Case Report

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(ISSN Online:2229–3566, ISSN Print:2277–4343)

UNEVENTFUL PREGNANCY IN DIDELPHYS UTERUS DELIVERED THROUGH CAESAREAN SECTION: A CASE REPORT

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Received on: 05/09/23 Accepted on: 23/10/23

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DOI: 10.7897/2277-4343.1513

ABSTRACT

Didelphys uterus, also known as "double uterus," is a rare congenital anomaly characterised by the presence of two separate uteri, each with its cervix. This happens as a result of the Müllerian duct embryonic fusion failing. The chance of having a pregnancy in one of the uteri without having any complications during pregnancy is relatively low. We are reporting a case of a 24-year-old primigravida woman with a didelphys uterus. The patient presented with the complaint of leaking per vaginum at term gestation in hospital IPD. She had undergone ultrasonography many times during her pregnancy, but no ultrasound finding suspects any congenital anomaly of the uterus. During the ninth month of gestation, when the patient came with leaking per vaginal, two vagina were discovered with a thick longitudinal vaginal septum, so she underwent an elective caesarean section due to the potential risks associated with vaginal delivery and under the suspicion of two separate uteri. During caesarean section, uterus didelphys was confirmed as two uteri with separate fallopian tubes and ovary; one was gravid, and another was non-gravid. The management of this condition requires careful planning and coordination among the multidisciplinary team to ensure a successful and safe outcome. The present case report reveals her history, diagnostic workup, caesarean delivery, and management outcome.

Keywords: Didelphys uterus, congenital anomalies of uterus, Mullerian duct malformation, pregnancy, caesarean section

INTRODUCTION

The aberrant development, fusion, or resorption of the Müllerian ducts throughout foetal life results in uterine abnormalities. About 4.3% of fertile women and approximately 3.5% of infertile women have reproductive organ anomalies, with the uni-cornuate uterus being the most common uterine anomaly associated with infertility. The bicornuate uterus (about 25%) and septate uterus (about 35%) are the most prevalent reproductive organ disorders.[1] Contrarily, uterine didelphys, which make up 10% of all Müller's duct abnormalities, is among the rarest.[2] Between 12 and 16 weeks of foetal life, Müller's ducts begin to fuse partially, causing uterus didelphys. This is followed by a dilatation of the uterine horns, cervix, and, very frequently, the vagina.[3]

Didelphys uterus occurs in approximately 1 in 1,000 to 1 in 30,000 women[4], leading to the development of two distinct uterine cavities, each with its own cervix and sometimes a double vagina as well. Most cases of didelphys uterus are asymptomatic, and the condition often goes unnoticed until a woman reaches reproductive age or becomes pregnant or delivered vaginally. The condition may present with unique challenges in obstetric management. However, some women may experience symptoms such as dysmenorrhea, dyspareunia, and abnormal menstrual bleeding.[5] A uterine abnormality raises the chance of obstetric problems, necessitating routine checkups throughout pregnancy. When compared to a normal uterus, there is a higher risk of spontaneous miscarriage, preterm births, malpresentation and a lower rate of live births.[6] Here, we describe a case of didelphys uterus in a patient delivered through caesarean section.

Patient Information

A 24-year-old primigravida patient who was a homemaker presented in the hospital IPD at her 40th week of gestation with leaking per vaginal and mild backache on 5-7-2023. Leaking per vaginal present since 2 am morning on 5/7/2023 and mild backache since 9m on 4/7/2023. She was a registered patient in OPD of Ayurveda Hospital and did her ANC visit routinely with Ayurvedic ANC protocol only up to the 8th month. Her whole antenatal period was uneventful. But when she was suggested for pelvic examination after the 37th week, she discontinued her visit due to fear. Her LMP was 29/9/2022. She had a short menstrual cycle with 5-6 days of heavy bleeding and 22-24 days interval and no complaint of dysmenorrhea. She has a history of dyspareunia occasionally. Her married life was two years, and she conceived naturally. The patient was an infertility-treated child of her

parents. Rather than this, no relevant past medical, surgical or family history was there.

Informed Consent: Written permission for this case report publication has been taken from the patient.

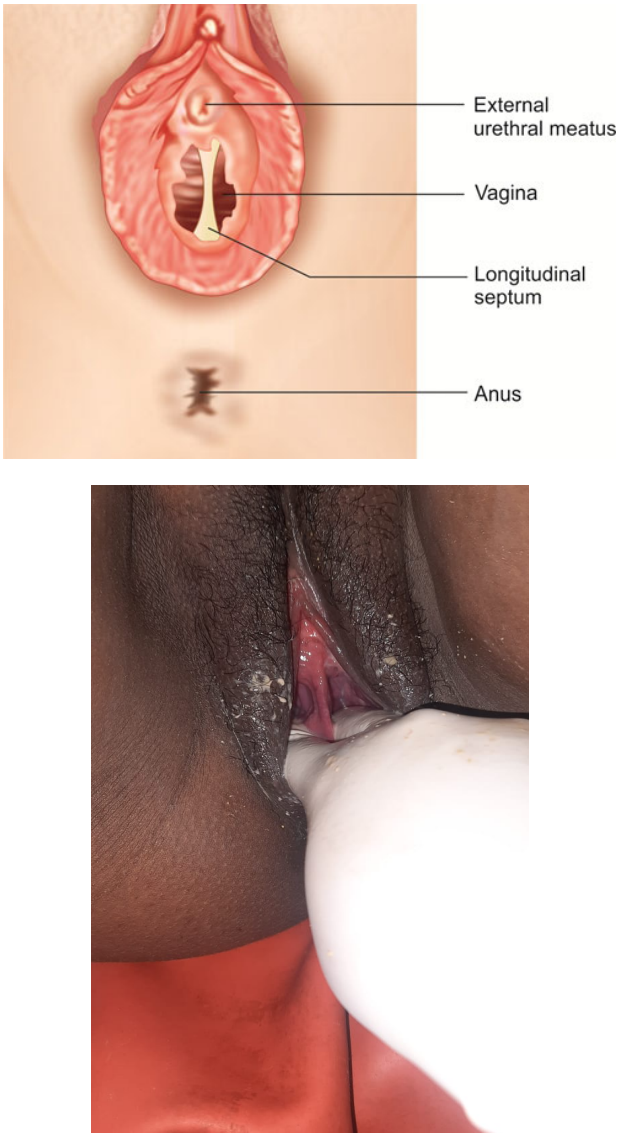

Figure 1: Vaginal septum

Clinical Findings

At the time of admission, on her general examination, her BP was 110/70 mmHg, PR was 88/min, she was afebrile, her height was 4 feet 11 inches, and her weight was 54 kg. She does not have a pallor conjunctiva and also didn't have pedal oedema. On inspection during per abdominal examination, striae gravidarum was observed, and on palpation, lie was found longitudinal, fundal height at term with head presentation and right occiput-anterior (ROA) position. Head was found just engaged, at 2/5th above the brim. Fetal heart sounds are heard clearly below the umbilicus on the right side. On inspection of the vulva, no abnormality was found. But on per vaginal examination, a thick longitudinal vaginal septum was found with well-defined two separate vaginal canals (Figure 1) and two cervical openings. The left cervix was found closed while the right cervix was dilated up to 2 cm with 20-30% effacement, and the fetal head was palpated at -3 station with membrane intact. The Bishop score of 3 points was cervical position-middle, cervical consistency-medium, cervical effacement-20-30%, cervical dilatation-2 cm, fetal station-3.

The patient underwent ultrasonography four times during her antenatal period, but no ultrasound revealed any congenital malformation of the uterus and adnexa. The first ultrasound on 29/12/22 revealed a single live fetus of 13 weeks 3 days gestation with nuchal translucency 1.75 mm and nasal bone present. The second ultrasound was an anomaly scan done on 9/2/2023, which revealed a single live fetus of 19-20 weeks gestation with no sonographically detectable congenital anomalies in a placental location on the left lateral wall. The third ultrasound suggested a live fetus of 29-30 weeks gestation, cephalic presentation, 1450 gm estimated fetal weight with adequate liquor and placental location on anterior upper segment; the last ultrasound on 14/6/2023 suggested a single live fetus of 35-36 weeks gestation, cephalic presentation with 9-10 cm AFI, 2904gm estimated fetal weight and placental location on anterior upper segment grade third and single loop of cord around neck.

On haematological examination, her blood group was O+; on 14/6/2023, Haemoglobin was 12.1 gm%, CBC finding was normal, HBsAg-HIV-VDRL were negative, LFT-RFT were within normal limits, Prothrombin time was 11.9 sec, INR was 1.04, DIPSY was 85.0 mg/dl and no albumin and sugar present in urine.

Diagnostic Assessment

No laboratory or imaging findings of the patient suspect any malformation and the whole pregnancy period was also uneventful, but per-vaginal examination revealed a thick longitudinal vaginal septum with two separate vaginal canals and two separate cervices. The diagnosis was based on the clinical findings, not imaging or laboratory investigations. The patient was suspected of having some Müllerian duct abnormality, but the exact diagnosis regarding the anomaly, internal as well as external architecture of the uterus, must be visualised.[7] The suspicious might be a didelphys uterus or bicornuate uterus with a rudimentary horn.

Therapeutic Intervention

Women with congenital uterine anomalies usually have a higher incidence of complications during pregnancy and delivery. Early diagnosis and management of congenital malformation of the uterus can improve obstetric outcomes.[8] Normal vaginal delivery with a thick longitudinal vaginal septum can tear the septum, leading to heavy and uncontrolled bleeding postpartum. Prolonged labour due to in-coordinate uterine contractions, obstructed labour due to obstruction by the nongravid uterus or rudimentary horn, retained placenta and postpartum haemorrhage are also common obstetrical complications in uterine anomalies.[9] So decision regarding the mode of delivery was taken after explaining the consequences of normal vaginal delivery to patients and attendants. Bishop scoring was also low at the time of admission with no contractions, and there was a single loop of cord around the neck of the fetus as per ultrasonography, so a lower segment caesarean section under spinal anaesthesia was done.

Table 1: Timeline of the case

Visit date	POG	Observation and remark
12/12/2022	13 weeks	On the first visit to the hospital, A routine ANC workup was done (BP-110/70 mmHg, PR- 76/min, weight – 45 kg, No pallor, No pedal oedema, Hb – 11.6 gm%, all routine investigations found normal), but the patient didn't allow for per vaginal examination.
9/2/2023	19 weeks 1 day	On the second visit to the hospital, A routine ANC workup was done (BP-100/70 mmHg, PR- 74/min, weight – 46 kg, No pallor, No pedal oedema, Normal anomaly scan).
13/4/2023	28 weeks 1 day	On the third visit to the hospital, A routine ANC workup was done (BP-100/60 mmHg, PR- 88/min, weight – 50 kg, No pallor, No pedal oedema, Hb – 11.3 gm%, all routine investigations found normal).
24/4/2023	29 weeks, 5 days	On the fourth visit to the hospital, A routine ANC workup was done (BP-100/60 mmHg, PR- 88/min, weight – 50 kg)
8/5/2023	31 weeks, 5 days	On the fifth visit to the hospital, A routine ANC workup was done ((BP-100/70 mmHg, PR- 84/min, weight – 51 kg)
15/6/2023	37 weeks 1 day	On the sixth visit to the hospital, A routine ANC workup was done (BP-120/70 mmHg, PR- 88/min, weight – 52 kg, No pallor, No pedal oedema, Hb – 13.7 gm%, all routine investigations found normal). Advised for pelvic assessment in next visit.
16/6/2023-4/7/2023	-	Not visited hospital
4/7/2023 9 pm	39 weeks, 6 days	Mild pain in the abdomen started
5/7/2023 2 am	40 weeks	Leaking started
5/7/2023 9 am	40 weeks	Visit in hospital, examination done (Per abdomen, per vaginal examination) vaginal septum found with two separate vaginal canals and two cervical openings, suspected for Didelphys uterus.
5/7/2023 11:22 am	40 weeks	LSCS was done, and a live male child of 2.65 kg was extracted as a vertex presentation with a single loop of cord around the neck. After suturing the uterus, another healthy non-gravid uterus was found with a tube and ovary, and no other abnormalities were seen.
10/7/2023	6th postoperative day	After cutting sutures, the patient was discharged with postoperative and purpureal advice.

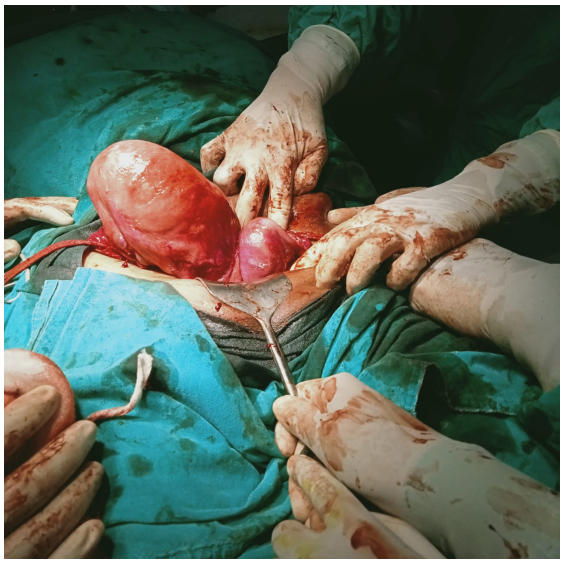

Figure 2: Didelphus uterus during CS

Follow-up and Outcomes

The patient delivered an alive male child of weight 2.65 kg as vertex presentation with a single loop of cord around the neck, and the Apgar score was 9-10 points. During caesarean section, uterus didelphys was confirmed: two widely separated uteri with separate fallopian tubes and ovaries; one was gravid, and another was a non-gravid horn. (Figure 2) There were no complications during the postpartum period. The patient was discharged on the sixth postoperative day. She was in good health and had no complaints at the 4–6 week follow-up visits.

DISCUSSION

Uterus didelphys is a rare malformation that accounts for 8% of female reproductive system congenital anomalies.[10] It may go undetected until pregnancy or other reproductive issues arise. It may present with clinical symptoms like dyspareunia, dysmenorrhea, hematocolpos, hematometra, and hematometrocolpos, thus presenting with chronic abdominal pain as well.[11] Rarely, occurrences of didelphys uterus have been associated with genital tumours and endometriosis.[12]

Studies have shown congenital abnormalities appear more common in children of parents who are infertile or subfertile. The rationale for treatment has a role in the higher occurrence of congenital abnormalities observed in offspring born following infertility treatment.[13] This patient was the infertility-treated child of her parents, which might be the reason for uterine malformation.

Antenatal screening, including detailed ultrasound examinations, hysterosalpingography (HSG), magnetic resonance imaging (MRI), combined laparoscopy and hysteroscopy, can aid in the early detection of complex uterine anomalies.[14] For patients with known uterus didelphys, close monitoring throughout pregnancy is essential to detect any potential complications promptly. It is essential to distinguish this condition from other uterine anomalies, such as septate or uni-cornuate uterus, as the management and potential complications may differ. In the described case, only fetal ultrasonography was done many times, but uterine malformation couldn't be revealed.

During pregnancy, a uterus didelphys can lead to the risk of miscarriage and preterm labour due to limited uterine space for fetal growth, malpresentation, intrauterine growth retardation, low birth weight and perinatal mortality.[15] In the present case, the patient reached up to 40th week of gestation without extra care. Furthermore, the risk of miscarriage, preterm labour and intrauterine growth restriction did not develop. The patient delivered a child with appropriate birth weight at complete term.

A healthy pregnancy from conception through delivery depends on the placenta functioning correctly, which also affects the perinatal outcome.[16] In this case, the placenta is located on the

anterior upper segment and showed no separation. During pregnancy and caesarean section, no indications of placental insufficiency were seen. The newborn was healthy after birth, and adaptation went normal without complications.

Management options for pregnancies complicated by a double uterus may vary depending on the specific circumstances and patient preferences. Studies reported an 82% incidence of caesarean section in uterus didelphys.[17] Vaginal delivery in cases of didelphys uterus is associated with an increased risk of obstructed labour due to the narrowed birth canal or septum may cause dystocia.[18] Additionally, the presence of two cervices may predispose to cervical insufficiency, leading to premature cervical dilation and preterm labour. The thick longitudinal vaginal septum may tear at the time of vagina delivery and may cause profuse bleeding and difficulty in repair; there is also the risk of trauma of the cervix, which is also difficult to restore. The incidence of adverse pregnancy outcomes is raised in patients with Müllerian duct fusion defect.[19]

Elective caesarean section, as performed in this case, is often chosen to reduce the risk of unforeseen complications during and after labour.[20] A planned caesarean section allows for careful surgical planning and execution, minimising the risk of injury to the thick vaginal septum, excessive bleeding postpartum and other intraoperative complications. Additionally, this approach may be preferred if the patient has a history of recurrent pregnancy loss or preterm birth. During the caesarean section described in this report, the incision was carefully made in the lower uterine segment, avoiding the nongravid uterus, to minimise the risk of bleeding and other intraoperative complications.

Postoperative recovery for women with a didelphys uterus who undergo caesarean section is generally similar to that of women with a normal uterus. However, close monitoring for potential postoperative complications, such as postpartum haemorrhage due to decidualisation in non-gravid horn, infection or wound healing issues, is crucial to ensure a smooth recovery.

It is essential to counsel patients with a didelphys uterus about their reproductive options and potential risks associated with future pregnancies. Family planning discussions should include considerations for the mode of delivery and potential obstetric complications. Additionally, patients should be informed about the possibility of future fertility challenges, as a didelphys uterus may be associated with an increased risk of recurrent pregnancy loss.

CONCLUSION

Obstetricians and gynaecologists face difficult case situations when it comes to the identification and management of reproductive issues related to congenital uterine anomalies. Continuous research and awareness of uterine anomalies are essential to improve our understanding of their impact on reproductive health and to develop evidence-based guidelines for optimal management and care. Ultimately, early detection, appropriate antenatal screening, and thoughtful management strategies will contribute to better outcomes for women affected by this rare uterine anomaly.

Patient Perspective

The patient and her attendants were satisfied with her condition. The experience of caesarean section due to a rare uterine anomaly taught them the strength that comes from vulnerability. The patient was pleased with the healthy baby in her arms. She breastfeeds her baby without assistance, and her physical activities return as usual.

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Cite this article as:

Swati Malsariya, Bihani Sanjyal, K. Bharathi, Suman Jain, B. Pushpalatha. Uneventful pregnancy in didelphys uterus delivered through caesarean section: A case report. Int. J. Res. Ayurveda Pharm. 2024;15(1):9-13 DOI: http://dx.doi.org/10.7897/2277-4343.1513

Source of support: Nil, Conflict of interest: None Declared