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Uterus Didelphys; Term Pregnancy With Breech Prsentation In Right Horn – An Incidental Finding

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ABSTRACT
INTRODUCTION
Mullerian duct anomalies are congenital anomalies of the female genital tract arising from abnormal embryological development of the mullerian ducts. Uterus didelphys, also known as a duplicated uterus is one of the least common amongst MDAs. Pregnancy in a uterus didelphys is an uncommon; the incidence varies from 1 in 1500 to 1 in 142000 pregnancies worldwide.
CASE REPORT
This report discusses a case of didelphys uterus that successfully conceived, carried her pregnancy to term, and delivered by caesarean delivery without any significant complications
DISCUSSION
Diagnosis of Mullerian anomalies is usually suspected from clinical case presentation and confirmation is by imaging modalities. Management in patients with a double uterus may need special attention during pregnancy, as premature birth and malpresentations are common.
CONCLUSION
Prompt and accurate diagnosis of uterine malformations and appropriate surgical interventions are essential to prevent complications and provide the best possible pregnancy outcome.
KEY WORDS: *Mullerian duct anomalies, Didelphys uterus, Pregnancy, High risk pregnancy*

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I.INTRODUCTION

Mullerian duct anomalies are congenital anomalies of the female genital tract arising from abnormal embryological development of the mullerian ducts. These abnormalities can include failure of development, fusion, canalization, or reabsorption, which normally occurs between 6 and 22 weeks in utero. Most sources estimate an incidence of these abnormalities to be 0.5 to 5.0% in the general population [1 – 4]. Septate uterus is the commonest uterine anomaly with a mean incidence of ~35% followed by bicornuate uterus (~25%) and arcuate uterus (~20%) [4]. The most recent classification system for the different types of Mullerian duct abnormalities is by American Society of Reproductive Medicine in 2021 **(Figure 1)**

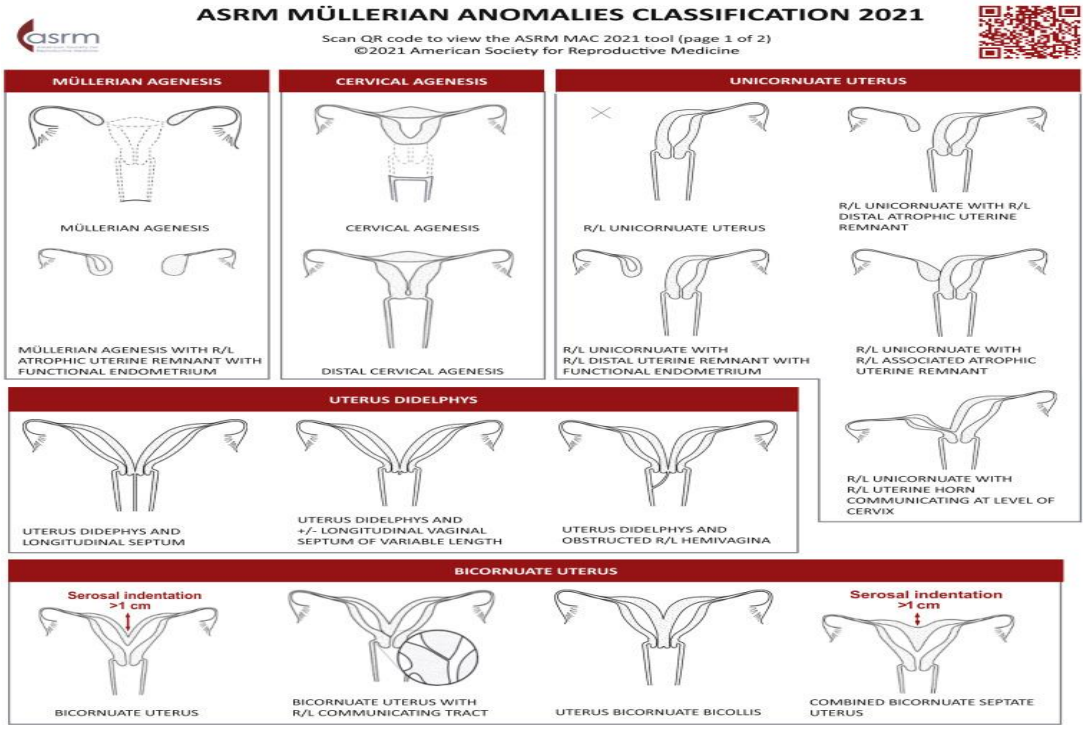

FIGURE 1 ASRM 2021 CLASSIFICATION OF MULLERIAN ANOMALIES

Uterus didelphys, also known as a duplicated uterus is one of the least common amongst MDAs. This anomaly is characterized by the presence of two endometrial cavities, each with a uterine cervix. Individual horns are fully developed and normal in size. Each hemi uteri is associated with one fallopian tube. The vagina may be single or double [5-6].

Pregnancy in a uterus didelphys is an uncommon; the incidence varies from 1 in 1500 to 1 in 142000 pregnancies worldwide. Pregnancies in a functional hemi-uterus originating from a single Mullerian duct (one horn of uterus didelphys, unicornuate unicollis) have a better prognosis (45%) with regard to the fetal wastage [7]. Of the major uterine anomalies, the uterus didelphys has the best reproductive prognosis due to the presence of collateral connections between the two horns which improves the blood supply. Pregnancies occurring in a didelphys uterus present with malpresentations and preterm labour though there may not be any menstrual or coital difficulties.

This report discusses a case of didelphys uterus that successfully conceived, carried her pregnancy to term, and delivered by caesarean delivery without any significant complications.

II.CASE REPORT

A 23 years old, primi-gravida, whose gestational age by date from reliable LMP was 38 weeks and 3 days presented in emergency labour room after being referred from a peripheral hospital for decreased fetal movements. Patient had spontaneous conception. Her antenatal care (ANC) follow up was at private clinic during which she had ultrasound examination twice both of which reported breech presentation and normal fetal biometry but no other uterine pathology identified. Patient had uncomplicated antenatal care and did not give any history of signs of threatened abortion or signs of threatened preterm labour. Her routine ANC investigations and vital signs remained within normal limits. She reported menarche at the age of 13 years. Her menses was regular and there was no history of dysmenorrhea or dyspareunia.

On general examination Patient was not anaemic, pulse rate 78/minutes, BP 110/80 mm of Hg in left arm supine position. CVS and Respiratory system were normal. On per abdomen examination uterus corresponds to 39 weeks of gestational age, breech presentation, left sacro anterior, fetal heart rate- 140 bpm, uterus contractions were 3 in 10 min and each contraction lasting for 10-15 second. There was 14 weeks sized right side smooth mass next to the uterus which seems to arise from the pelvis. On per vaginal examination, cervix 80% effaced, 1.0 cm dilated and it was footling breech presentation. The fetal heart tracing was category one, showing a fetal heart rate of 150 at baseline, moderate variability, with accelerations and no decelerations. She also had an ultrasound scan report done on the same day showing term breech presentation. Scan had not mentioned uterus didelphys. She was posted for caesarean section in view of primigravida with footling presentation in labor.

Abdomen was opened by Pfannenstiel's incision and intra operatively it was identified that there was one horn of the uterus on right side with a fallopian tube and ovary and with a single fetus in breech presentation. On the left side, was the non-pregnant uterus of about 12 weeks size lying posterior to the pregnant uterus. The non-pregnant uterus had the left fallopian and left ovary **(Figure 2).** Both hemi uteri had single cervix opening into single vagina. The right uterine body revealed a reactionary endometrial thickening. A lower segment incision was taken on the right dominant horn and an alive male baby of 3.1kg was extracted. There was a single placenta in the right uterine horn. Both the uterine cavities were explored and were found to be separate Both ovaries and tubes appeared healthy Uterine incision was sutured Haemostasis was achieved and abdomen was closed in layers. Patient had an uneventful intra and post-operative period. On 4th post-operative day, abdominal ultrasound KUB was done and no renal pathology was identified. The mother and baby were discharged on 6 th post-operative day in satisfactory condition.

FIGURE 2 INTRAOPERATIVE PICTURE SHOWING RIGHT HEMI UTERUS(Stitched) AND LEFT HEMI UTERUS.

III.DISCUSSION

Mullerian anomalies are among a spectrum of disorders affecting the genital and urinary system as they both share a common embryological origin. The classification widely accepted is the that of the American fertility society and the clinical embryological classification by Acien and colleagues [8-9].

TABLE 1: American Society for Reproductive Medicine classification.

Class	Classification
Class I	Agenesis or hypoplasia – (a–e) (vaginal or cervical or fundal or tubal or combined)
Class II	Unicornuate – (a–d) (communicating horn or non-communicating horn or no cavity or no horn)
Class III	Uterine didelphys
Class IV	Bicornuate uterus (a and b – Complete or partial)
Class V	Septate uterus (a and b – Complete or partial)
Class VI	Arcuate uterus
Class VII	Diethylstilboestrol related

Didelphys uterus occurs due to the complete non-fusion of two para-mesonephric ducts. All patients with uterine didelphys usually present with a longitudinal vaginal septum and rarely without a vaginal septum. This was a deviation from the norm as the index patient did not present with a vaginal septum.

Mullerian anomalies prevalence is exactly unknown. But recent study shows it is 0.1 to10%. The incidence of these anomalies is not easily determined as patients do not normally present except when symptoms heralds. Using imaging modalities to determine the incidence of Mullerian anomalies has also shown a divide and a bias in certain women presenting with symptoms and these imaging modalities such as hysteroscopy or hysterosalpingogram tend to overemphasize the incidence. Also, there is a variation in incidence in fertile and infertile women and in women who present with first and second trimester miscarriages and recurrent miscarriages.11-13. The prevalence of uterine didelphys has been cited as 1 in 2000 women in literature [10].

Diagnosis of Mullerian anomalies is usually suspected from clinical case presentation and confirmation is by imaging modalities. Several imaging modalities have been employed ranging from 2D to 3D ultrasound scan and MRI [11]. Ultrasound provides an invaluable resource in delineating the urogenital system. This can be transvaginal, transabdominal or transperineal [12]. Magnetic resonance imaging has become the gold standard in the diagnosis of uterine anomalies as it is very sensitive and specific and very relevant in defining the different forms of uterine anomalies involving uterine horns and renal anomalies [13]. Other modalities that have also proven to be helpful include, hysterosalpingogram, hysteroscopy and laparoscopy [14].

Incidence of singleton pregnancy in uterine didelphys is 1 in 3000, twin gestations is 1 in 5 million, and of triplets in uterine didelphys is 1 in 25 million. The didelphic uterus, because of reduced volume in each duplicated segment, has a poor reproductive outcome with a 20-30% chance of carrying pregnancy to term [15,16]. Heinonem reported a breech presentation rate of 43% and a caesarean section rate of 82% in his case report of 26 cases of women with uterine didelphys [10]. On the contrary others have noted that pregnancy and livebirths are less likely in women with didelphys uterus. Raga and associates noted that women with uterine didelphys have the least likelihood of having term deliveries compared to women with other Mullerian anomalies [17]. This has also been emphasised by Acien in his publication of reproductive performance in women uterine malformation. Ludmir et al observed that when high-risk obstetric intervention was used, more pregnancies from a didelphys uterus reached term and the foetal survival rate was higher than in the bicornuate and septate groups [18].

A didelphys uterus has been shown in many case reports to occur as a part of a syndrome, more specifically known as Herlyn-Wernes-Wunderlich (HWW) syndrome, also known as Obstructed hemivagina and ipsilateral renal anomaly (OHVIRA). In case of single pregnancy in uterus didelphys, literature shows the right hemi uterus having pregnancy predominantly. In uterus didelphys, non-pregnant hemi uterus is also subjected to hormonal influences as the pregnant hemi uterus and it remains as a pelvic organ posterior to the pregnant hemi uterus and hampers delivery of the fetus.

Complications of pregnancy such as foetal growth restriction, preterm births, malpresentation, abruption, retained placenta, operative births been noted in patients with Mullerian anomalies [17]. These complications are thought to be due to either a reduction in the mass of the uterine myometrium, aberrant or abnormal blood flow within the uterus or cervical insufficiency. Christos et al in their metanalysis of clinical implications of uterine anomalies stated that women with congenital uterine anomalies were more likely to have preterm births and malpresentation. The spontaneous abortion rates are estimated at 43%, the premature birth rate is approximately 38% and the fetal survival rate is approximately 54% patients with uterus didelphys making it as a high risk group and deserve a particular prenatal care [19]. Body of literature on didelphys uterus, although limited, generally shows that it has better pregnancy outcome, as compared to other anomalies. However, Acien's prospective observational study of reproductive outcome of females with different uterine anomalies in comparison to a normal uterus found the rate of term delivery for a didelphys uterus significantly lower than normal uterus group. Grimbizis et al also confirmed this conclusion in a review on clinical implications of uterine malformations [20].

Frank breech is most frequent abnormal presentation in uterine didelphys. Management in patients with a double uterus may need special attention during pregnancy, as premature birth and malpresentations are common. Caesarean section was performed in 82% of patients with uterine didelphys. Other complications of pregnancy are cervical incompetence, PPH, uterine rupture.10 As far as mode of delivery in patients with uterus didelphys, opinion is divided into normal vaginal delivery or elective caesarean section. Vaginal delivery has been accomplished merely by excision of vaginal septum. Because of high incidence of abnormal presentations and cervical incompetence, most of the people prefer caesarean section.

IV.CONCLUSION

The didelphys uterus is a very rare Mullerian duct anomaly with varying obstetrical and gynaecological outcomes. The ability to conceive remains a debatable issue as well. It can have silent clinical presentation prior to and during pregnancy and thus uterus didelphys belongs to high-risk group with increased complications. Though there is a high incidence of complications associated, early detection, good antenatal care, proper counselling and timely intervention helps in achieving favourable outcomes by reducing the complications.

Prompt and accurate diagnosis of uterine malformations and appropriate surgical interventions are essential to prevent complications and provide the best possible pregnancy outcome. Overall, there is a scarcity of literature on the didelphys uterus at the moment. As a result, further research is needed to better understand the reproductive and gestational outcomes so that gynaecologists may provide appropriate advice and treatment to their patient.

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