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Case Report
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Failed Trial of Normal Delivery in Uterus Didelphys

Rijanto Agoeng Basoeki[1], Rifka Florensia[2], Supratikto Supratikto[3], Trimayanti Olfah[4], MT. Mahmudah Noor[5], Muhammad Anas[6]

[1,3,4,5,6)] Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Muhammadiyah Surabaya, East Java, Indonesia
[2)] Faculty of Medicine, Universitas Muhammadiyah Surabaya, East Java, Indonesia

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Correspondence:
rijantobasoeki27@gmail.com

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Abstract

Background: Uterus didelphys is one of the rarest anomalies of Müllerian duct fusion failure. Generally, the condition is asymptomatic or can be manifest clinically as dyspareunia and/or menstrual pain, making early diagnosis challenging. Although this condition can affect fertility and risk of complications in pregnancy, in practice, the diagnosis is infrequent, with minimal awareness about the condition.

Objective: This case report aims to outline the diagnostic methods and intervention actions carried out in a patient who was diagnosed with uterus didelphys after a failed normal delivery.

Case Presentation: This paper presents a case of a 21-year-old woman who came with a complaint of tightness in the womb two days before entering the hospital. The results of the anamnesis and physical examination show the needed of Cito LSCS surgery. During Cito LSCS, a uterus, an ovary, and a fallopian tube were found as a pair, with a fetus in the right uterus weighing 2100 g. Rehydration, antibiotics, analgesics, and laxatives were given postoperatively. After 3 days, the patient was discharged.

Conclusion: Examinations and new diagnostic methods need to be developed to identify uterine didelphys and prevent its potential complications.

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INTRODUCTION

The uterus changes during pregnancy, including hypertrophy of muscle fibers, growth, and a fast increase in uterine weight[1]. During pregnancy, the uterus can experience an anomaly: failure of paramesonephric duct fusion with the urogenital sinus during paramesonephric duct development, called Mullerian duct malformation[2]. In the didelphic uterus, paramesonephric duct fusion failure is mentioned to occur at week 8 to 16 [3,4]

Uterus didelphis, as a Mullerian duct anomaly, was initially frequently classified according to the American Fertility Society (AFS) classification, including Class III [5]. ESHRE/ESGE classified uterus didelphys as U3bC2, which means uterus complete bicorporeal with *'normal'* double cervix [6]. Previous studies on uterus didelphys highlight the complexity of the case of uterus didelphys, which is often accompanied by various medical conditions, such as known accidentally during surgery, prolapsed non-gravid uterus, birth weight less than 2,500 grams, anemia, and twin pregnancy [7–11].

After a sufficient period of pregnancy, an individual is expected to experience delivery, which consists of four stages: cervical dilatation following a sigmoid pattern, full cervical dilatation until the baby is born, placental expulsion, and finally, a critical period for examining the completeness of the placenta, membranes, and umbilical cord, along with monitoring blood pressure and pulse every 15 minutes during the first hour [1]. Uterus didelphys should be diagnosed as early as possible to prevent a higher probability of uterine rupture during vaginal delivery, premature rupture of membranes, miscarriage, IUGR, preterm delivery, pre-eclampsia, cesarean delivery, postpartum hemorrhage, and premature delivery [8,10,12–15]. The greater risk of preterm labor in a uterus didelphys condition is likely due to anatomical abnormalities that limit the capacity of the reproductive organs[16]. Complications that can arise in patients with uterus didelphys include presentation of a breech fetus [15].

In this context, this case report discusses a uterus didelphys patient G1P0A0, who was newly diagnosed during surgery, with a breech fetal presentation, umbilical cord prolapses, and fetal distress.

CASE PRESENTATION

A 21-year-old pregnant woman, G1 P0A0, arrived alone at Fatimah Lamongan Hospital, reporting pain due to contractions for the past two days, and her amniotic fluid began leaking since that morning as well. She had been married for a year. Previously, she received treatment at Puskesmas (public health clinic) approximately nine hours prior to the hospital; the delivery had not progressed. During pregnancy, the patient had only one ultrasound at 12 weeks. No data is available on the first trimester examinations related to cardiac function, the triovascular structure of the umbilical cord, and the normal or abnormal volume of amniotic fluid, although the anatomy of the fetus appeared normal. There was no history of sudden bleeding during pregnancy and family medical history.

The patient's vital signs were as follows: blood pressure 95/70 mmHg, pulse rate 80 bpm, and temperature 37.8°C. Obstetric examination revealed a uterine fundus height of 28 cm and

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a breech presentation. Palpable umbilical cord pulsations were noted, along with a small fetal part accessible. Both HI and Ket results were negative. The vaginal examination confirmed a one-finger narrow opening with 25% effacement. Laboratory results showed a hemoglobin level of 12 g%. Based on anamnesis, physical examination, and laboratory results, the patient was diagnosed with a primary gravida at 37 weeks with breech presentation, cord prolapse, and fetal distress. Emergency lower segment cesarean section (Cito LSCS) was performed.

Two uteri were identified during surgery. The right uterus contained a female fetus weighing 2100 grams and measuring 47 cm in length, surrounded by cloudy amniotic fluid, with one fallopian tube and ovary present. The left uterus lacked associated fallopian tubes and ovaries. During post-operative therapy, the patient received an RL infusion of 1000 mL, a Methyl Ergometrin drip (1 ampoule), Ampicillin 3x1 g, Ketorolac 3x1 g, and Fetic 2x1 g. After three days postpartum, the patient was advised to go home.

DISCUSSION

This case describes the pregnancy of a 21year-old woman, G1P0A0, who was diagnosed with a uterus didelphys during an emergency cesarean section. The patient complaint pain from contractions for two days. Her amniotic fluid began leaking in the morning she arrived at the hospital. Previously, she had been treated at a primary health care center (Puskesmas) approximately nine hours before hospital admission.

The patient had been married for a year, aligning with studies suggesting that uterus didelphys does not affect fertility differently than a normal uterus. There is no difference in fertility, premature membrane rupture, or likelihood of spontaneous abortion in the first trimester compared to patients with a normal uterus [14,17]. However, it was reported increasing miscarriages in the second and third trimester, preterm labor before 37 weeks [14]. In addition to miscarriage risks, patients with uterus didelphys are at higher risk of preterm labor before 37 weeks [17]. For example, in a study of 86 pregnancies with various Müllerian duct anomalies, 6 out of 15 patients with uterus didelphys experienced preterm labor before 37 weeks at a hospital in Australia [18]. The causes of these outcomes are still being studied, but hypotheses include uterine blood vessels and stroma possibly acting as barriers or having questionable functions after conception penetrates the epithelium, a smaller endometrial cavity/volume compared to normal individuals, or the presence of HOX genes involved in endometrial development [17].

During pregnancy, the patient had only an ultrasound at 12 weeks. As one of the types of anomaly ducts, Mullery recommends a more accurate classification of the uterus using a 3D pelvic ultrasound [8]. Uterine fundus height at 28 cm suggests a lower than the usual rate of uterine fundus height at 37 weeks of gestational age [19]. The breech presentation observed in the patient could also be due to constriction/obstruction at the pelvic inlet caused by the adjacent uterus [3]. During the vaginal touche examination, a narrow finger dilation with 25% effacement was considered abnormal due to ongoing contractions for two days. Normally, the first stage of labor begins with a latent phase, characterized by regular, significant contractions felt by the mother, accompanied

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by slow cervical dilatation (0-6 cm), which typically lasts up to 20 hours in nulliparous women[20]. Based on anamnesis, physical examination, and obstetric examination, the patient was diagnosed with GI P00 37 weeks, breech presentation, cord prolapse, and fetal distress.

Cord prolapse experienced by the patient can cause fetal death or disability due to umbilical cord compression, causing vasoconstriction and fetal hypoxia[21]. This has the potential to lead to fetal death or malformation because the emphasis on the umbilical cord causes vasoconstriction and fetal hypoxia[21]. The likelihood of cord prolapse increases with barriers to appropriate fetal engagement during pelvic entry [21].

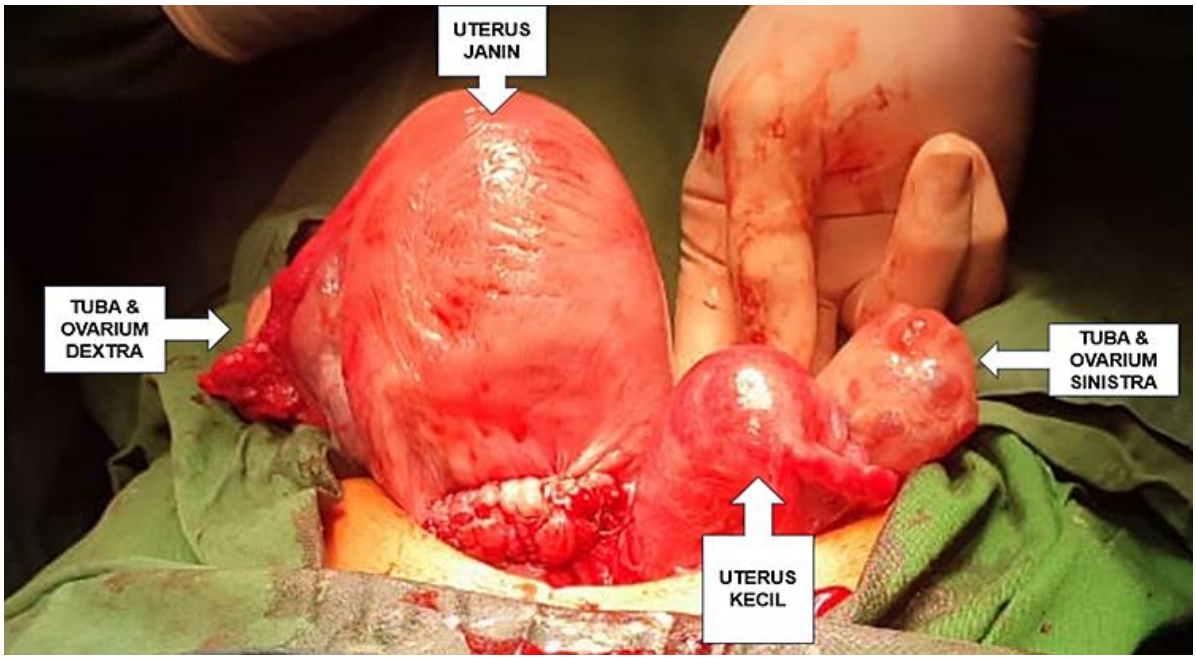

Figure 1. Image of uterus didelphys during cesarean section (Source: Rijanto Agoeng Basoeki, 2023)

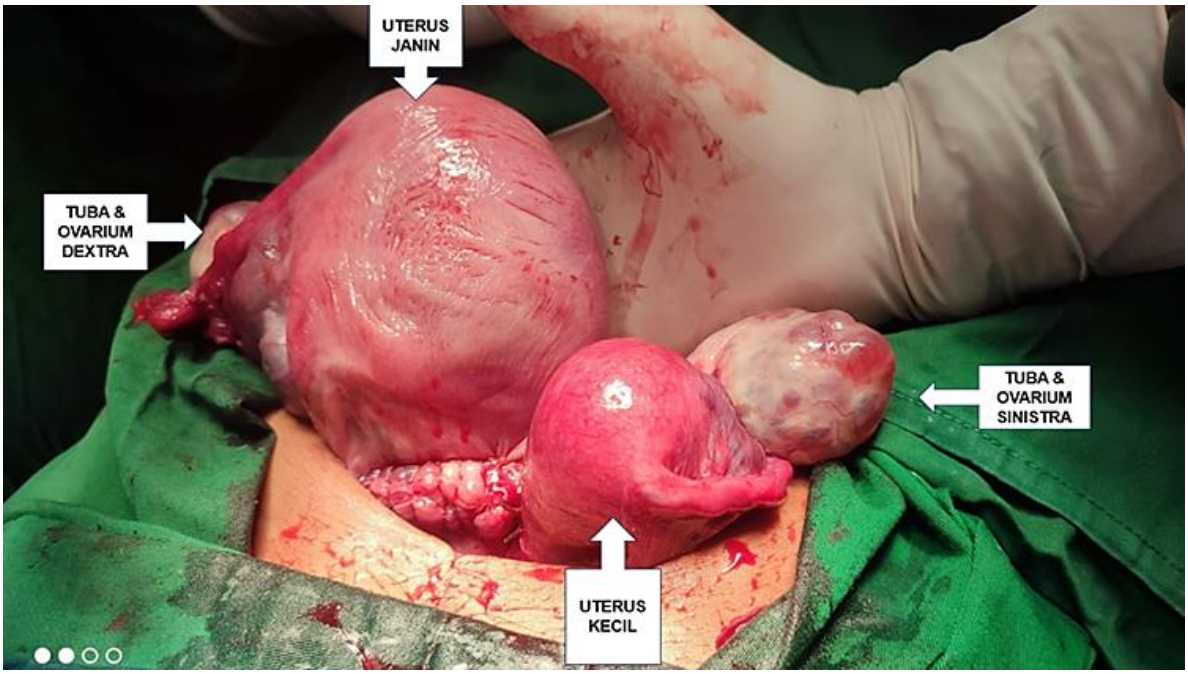

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Figure 2. Image of uterus didelphys during cesarean section (Source: Rijanto Agoeng Basoeki, 2023)

Cord prolapse should be monitored if fetal bradycardia signs appear with membrane rupture[21]. It is a clinical diagnosis confirmed by palpating a pulsating mass in the vagina and is managed by immediate referral for cesarean delivery to relieve umbilical cord pressure[21]. Cord prolapse has a definitive procedure for immediate referral (expedient delivery) to perform cesarean section[21]. Prognosis for cord prolapse depends mainly on gestational age and whether the prolapse occurs in or out of the hospital, with a mortality rate of less than 10%[21]. Click here to enter text. Cord prolapse complications include asphyxia, risking neonatal encephalopathy, cerebral palsy, and death[21]. In this case, the cord prolapse was well managed, preventing further complications.

The patient was also diagnosed with fetal distress, defined as the fetus being in a suboptimal environment, leading to compromised conditions observable from fetal heart rate, oxygenation, and blood flow[22]. The signs include fetal tachycardia or bradycardia and slow decelerations (late decelerations)[22]. Fetal distress is confirmed by an Apgar score of less than 7 at 1minute post-birth [23].

The patient underwent emergency lower-segment cesarean section (Cito-LSCS). Although cesarean delivery is not indicated for every patient with uterus didelphys, those with this condition are more likely to experience fetal malpresentation necessitating cesarean delivery [15], as in this case. During the operation, two uteri were found. The right uterus contained a female fetus weighing 2100 grams and measuring 47 cm, surrounded by cloudy amniotic fluid, with one fallopian tube and one ovary present. However, on the left side, no fallopian tubes or ovaries were found, only the uterus. The baby was born weighing 2100 grams with a breech presentation from previous examinations, which was likely also contributed to by the patient's condition of uterus didelphys. Uterus didelphys increases the risk of newborns weighing under 2500 grams, fetal malpresentation at birth, and intrauterine growth restriction (IUGR), suspected to be caused by uterine blood vessels and stroma acting as barriers to conception after penetrating the epithelium, a smaller endometrial cavity/volume compared to normal individuals, or the presence of HOX genes involved in endometrial development [17].

The patient was diagnosed with uterus didelphys. The characteristic of a uterus with didelphys is a complete indentation of the midline of the fundus of the uterus that divides the corpus of the uterus to the cervix [6,] and the characteristic of the cervix in patients with uterus didelphys is having two completely or partially separate cervices. In diagnosing uterus didelphys, caution is needed not to confuse it with other types of Mullerian duct anomalies, such as "bicornuate uterus" and "septate uterus". The way to distinguish them is that in "bicornuate uterus" the cervix is normal, while in uterus didelphys the cervix has a septum [2]. In a "septate uterus," the cervices are separated by a muscular or fibrous septum[2]. Thus, if there are two uteri, it is important to determine whether the patient's cervix is normal.

CONCLUSION

Based on the results of the lower segment cesarean section (LSCS), the patient was found

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to have uterus didelphys. Uterus didelphys is suspected to contribute to fetal malpresentation during gestation, dystocia manifesting as a prolonged latent phase, and a birth weight of less than 2500 grams, which indirectly influenced the decision to proceed with emergency cesarean therapy (Cito LSCS). Additionally, the patient experienced complications, including breech presentation, umbilical cord prolapse, and fetal distress. During the surgery, two uteruses were obtained. The right uterus consisted of a fallopian tube, an ovary, and contained a female fetus with cloudy amniotic membranes and weighing 2100 grams. While the left uterus was accompanied by a fallopian tube, the ovary did not contain a fetus. Educating the patient about the condition (uterus didelphys), antenatal care, and 3D ultrasound (if possible) is crucial. This case report supports obstetric and gynecologic practitioners and researchers in publishing similar cases to gain more comprehensive insights into the case, its prevalence, and characteristics in developing countries, the prevention of complications from this condition, and the discovery of possible early diagnostic methods.

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