RESEARCH PAPER

Successful Pregnancy in a Unicornuate Uterus: A Case Report

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ABSTRACT

Unicornuate uterus is a rare Müllerian duct anomaly resulting from incomplete development of one Müllerian duct. It is associated with adverse reproductive outcomes including infertility, recurrent pregnancy loss, preterm labor, malpresentation, and fetal growth restriction. Even though the unicornuate uterus is responsible for inimical maternal and fetal outcomes in pregnant women, a successful pregnancy is possible. Here we present a rare case of a primigravida with a unicornuate uterus who successfully carried her pregnancy to 33 weeks and delivered a live baby by emergency cesarean section.

Keywords: Pregnancy Outcome, Uterine Anomalies, Congenital Müllerian Malformations, Pregnancy Unicornuate Uterus.

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Introduction

Congenital uterine anomalies (CUAs) result from abnormal formation, fusion, or resorption of the Müllerian ducts during embryonic life. The normal uterus is formed by the complete fusion of the paired Müllerian ducts between the 6th and 9th weeks of intrauterine life, followed by canalization and resorption of the midline septum. Any disruption in this developmental sequence can result in a range of uterine malformations, such as septate, bicornuate, didelphys, or unicornuate uterus[1].

The unicornuate uterus represents one of the rarer types of Müllerian duct anomalies, accounting for approximately 2.4% to 13% of all such cases[3]. It occurs due to partial or complete agenesis of one Müllerian duct, resulting in a hemi-uterus with a single fallopian tube and often a rudimentary horn. The rudimentary horn may or may not communicate with the uterine cavity. According to the American Society for Reproductive Medicine (ASRM) classification, it is categorized as Class II anomaly[2]**.** The reproductive and obstetric outcomes in women with unicornuate uterus are often compromised. The condition is associated with an increased incidence of infertility, recurrent pregnancy loss, preterm labor, malpresentation (especially breech), intrauterine growth restriction (IUGR**)**, and preterm premature rupture of membranes (PPROM)[4,5]**.** Moreover, placental abnormalities such as placenta previa and placental abruption are also more frequent[6]. These complications are primarily attributed to the reduced uterine cavity size**,** asymmetrical shape, and diminished uteroplacental blood flow**.**

Although many pregnancies in a unicornuate uterus end in miscarriage or preterm delivery, advancements in prenatal ultrasonography and high-risk obstetric care have made it possible for some women to carry pregnancies to viability and achieve successful outcomes. Early diagnosis through imaging modalities such as 3D ultrasonography, MRI, or hysterosalpingography plays a crucial role in anticipating potential complications and planning timely intervention[7,8].

This case report describes a rare instance of a successful pregnancy outcome in a woman with a unicornuate uterus, who presented with preterm labor and underwent an emergency cesarean section.

The report emphasizes the importance of careful antenatal monitoring, prompt diagnosis, and appropriate obstetric management in improving maternal and neonatal outcomes in such high-risk pregnancies.

Case Report

A 24-year-old primigravida with a gestational age of 33 weeks and 3 days presented to the labor room with complaints of lower abdominal pain for one day. She had no history of vaginal bleeding, leaking, or fever. Her menstrual cycles before conception were regular, and she had conceived spontaneously.

On admission, the vital signs were within normal limits. Abdominal examination revealed a uterine fundal height corresponding to 34 weeks of gestation with a breech presentation. Fetal heart rate was 140 beats per minute, regular and well localized. There were no uterine tenderness or abnormal contractions at the time of examination.

Obstetric ultrasonography (USG) showed a single live intrauterine gestation corresponding to 34 weeks and 1 day, with breech presentation and adequate amniotic fluid volume. The placenta was located posteriorly.

After admission, the patient developed pre term premature rupture of membranes (PPROM) and signs of fetal distress. An emergency lower segment cesarean section (LSCS) was performed.

Intraoperative findings revealed absence of the left round ligament and unilateral (right-sided) development of the uterus, confirming a unicornuate uterus(Fig 1). The right fallopian tube and ovary were normal, whereas the left adnexa were absent. The placenta was fundo-posterior and was expelled completely.

A live male baby weighing 2.1 kg was delivered, who cried immediately after birth. The Apgar scores were 7 at 1 minute and 9 at 5 minutes. Homeostasis was secured, and the postoperative period was uneventful. The patient recovered well, and suture removal was done on postoperative day 8, after which she was discharged in good condition along with her newborn.

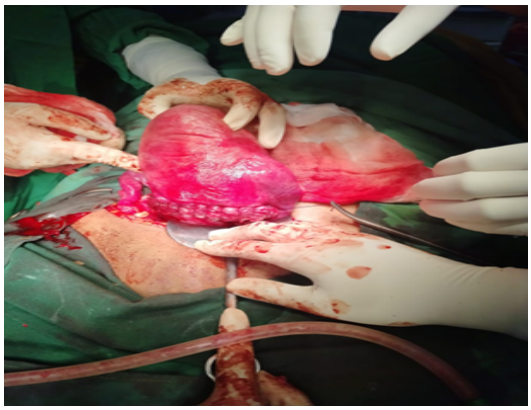

Fig 1: Intra OP picture of Unicornuate uterus.

Discussion

The unicornuate uterus is one of the rarest congenital uterine malformations and often poses diagnostic and obstetric challenges. Its prevalence is estimated at 1 in 4,000 women in the general population and up to 2.4–13% among those with Müllerian anomalies. The defect results from arrested development of one Müllerian duct, leaving a hemi-uterus with limited capacity for expansion during pregnancy[9].

The anomaly is frequently associated with a rudimentary horn, which may be either cavitary or non-cavitary. If a functional, non-communicating rudimentary horn exists, it may result in hematometra, endometriosis, or even ectopic pregnancy in the rudimentary horn—conditions associated with high morbidity[10].

Pregnancy in a unicornuate uterus carries substantial risks due to the restricted uterine cavity and diminished blood supply, often leading to preterm labor, malpresentation, and IUGR[11,12]. Studies report preterm delivery rates between 20–40%, miscarriage rates up to 40%, and live birth rates around 40–50%[13]. Breech presentation, as observed in this case, is common because of the asymmetrical uterine contour.

In this patient, the pregnancy progressed up to 33 weeks before PROM and fetal distress occurred, necessitating cesarean delivery. Intraoperative confirmation of the unicornuate uterus was made by the absence of the left round ligament and tube. Despite the inherent risks, the outcome was favorable due to early obstetric intervention and close monitoring.

Diagnosis of a unicornuate uterus is typically achieved using three-dimensional ultrasonography, magnetic resonance imaging (MRI), or hysterosalpingography (HSG)[7]. MRI remains the gold standard for accurate anatomical assessment.

Early identification allows for proper counseling regarding fertility prognosis, pregnancy risks, and the need for specialized perinatal care.

Management is primarily conservative and individualized. During pregnancy, serial growth scans, cervical length monitoring, and preterm birth prevention strategies are recommended[3,14]. Delivery planning should consider presentation, fetal well-being, and obstetric complications. Most reported successful pregnancies in unicornuate uteri end via cesarean section, as in this case.

Conclusion

Pregnancy in a unicornuate uterus is rare and associated with significant maternal and fetal risks. However, with early diagnosis, vigilant antenatal supervision, and timely obstetric intervention, favorable outcomes are possible. This case underscores the importance of high clinical suspicion, routine imaging in patients with unusual uterine morphology, and multidisciplinary management to ensure optimal maternal and neonatal health.

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