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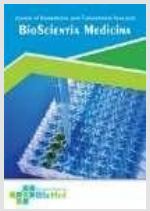

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Challenges in Diagnosing and Managing Uterus Didelphys: A Case Report

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A B S T R A C T

Background: This medical case report provides an insightful examination of a 22-year-old pregnant woman with uterus didelphys, a rare congenital anomaly of the Müllerian ducts. The introduction section sets the stage by discussing the embryological origins of congenital uterine anomalies and their varied clinical manifestations. It emphasizes the challenges in detecting these conditions due to their often asymptomatic nature and highlights their significant impact on reproductive health, including increased risks of miscarriage, preterm labor, and perinatal mortality. **Case presentation:** The case report segment details the patient's clinical presentation, initially misdiagnosed as an ectopic pregnancy, later revealed to be an intrauterine pregnancy coexisting with uterus didelphys. The diagnosis was substantiated by her history of irregular menstruation, lower abdominal pain since menarche, and a previously diagnosed ovarian cyst, illustrating the critical role of a thorough medical history in guiding diagnosis. The discussion section delves into the implications of uterus didelphys on fertility and pregnancy outcomes, advocating for individualized management strategies and highlighting the psychological impact of such congenital anomalies. It underscores the necessity of a multidisciplinary approach to care involving obstetricians, radiologists, and reproductive specialists. **Conclusion:** The conclusion emphasizes the importance of clinical awareness, meticulous history-taking, and personalized care in the management of uterus didelphys. It calls for further research to enhance understanding and improve outcomes in reproductive medicine, stressing the complexity of diagnosing and managing pregnancies in women with Müllerian anomalies and the need to consider congenital uterine anomalies in differential diagnoses, particularly in young women with atypical gynecological histories.

1. Introduction

This case study presents a detailed analysis of a 22-year-old woman diagnosed with uterus didelphys, elucidating the intricate clinical challenges and management intricacies associated with congenital anomalies of the uterus. The genesis of such anomalies lies in the aberrant embryologic progression of the paramesonephric (Müllerian) ducts. The range of potential uterine anomalies is broad, often originating from disruptions in the development of the uterovaginal primordium during the critical eighth week of gestation, inadequate or failed development of one or both paramesonephric ducts, incomplete fusion of these ducts, or the partial canalization of the vaginal plate.[1–3]

The actual frequency and prevalence of these congenital uterine anomalies within the general populace are not well-defined, primarily attributed to the typical lack of detection of these abnormalities at birth and their consequent underreporting. In the context of pregnancy, such anomalies are implicated in a spectrum of reproductive complications, including difficulty in conceiving, an elevated risk of miscarriages during the first and second trimesters, preterm labour, placental abruption, low birth weight, restricted fetal growth, malpresentation during

childbirth, and increased perinatal mortality rates.[4–6]

Empirical studies have shown a heightened prevalence of congenital uterine anomalies in specific demographics: about 8.0% of women struggling with infertility, 13.3% of those who have experienced miscarriages, and up to 24.5% in individuals with a history of both miscarriages and infertility. These figures underscore the profound impact these anomalies can exert on reproductive health and outcomes. The case at hand sheds light on the distinctive challenges and essential considerations in the diagnosis and management of a pregnancy complicated by a rare Müllerian duct anomaly, namely uterus didelphys. This introduction paves the way for an in-depth examination of the patient's clinical presentation, diagnostic process, management approach, and the implications of such congenital anomalies in reproductive medicine.[7–9]

2. Case Presentation

A 22-year-old woman experiencing her first pregnancy (G1P0A0) and estimated to be at 8-9 weeks of gestation sought medical attention at the emergency department of Ciawi General Hospital. The primary complaint was intermittent lower abdominal pain that commenced a week prior and escalated significantly in intensity over the past three days. Accompanying this pain was observing occasional blood spotting and a discharge characterized by its clear-to-white colour and lack of odour. The onset of her last menstrual period was recorded on May 23, 2023, and after this, a home pregnancy test administered by the patient yielded a positive result. Significantly, three days before her presentation to the hospital, she was evaluated at a local community health centre, where she was diagnosed with an ectopic pregnancy. It is noted that the patient's conception occurred naturally.

In her medical history, the patient reported a longstanding issue of lower abdominal pain, which first became noticeable at the onset of menarche at 14 years of age. This pain has been a recurring issue, often accompanied by irregular menstrual cycles. Typically, during her menstrual periods, she would need to change her sanitary pads two to three times daily, with the duration of menstruation ranging from three to five days. About one and a half years prior to her current presentation, an ultrasound examination was performed, which revealed the presence of an ovarian cyst. Further to this, approximately one year ago, the patient underwent a laparoscopic surgical procedure. During this procedure, a condition known as uterus didelphys was discovered, along with a patent (open and functional) right fallopian tube and a non-patent (closed or non-functional) left fallopian tube. This medical history is crucial in understanding her current condition. Uterus didelphys is a congenital abnormality in which the uterus is a paired organ. This condition often leads to complications in pregnancy, including a higher risk of miscarriage, preterm labour, and abnormal fetal position during delivery. The presence of this condition, along with her history of ovarian cysts and irregular menstruation, adds complexity to her current pregnancy.

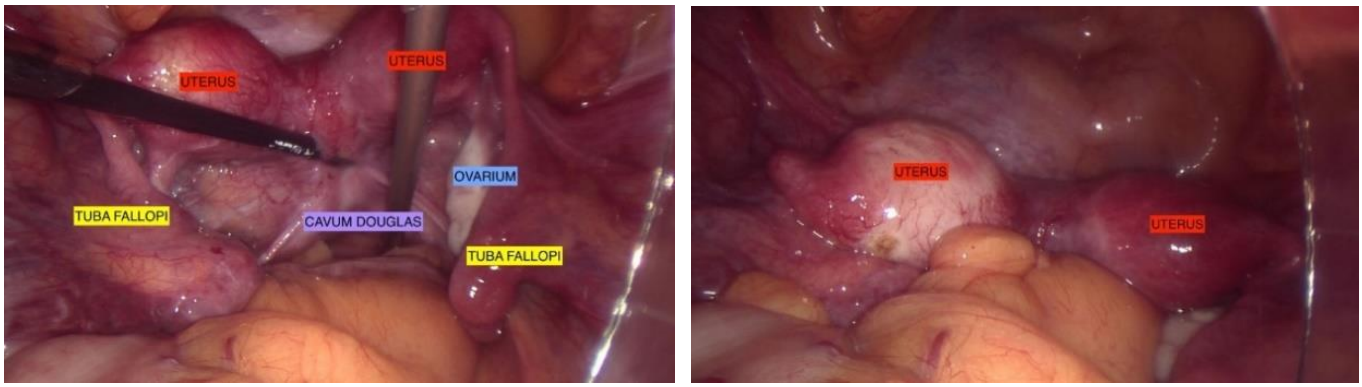

Figure 1. Laparoscopic imaging of uterus didelphys.

During the current visit, the patient denied experiencing any associated symptoms such as fever, nausea, vomiting, palpitations, general body weakness, dizziness, or loss of consciousness, which might have suggested a more severe systemic condition or complications related to the pregnancy. To further evaluate her condition, a transvaginal ultrasound examination was conducted at the hospital's Obstetrics Clinic. Contrary to the initial diagnosis of an ectopic pregnancy, the ultrasound results indicated an intrauterine pregnancy. This finding necessitated a reassessment of her treatment plan and close monitoring due to her complex gynecological history.

3. Discussion

The case of the 22-year-old pregnant woman with uterus didelphys presents a unique opportunity to discuss this rare congenital anomaly and its implications on pregnancy and reproductive health. Uterus didelphys is a rare form of congenital anomaly of the Müllerian ducts, characterized by two uteri from birth.[10,11] This condition arises due to the failure of the inferior fusion of the paramesonephric ducts, resulting in separate uterine cavities with either dual cervixes and a double or single vagina. The most commonly used classification system for Müllerian anomalies is by the American Society of Reproductive Medicine, which describes these anomalies anatomically. Uterus didelphys, with an estimated prevalence of 0.3%, represents a rare congenital anomaly.[12–14]

The normal embryological development of the genital ducts involves the mesonephric (Wolffian) and the paramesonephric (Müllerian) ducts. The paramesonephric ducts, originating from longitudinal invaginations of the coelomic epithelium, develop into genital ducts divided into three parts: the craniocervical, horizontal, and caudovertical parts. The first two parts develop into the fallopian tubes, while the third part forms the uterine canal. The failure of fusion of the Müllerian ducts results in uterus didelphys. Most women with this condition are asymptomatic, but some may experience dyspareunia or dysmenorrhea due to the presence of a longitudinal vaginal septum of varying degrees. Associated complications can include genital neoplasms, hematocolpos, and renal anomalies.[15,16]

Despite these complications, many women with uterus didelphys do not face significant reproductive or pregnancy issues. This condition can be diagnosed during routine pelvic examinations and confirmed through ultrasound, sonohysterogram, magnetic resonance imaging (MRI), and hysterosalpingography. Management is generally necessary only in symptomatic cases, such as painful cramps before or during menstruation, abnormal bleeding during menstruation, recurrent miscarriages, or premature labour. Uterus didelphys generally have a good pregnancy prognosis as pregnancy can develop in one of the two horns.[17–19]

In the context of our case, the patient's previous history of lower abdominal pain since menarche, irregular menstrual cycles, and the discovery of an ovarian cyst and uterus didelphys through laparoscopic surgery provided crucial insights. The initial misdiagnosis of ectopic pregnancy and subsequent discovery of an intrauterine pregnancy via transvaginal ultrasound highlight the complexity and challenges in diagnosing pregnancies in patients with Müllerian anomalies like uterus didelphys.[20,21]

This case underscores the importance of considering congenital uterine anomalies in differential diagnoses, especially in young women with atypical gynaecological histories. It also emphasizes the need for careful monitoring and management of pregnancies in such cases, given the potential for complications. The favourable prognosis for pregnancy in uterus didelphys patients is reassuring, but it also necessitates a tailored approach to care, considering the individual's symptoms and history. Regular monitoring and appropriate interventions can ensure the best outcomes for both mother and fetus in such scenarios.[22]

4. Conclusion

This case report of a 22-year-old pregnant woman diagnosed with uterus didelphys enriches the understanding of managing pregnancies in the context of rare congenital Müllerian anomalies. The presence of two separate uterine cavities, a hallmark of uterus didelphys due to the non-fusion of the paramesonephric ducts, presents unique diagnostic and management challenges in prenatal care.

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