Uterus Didelphys with Pregnancy

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Abstract

We report a case of 21 Yrs old female patient referred to the radiology department at Shree Birndra Hospital, to investigate primary infertility. She underwent hysterosalpingogram, both transabdominal & transvaginal ultrasound and MRI of the pelvis. The final diagnosis was Uterus Didelphys, which is a type of lateral fusion disorder of mullerian ducts. According to the American Fertility Society Classification of Mullerian Anomalies, Uterus Didelphys is a class III anomaly.

Key words: Hysterosalpingogram, Mullerian Ducts, Ultrasound and MRI Pelvis, Uterus Didelphys

Introduction

The human uterus is of paramesonephric origin. Varying degrees of partial or complete failure of fusion or atresia of the mullerian ducts lead to a corresponding series of congenital abnormalities of the uterus.Urinary tract abnormalities may coexist. Uterine Didelphys is a condition of lateral fusion defect where both the mullerian ducts fail to fuse causing presence of two hemi-uteri and cervices. Pregnancy in such a uterus causes various complications, like spontaneous abortion, preterm labour, abnormal presentation and increased incidence of caesarean delivery[1,2].

Case report

A 21 years old female married to a serving soldier for the last 3 years was referred to the radiology department at Shree Birendra Hospital to investigate primary infertility.She had reached menarche at the age of 13 yrs. She had regular 28 days menstrual cycle till two years ago, when suddenly her menstrual cycle became once in two months.The cycle is however, still regular with a 5 days menstrual period.

She underwent hysterosalpingogram as the first investigation. On direct inspection during the procedure, there was a septum partially dividing the vagina at the vault.The uterus was cannulated using a foley's catheter and contrast was injected using a 20 ml syringe. The right half of the uterus and the right fallopian tube was outlined and a peritoneal spill on the right side was demonstrated.The fallopian tube on the left side was however not outlined nor was the peritoneal spill observed. The procedure with cannualisation of the left side was not repeated immediately because there was contrast already present within the peritoneal cavity which would make the images sub-optimal.

The patient then underwent an abdominal followed by a transvaginal ultrasound examination of the pelvis. The transvaginal scan clearly defined and delineated the separate endometrial cavities upto the cervix. However, separate cervix could not be clearly visualized on the ultrasound scan.

She underwent MRI as the next form of investigation. A standard MRI scan of the pelvis as per the hospital protocol with selected thin cut slices through the uterus in axial, coronal and sagittal T2W images was performed. This clearly demonstrated a normal sized uterus with two separate endometrial cavities and separate cervices. The vaginal duplication could not however be discerned on the MRI images.The septum at the vaginal vault had already been confirmed on direct visualizaton during the HSG.

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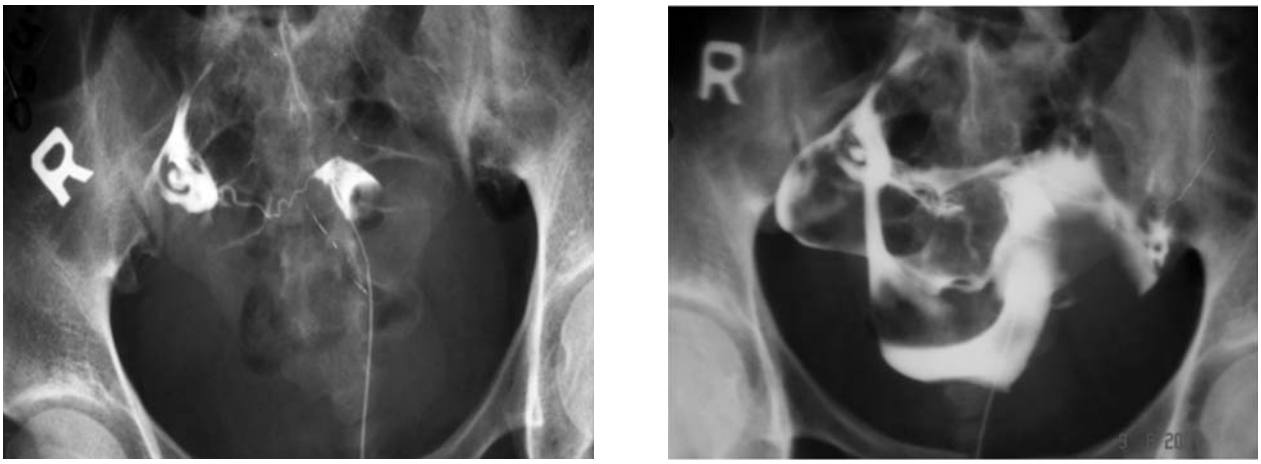

Fig 1: Hysterosalpingography demonstrating contrast within Rt endometrial cavity of Rt Hemiuterus and Rt Fallopian Tube with free peritoneal spill.

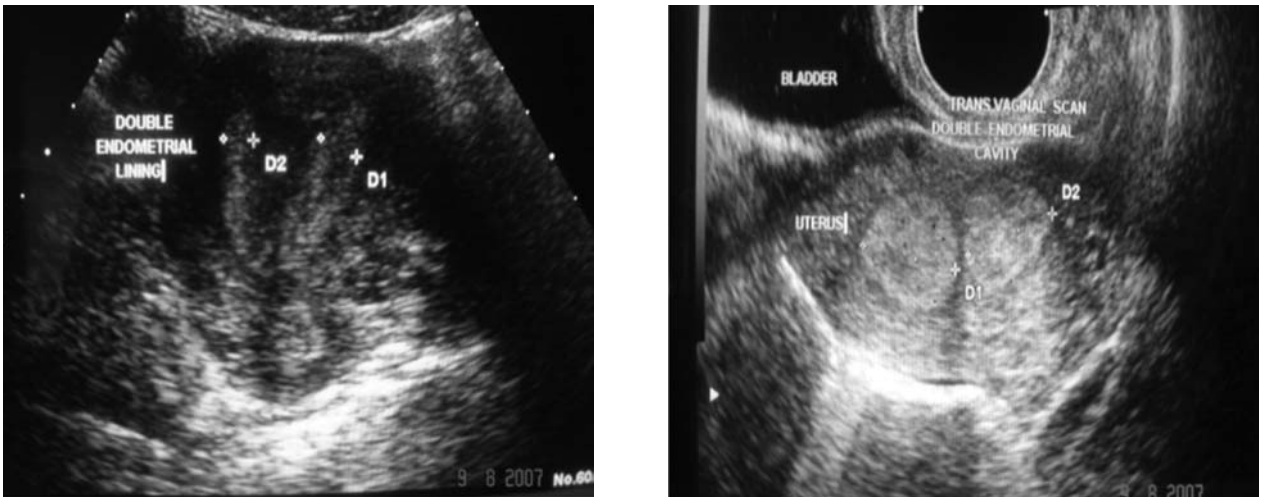

Fig 2 : Transabdominal and Transvaginal Ultrasound showing two separate endometrial cavities

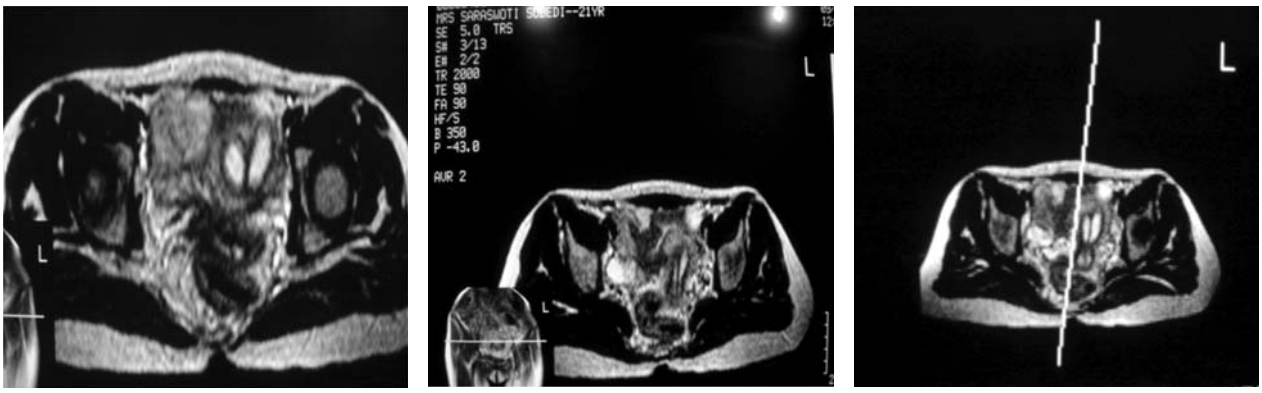

Fig 3: MRI Pelvis clearly demonstrating two separate endometrial cavities and cervices.

Follow Up

The lady conceived successfully with a gestation sac and a single, viable foetus seen within the endometrial cavity of the Rt Hemi-uterus. The pregnancy was closely monitored and she gave birth to a healthy baby girl by normal delivery.

Discussion

Mullerian anomaly rate is reported between 0.1-1% in the general population with significantly higher rates associated with infertility and reproductive wastage (2,4). Full-term pregnancies have occurred in patients with forms of bicornuate, septate, or didelphys uteri.

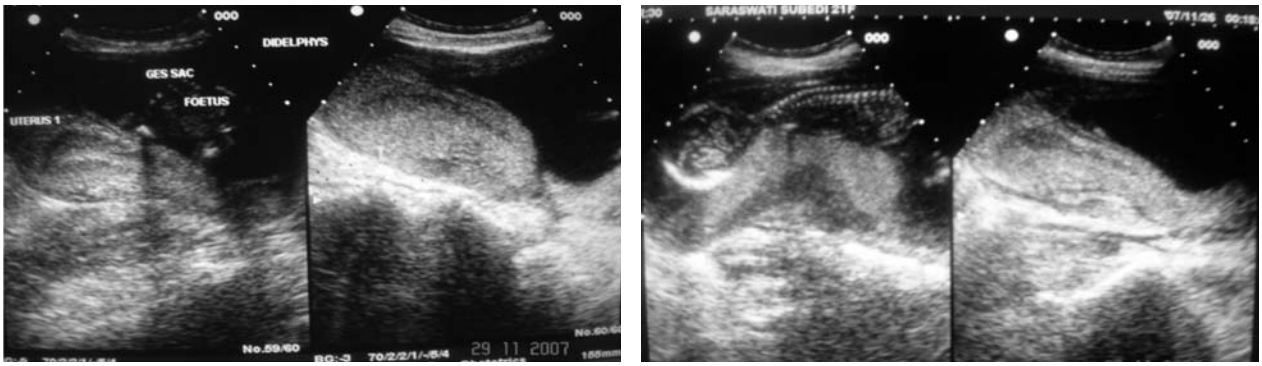

Fig 4: Normal developing Foetus in the Right Hemi-uterus

Patients with müllerian duct anomalies are known to have a higher incidence of infertility, repeated first trimester spontaneous abortions, fetal intrauterine growth retardation, fetal malposition, preterm labor, and retained placenta. The role of imaging is to help detect, diagnose, and distinguish surgically correctable forms of müllerian duct anomalies from inoperable forms.

Uterus didelphys represents a uterine malformation where the uterus is present as a paired organ as the embryogenetic fusion of the mullerian ducts failed to occur. As a result there is a double uterus with inevitable presence of two separate cervices, and is usually associated with double vagina as well. Each uterus has a single horn linked to the ipsilateral fallopian tube that faces its ovary. A longitudinal or transverse vaginal septum may be noted as well. Since each horn is almost a fully developed uterus, patients have been known to carry pregnancies to full term. Didelphus uteri have the best pregnancy outcomes of the uterine anomalies and have best prognosis so surgery is rarely necessary. It is believed that this may be because they have better blood flow. Women with a uterus didelphus have a 55 -65% fetal survival rate with a 25 - 45% rate of preterm delivery. Associated defects may affect the vagina, the renal system, and less commonly, the skeleton. A specific association of uterus didelphys, unilateral hematocolpos and ipsilateral renal agenesis has been described[3].

While unicornuate uterus was reported to have the poorest fetal survival, the didelphys uterus was believed to have 23% abortion rate and a bad obstetric outcome[2,5].

Uterus Didelphys is less common than other uterine malformationssuch as arcuate uterus, septate uterus, and bicornuate uterus. It has been estimated to occur in 1/3,000 women[6].

A pelvic examination will typically reveal a double vagina and a double cervix. Investigations are usually prompted on the basis of such findings as well as when reproductive problems are encountered. Helpful techniques to investigate the uterine structure are transvaginal ultrasonography and sonohysterography, hysterosalpingography, MRI, and hysteroscopy. More recently 3-D ultrasonography has been advocated as an excellent non-invasive method to evaluate uterine malformations[7].

Uterus didelphys is often confused with a complete uterine septum. Often more than one method of investigation is necessary to accurately diagnose the condition. Correct diagnosis is crucial as treatment for these two conditions is very different[8]. Whereas most doctors recommend removal of a uterine septum, they generally concur that it is better not to operate on a uterus didelphys.

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