) .[6,8] It results from partial or complete failure of resorption of the uterovaginal septum after fusion of the paramesonephric ducts. It is a class V anomaly according to the American Fertility Society (AFS) .[7] This septum may be fibrous or muscular and depending on the stage when the resorption failure occurs, the septum can be complete or partial, however, the external contour of the uterus is usually normal .[3,6]

Septate uterus is the most common anomaly associated with reproductive failure (in 67%). This may include infertility, miscarriages, malpresentation, and preterm delivery. The clinical presentation ranges from being asymptomatic to complete reproductive failure. An incidental finding of a uterine septum may sometimes occur during the evaluation of infertility .[8,9]
This index patient was diagnosed to have septate uterus with bilateral tubal blockage in the course of evaluation for infertility, therefore, septate uterus may be an incidental finding in sub-fertile population.

Relevant imaging modalities in the diagnosis of mullerian duct anomalies are Ultrasonography, Hysterosalpingography (HSG) and Magnetic Resonance Imaging (MRI). The role of imaging is to help detect, diagnose, and distinguish surgically correctable forms of Mullerian duct anomalies from inoperable forms.

Pelvic ultrasound (US) is the first radiological investigation ordered in evaluation of Mullerian duct anomalies because it is simple, non-invasive, affordable, available and provides good information; however, it is highly dependent on the experience of the examiner .[5] In a septate uterus, there are two endometrial complexes separated by muscular or fibrous tissues (figure 3). Ultrasonography also has the advantage of outlining the uterine fundus in septate uterus, which is usually convex, flat, or slightly depressed (not >1.0cm in dept) .[3]

Hysterosalpingography provides information only about the uterine cavity and tubes and is used more in cases of infertility. It is an invasive, painful exam that doesn't evaluate the external contour and does not differentiate septate uterus from bicornuate uterus. Accuracy of hysterosalpingogram alone is 55% in the differentiation of septate from bicornuate uterus. An angle of less than 75° between the uterine horns is suggestive of a septate uterus, and an angle of more than 105° is more consistent with bicornuate uterus. Unfortunately, the majority of angles of divergence between the horns fall within this range, and considerable overlap between the two anomalies is noted .[3,7]

MRI is considered the gold standard in the evaluation of MDAs because it offers objective and reliable three-dimensional information about all the genital and peritoneal anatomy, except for the tubes. It can be used in all cases, including obstructive malformations.

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