CASE REPORT

Preterm prelabour rupture of membranes with bicornuate uterus: A case report

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Abstract

A 29-year-old primiparous woman with a diagnosed bicornuate unicolis uterus presented at 30 weeks of gestation to the emergency triage due to preterm prelabour rupture of membranes PPROM. An emergency caesarean section was opted as the mode of delivery. Laboratory analyses showed the presence of an infectious agent, and ultrasonography confirmed the bicornuate uterus. A caesarean section was done followed by delivery of baby girl with good APGAR score and a weight of 1.7kg. The neonate gained 500 g during 7 days of hospitalization and was discharged. This case displays that this anomaly requires advanced management when present during pregnancy and underscores the importance of multidisciplinary care in achieving optimal outcomes.

Keywords: Preterm prelabour rupture of membranes, bicornuate uterues, unicollis.

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Introduction

Premature prelabour rupture of membranes (PPROM) poses a significant risk to pregnancy by affecting both the maternal and the neonatal outcomes. Although the uterine anomaly called bicornate uterus is already complex, cases become more complicated in the setting of the bicornuate uterus, a congenital anomaly of Müllerian ducts during embryogenesis.[1] The bicornuate uterus demonstrates distinct features, including a central myometrial septum and two uterine cavities, which indicate anatomical variations that may influence the management and prognosis of PPROM.[2]

The prevalence of bicornuate uterus is 0.1% to 3% among women of reproductive age, reflecting variability across ethnic groups.[3] It is also associated with an increased risk of adverse obstetric outcomes, including recurrent pregnancy loss, malpresentation and preterm delivery. The management of PPROM in women with a bicornuate uterus can present show different clinical challenges, especially for the ones linked with the cervical incompetence, foetal restrained growth and preterm breaks.[4] Although decisions regarding foetal lung maturation therapy, prophylactic antibiotics, and the timing of delivery require careful consideration, they can greatly influence outcomes.

Hence, pregnancies in women with a bicornuate uterus should be managed with thorough assessment for obstetric complications. Despite hospitalization and close monitoring, a favourable neonatal outcome is still achievable. The case presented in this report serves as an illustration of these clinical considerations.

Case Report

A 29-year-old female, primigravida, house wife (married for 4 years) presented to the emergency labour room of Ghurki Trust and Teaching Hospital, Lahore on 23rd March 2024 with complaints of preterm prelabour rupture of membranes (PPROM). She was an unbooked and unscreened patient with LMP of 23rd August 2023 and with an expected date of delivery of 30th May, 2024.She presented on the 3rd day of 30th week of gestation and was already a known case of bicornuate unicollis uterus, diagnosed during her work up at an infertility clinic. After management at the infertility clinic, she had undergone ovulation induction followed by serial ultrasounds, but her medical records were not available. According to the patient, pregnancy was confirmed through a urine pregnancy test and ultrasound. She maintained normal blood pressure and blood glucose levels throughout pregnancy, with no complaints of polyuria, polydipsia, headache, burning micturition, shortness of breath, or per vaginal (PV) leaking or discharge. She then developed sudden PV leaking, after which she was admitted.

Her emergency ultrasound showed a longitudinal lie with breech presentation as explained in Table. The parameters corresponded to gestational age, liquor was absent, and the foetal heart rate had decreased to 100–90 bpm. The biophysical Profile was 8/10 and an emergency lower segment caesarean section was performed. The scan

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Table: Haematological and Radiological Parameters of the Patient of Bicornuate Unicollis Uterus with Pregnancy.

Lab Parameter	Normal range	Observed value	Inference
CRP	<5	18.92 mg/dl	Suggestive of high inflammatory process
TLC	4.0-11.0	9.5	suggestive of onset or remission of infective process
Hb	12.0-16.0	10.7	Below normal
Neutrophils	40-70	79	Acute phase infection
Radiological Findings			
MRI Pelvis	Bicornuate Unicollis Uterus		
Obs Scan	Normal Intrauterine pregnancy with breech presentation		

CRP: C-Reactive Protein TLC: Total Leucocyte Count Hb: Haemoglobin MRI: Magnetic Resonance Imaging Obs: Obstetric

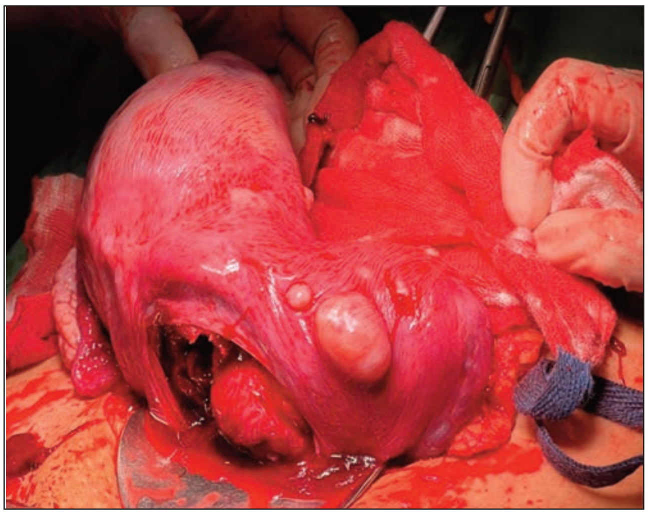

Figure: Bicornuate Unicollis Uterus During the Procedure.

confirmed absent liquor, and laboratory investigations were sent which showed inflammatory and infectious process with raised CRP levels, marked neutrophilia and low haemoglobin levels as explained in Table. The bicornuate uterus was diagnosed initially on pelvic ultrasound and later confirmed on MRI pelvis and diagnostic laparoscopy.

The patient was immediately prepared for delivery via C-section under spinal anaesthesia and no hysterectomy was required. A female baby weighing 1.7 kg was delivered with an APGAR score of 8/10 and was then handed over to the paediatrician. After delivery, complete placental removal was performed, and the uterus was exteriorised to confirm the diagnosis of bicornuate uterus. No hysterectomy or septoplasty was performed, as shown in Figure1. Postoperatively, the patient was vitally stable. The baby remained in hospital for seven days on IV fluids and IV antibiotics, later when food was tolerated she was discharged with all precautions for prematurity.

Discussion

The case presented is an illustration of the complex medical complications observed in pregnancies accompanied by preterm labour following early rupture of membranes (PPROM) and associated with a bicornuate uterus. The previously documented correlation between bicornuate uterus and unfavourable obstetric outcomes such as failure to progress in labour, placental abnormalities, and foetal malpresentation has been affirmed. Research on the risk of PPROM has identified that this occurs more frequently in women with uterine anomalies, highlighting why the early diagnosis of such condition plays a crucial role.

The management strategy adopted in this case complies with existing recommendations, emphasising the importance of timely delivery to reduce maternal and foetal risks. This approach incorporates several factors: gestational age, foetal status, and maternal condition, all of which play an important role in determining the optimal timing and mode of delivery. Moreover, choosing not to have hysterectomy alongside the caesarean section reflects current evidence, as studies highlight the increased obstetric risks associated with a bicornuate uterus, yet generally do not advocate hysterectomy in such cases. Instead, surgical interventions are typically considered only for recurrent PPROM or a high risk of future uterine rupture, as explained by Kadour et al.[5]

The perinatal outcomes evident, here show the same trend as earlier studies have shown that there is a higher chance for complications during pregnancy when rupture of membranes and uterine anomalies occur. With many studies highlighting the increased incidence of prematurity, low birth weight, and significant neonatal complications in such cases, the importance of ongoing antenatal counselling and neonatal intensive care support becomes clear.[6]

Furthermore, the successful surgical management in this case which led to the correction of bicornuate uterus, highlights the potential role of surgical evaluation in understanding and diminishing future obstetric risks. In addition, studies on the outcomes of uterine septoplasty and the decision for no hysterectomy as pregnancy is not possible after that in women with uterine anomalies that indicates the prevention of recurrent abortion, premature birth, and other obstetric complications in future pregnancies. However, research on these interventions is still ongoing. Nevertheless, the issue of the prolonged effects of surgical interventions in obstetric outcomes becomes more complex and requires more longitudinal studies to prove its efficacy and safety.

Conclusion

This case report highlights the issues of clinical management of preterm prelabour rupture of membranes in a bicornuate unicollis uterus pregnancy. Although the woman presented late, there was no liquor, breech presentation and intrauterine infection was identified at 30 weeks gestational age, a right decision-making and timely caesarean birth ensured a good maternal and neonatal outcome. The case highlights the sensitivity of early diagnosis of Müllerian anomalies, intensive monitoring of the fetus during pregnancy, and multidisciplinary team care of obstetricians, neonatologists, and radiologists. In high-risk pregnancies, such as uterine anomalies and PPROM, with personalized management and close monitoring during intrapartum care, it will be possible to attain satisfactory results.

Consent: Written consent was provided by the patient for publishing her case.

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Conflict of Interest: None.

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