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Successful Multiple Caesarean Sections in A Woman with Uterus Didelphys – A Case Report

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Abstract

The prevalence of uterine malformation in women is estimated at 5.5 % in unselected population. A double uterus is the result of a complete lack of fusion of Muller's ducts, resulting in a split body and cervix, and sometimes the vagina. A double uterus predisposes to miscarriages, fetal malposition, premature births, and threatened uterine rupture.

A 39-year-old female patient with no history of chronic disease, gravida-8, para-6 was hospitalised at 30 weeks' gestation for symptoms of preterm labour. History: double uterus (current pregnancy in the left uterus), menstrual cycles before pregnancy twice a month, status post 5 caesarean sections. By elective caesarean section at 37 weeks' gestation, a term neonate of male sex weighing 2700 g was delivered with an Apgar score of 9/9. Impaired healing of the surgical wound was observed in the perinatal period. Broad-spectrum antibiotic therapy was initiated.

Clinical improvement and normal healing of the surgical site was achieved. The patient was discharged home in good general condition, without complaints, with

recommendations for effective contraception, as another pregnancy would pose a serious risk to her life and health.

Despite the patient's history of multiple caesarean sections, holistic medical care ensured a safe course of the current pregnancy and delivery, and the double uterus did not reduce the chances of delivering and delivering a healthy newborn.

Keywords: Uterus Didelphys, Pregnancy, Obstetrics

Introduction

Congenital uterine anomalies (CUA) are a significant concern for most reproductive specialists. Currently, it is estimated that uterine malformations affect around 5.5 % of unselected population and 8 % in infertile women. That is caused by mal-development of the Müller's ducts. Both degree and stages of Müllerian ducts development are directly linked to type and classification of CUAs.

While most of the CUA cases remain asymptomatic, some of them are known to have adverse reproductive Outcomes including abnormal bleeding, abnormal pain before or during menstruation, and dyspareunia. A uterus didelphys predisposes to miscarriages, fetal malpresentation, premature births, placenta abruption, threatened uterine rupture and perinatal mortality.

Preterm births occur in approximately 17,44% to 33,3% of women with uterus didelphys. The ASRM (American Society for Reproductive Medicine) classification divides Müllerian ductanomalies into seven major types; according to anatomical changes in the uterus and the embryonic processes responsible for them. Referring to ASRM the uterus didelphys belongs to the third class.

Case Presentation

A 39-year-old gravida-8 para-6 with no chronic diseases at 30 weeks' gestation was admitted as an emergency to the Perinatology, Obstetrics and Gynecology Clinic of the Polish Mother's Memorial Hospital – Research Institute in Lodz for threatened preterm labor. On admission, the patient reported lower abdominal pain, tightness and uterine contractions. Bleeding and spotting from the genital tract did not occur, and she felt the movements of the fetus well.

No outflow of amniotic fluid was also observed. During hospitalization, a course of prenatal steroid therapy, tocolytic drugs and antibiotic therapy were administered due to the urinary tract infection. From the history we know that the patient has a double uterus, and the current pregnancy is in the left uterus. The obstetric history of the patient is stated below:

PI (2004) - miscarriage

PII (2005) - delivered by caesarean section in 39' weeks gestation

PIII (2007) - delivered by caesarean section in 40' weeks gestation

PIV (2008) - delivered by caesarean section in 40' weeks gestation

PV (2015) - delivered by caesarean section in 39' weeks gestation

PVI (2016) – miscarriage

PVII (2021)- delivered by caesarean section in 34' weeks gestation due to regular uterine contraction function.

Our patient got menarche at the age of 13, and at the age of 16, she was diagnosed with a double uterus on ultrasound.

The gynaecological examination also revealed two cervixes and a vagina with a septum. The patient at the time experienced irregular, painful, prolonged and heavy periods.

The pregnancy was confirmed at only in the late 18thweek, due to continuous menstruation until the 4th month of pregnancy. The pregnancy kept progressing normally except for the hospitalization at 30 weeks due to threatened preterm labour.

Following the recommendation, the patient was admitted to the Department of Perinatology, Obstetrics and Gynecology of the Polish Mother's Memorial Hospital – Research Institute in Lodz, Poland, in the 34th week of pregnancy. On examination, the single fetus was visible in the left uterus, longitudinal pelvic position, posture II and placenta was on the posterior wall. The fetal weight was estimated to be 2264+/-331 g- indicating fetal hypotrophy, whereas on CTG, fetal normocardia was (detected/diagnosed). As a result of clinical, laboratory and imaging diagnostics, the patient was qualified for caesarean section. In the 37thweekof pregnancy, a 2700 g male term neonate was delivered by elective cesarean section, scoring 9/9 points on the Apgar scale at 1 and 5 minutes of life. On day 5 postpartum, redness around the caesarean section wound was observed, and intravenous ceftazidime was administered. Due to problems with intravenous insertion and the reluctance of the patient to receive the antibiotic intravenously on day 7postpartum, the antibiotic was changed to cefuroxime administered orally., and following that, the wound was healing properly. On day 12 postpartum, the patient reported a sensation of tenderness in the upper pole of the postoperative wound Hence a follow-up ultrasound of the abdomen was ordered. Moreover, a purulent discharge was observed in the lower pole of the wound. A swab was taken for microbiological examination, and an intravenous antibiotic therapy was restarted. In the following days, there was a visible improvement wound’s healing, and the patient's clinical condition has significantly improved. The result of the microbiological examination confirmed infection of the postoperative wound with Staphylococcus epidermidis and Staphylococcus haemolytic us. Referring to the performed microbiological antibiogram, both strains had vancomycin susceptibility. However, due to the significant clinical improvement, and a proper healing of the caesarean section wound in response to the antibiotics administered, the patient was discontinued on vancomycin. At day 16postpartum, the patient was discharged home in satisfactory general condition. Nevertheless, effective contraception was highly recommended, as another pregnancy would pose a severe risk to her health or even life.

Discussion

A uterus didelphys is a scarce anatomical variation among the global population. It is a result of the unassembled two Müllerian ducts during embryological development, which leads to their separate development, and resulting in two uteruses with two cervixes and a vagina with a septum. Notably, the urinary tract and the reproductive tractembryologically originate from the same mesodermal origin; thereby, abnormalities in the uterus can be linked to abnormal kidney development. However, gonadal development is not linked to the Müllerian ducts; hence, women with MDAs have normal ovaries. In 2010, Ng'ang'a et al. report that a uterus didelphys affects between 0.3% and 11% of the female population. According to a retrospective study conducted by Zhang etal. Based on 21,961 cases, 116 women showed variation associated with abnormal development of Müllerian ducts, of which 28 women had a double uterus, which accounts for24.2%. In contrast, other source reports that the frequency of uterus didelphys is the second rarest malformation of MDAs

with an incidence of 8.3%, which is in reasonable agreement with statistics provided by other research group; Jayaprakasan K et al. reporting11% in 2017. Differences in statistics between different publications may be due to different diagnostic methods and the experience of the specialist.

In addition, the problem with correct diagnosis of women with a double uterus stems from the fact that in many cases this condition is known to be asymptomatic The diagnostic path of MDA soften begins during a routine speculum examination, which allows detection of abnormalities such as the vaginal septum, leading to more profound diagnostic examination. Nevertheless, Claire Ross et al. in 2018reported that in patient diagnosed with dyspareunia, pelvic pain and irregular menstrual periods an ultrasound confirmed a double uterus. Lastly, Pankaja Set al. in2016described the case of a patient who was diagnosed with uterus didelphys at age 18, due to pelvic pain.

However, the correct diagnosis of a double uterus is in most cases linked to troubles getting pregnant, during pregnancy or during labour. That is directly linked with anatomical malformation being associated with an increased likelihood of obstetric complications. Moreover, according to Zhang et al. patients with a double uterus were more likely to require fertility treatment compared to women with other uterine malformations [9]. However, one of the meta analysis conducted by Venetis et al., reports no significant differences between probability of pregnancy of women with congenital uterine anomalies such as a double uterus, and women with normal reproductive tract anatomy.

A double uterus has also been linked to miscarriages, which hesitates between 21 % and 33%. In case of the patient described in this study, a double uterus affected the course of the pregnancies, leading to two miscarriages. In addition, a uterus didelphys can predispose to preterm labour. That is confirmed by other sources such as a retrospective study by Raga et al. from 1997based on 3181patients showing much higher risk of preterm delivery and potential miscarriage, particularly in women with a double uterus in comparison to other MDAs. The risk of preterm birth in women with uterus didelphys was 3.58times elevated in comparison to those with a normal reproductive system anatomy. Other sources such as Ćwiertnia and colleagues report that the preterm births in women with a double uterus occur in between 17.44% to33.3% cases. Additionally Hughe et al., highlight that40% of women with a uterus didelphys had a preterm birth, and 20% had a preterm birth before 34 weeks' gestation. Also, 11% of pregnancies in women with a uterus didelphys were complicated by intrauterine growth restriction. According to a meta-analysis conducted by Venetis et al., pregnancy in women with uterine malformations such as uterus didelphys, a septated uterus and a bicornuate uterus is fraught with the complication of intrauterine growth restriction. Different studies report different frequency of breech position in patients with a uterus didelphys; from 43%, up to 51%. It is worth mentioning that women with a uterus didelphys have a 3.7-fold increased risk of fetal malpositioning compared to women without MDAs. Lastly, due to numerous perinatal complications the rate of deliveries by cesarean section is significantly elevated, and hesitates between 50% to 84%.

However, there are reported clinical cases of women with a double uterus who delivered vaginally. The study by Ng'ang'a et al. Describes a case of a patient who, despite having a double uterus and 2 previous deliveries

by cesarean section, gave birth vaginally to a live baby boy. Another group also describes a similar case; however, this time, a vaginal childbirth ended with a complete rupture of the vaginal septum, as a result of the baby's head pushing against it. Importantly, it was highlighted that excision of the longitudinal vaginal septum should be considered if the patient is symptomatic. It leads to a general suggestion that in all patient with a double uterus and a vaginal septum, the excision of the longitudinal vaginal septum should be considered to facilitate successful vaginal delivery. Importantly, it is worth mentioning that an uterus didelphys is not a direct indication for delivery by cesarean section, and vaginal child birth should initially be considered. Women who have a scarred uterus are more likely to have a uterine rupture. Because of the complexity of the cases and the intrapartum complication such as vaginal soft tissue dystocia or complete rupture of the vaginal septum, pregnant women with a uterus didelphys should be managed by highly referential centres. In order to reduce the likelihood of complications in pregnant women with a double uterus, it is crucial to diagnose the patient beforehand correctly. A typical examination performed in women is a 2D uterine ultrasound; however, this test is the least effective regarding reproductive system anomalies [13]. A much better would be 3D ultrasound; however, despite its effectiveness, it is rarely used due to its lower availability. In addition, only some specialists can perform this examination, as it requires additional training. The gold standard for diagnosing malformations in the genital tract is magnetic resonance imaging (MRI). Its great advantage is the noninvasiveness, but unfortunately, it is more expensive procedure requiring a separate specialist for evaluation.

Conclusions

A double uterus is a relatively rare congenital malformation which significantly increases the risk of miscarriage, fetal intrauterine malposition and threatened uterine rupture. That is why pregnant women require specialised and comprehensive medical care. In this case, despite the patient's history of multiple caesarean sections, holistic medical care ensured a safe pregnancy and delivery, and the double uterus did not reduce the chances of delivering a healthy newborn.

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