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Nursing Perspectives on Managing Pregnancy with Unicornuate Uterus: A Case Report

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ABSTRACT

Background:

`Unicornuate uterus is a rare congenital uterine malformation resulting from incomplete development of one of the paired Müllerian ducts. It is associated with adverse reproductive outcomes such as infertility, recurrent pregnancy loss, increased miscarriages, preterm labor and adverse pregnancy outcomes. Diagnosis is often incidental during routine ultrasound or advanced imaging like 3D ultrasonography. Management of pregnancy in women with unicornuate uterus requires a multidisciplinary approach due to the increased risk of cervical insufficiency and other complications. Prophylactic cervical cerclage is considered an effective intervention to prevent preterm birth in such high-risk pregnancies. Nursing care plays a crucial role in antenatal monitoring, patient education, and supporting adherence to treatment plans.

Case summary:

We report the multidisciplinary management case of a 27-year-old pregnant woman with a unicornuate uterus who conceived naturally and underwent prophylactic cervical cerclage to prevent cervical insufficiency. Emphasizing nursing and midwifery perspectives.

Discussion:

Our present case study described the successful antenatal management of a 27-year-old woman with a unicornuate uterus. Despite a poor obstetric history observed natural conception and received prophylactic cervical cerclage to prevent cervical insufficiency. Although the patient remained asymptomatic inspite of associated anomalies throughout pregnancy. Early detection through routine ultrasound and 3D imaging enabled timely multidisciplinary intervention. Nurses and midwives played a pivotal role through regular antenatal monitoring, psychological support, and individualized health education. Counseling on signs of preterm labor, activity restriction, and hygiene maintenance empowered the patient to participate actively in her care. This case emphasizes that with early intervention and vigilant nursing care, favorable maternal and fetal outcomes are achievable even in complex pregnancies involving uterine anomalies.

Keywords: Unicornuate uterus, cervical cerclage, Müllerian anomalies, high-risk pregnancy, natural conception, nursing management.

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INTRODUCTION

Unicornuate uterus is a rare congenital Müllerian duct anomaly characterized by incomplete development of one uterine horn, resulting in a single-horned uterus. It accounts for approximately 5% of all Müllerian anomalies and presents significant obstetric challenges such as infertility, recurrent miscarriage, preterm labor, and fetal malpresentation [1,2]. Women with this anomaly frequently have associated renal tract abnormalities, including unilateral renal agenesis, due to the shared embryological origin of the urinary and reproductive systems [3].

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Cervical insufficiency often complicates pregnancies in women with unicornuate uterus, leading to second-trimester pregnancy losses or preterm births. Cervical cerclage is a recognized intervention to reinforce the cervix and improve pregnancy outcomes in such cases [4,6]. Early diagnosis using advanced imaging techniques like 3D ultrasonography enables tailored care and risk management [2,5]. Nursing and midwifery care are critical in providing continuous assessment, patient education, and emotional support throughout the pregnancy.

UNICORNUATE UTERUS:

A unicornuate uterus is a rare congenital condition where one side of the uterus develops incompletely or fails to develop, resulting in a single uterine horn. This abnormality arises during the early stages of fetal development when the paired Müllerian ducts fail to fully form or fuse properly.

Women with this condition often face challenges related to reproduction, such as difficulty conceiving, higher chances of miscarriage, premature labor, and complications during delivery.

The reduced size and altered shape of the uterus limit its capacity to support a growing pregnancy, which may lead to pregnancy loss or preterm birth. Diagnosis is usually made during routine pelvic examinations or investigations for fertility problems, often supported by imaging techniques like ultrasound or MRI. Managing pregnancy in these women requires careful monitoring, as they are at increased risk of complications. Preventive strategies, such as surgical reinforcement of the cervix, may be considered to improve pregnancy outcomes.

Image: Unicornuate uterus . source-cleveland clinic

CERVICAL CERCLAGE:

Procedure Overview

Cervical cerclage is a surgical procedure used during pregnancy to help prevent premature birth or pregnancy loss in women with a weak or short cervix. The procedure involves placing a strong stitch around the cervix to reinforce it and keep it closed as the baby grows.The cerclage is usually done between 12 and 14 weeks of Pregnancy

when there are signs of cervical insufficiency or a history of recurrent mid-trimester pregnancy losses. It can also be done later in pregnancy if the cervix shows signs of opening too early.

The most commonly used method is the McDonald technique, which involves placing a purse-string type suture high around the cervix through the vagina. In some cases, the Shirodkar method is used, which places the stitch deeper, or an abdominal cerclage is performed when vaginal access is not suitable.

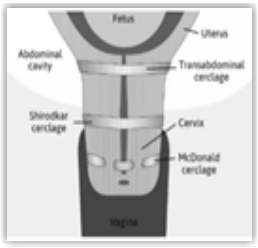

Image: cervical encirclage

The procedure is typically done under regional anesthesia and takes less than an hour. After placement, the woman is observed for signs of cramping, bleeding, or infection. The stitch is usually removed at 36–37 weeks of pregnancy unless early removal is needed due to complications.

CASE PRESENTATION

A 27-year and 7-month-old woman, gravida 4, abortion 3, para 0, live 0 (G4A3P0L0), at 33 weeks and 3 days gestation (EDD 12/07/2025, LMP 05/10/2024), presented for routine antenatal care. The current pregnancy was naturally conceived without assisted reproductive techniques. Her obstetric history was notable for three previous pregnancy losses in the first or second trimester.

Prior to conception, a routine pelvic ultrasound detected an abnormal uterine shape. Subsequent 3D transvaginal ultrasonography confirmed a unicornuate uterus without a

0	Gestational Age	Event
05/10/2024	0 weeks	Last Menstrual Period (LMP)
Nov 2024	5–6 weeks	Pregnancy confirmed
Dec 2024	8–9 weeks	Routine USG suggests uterine anomaly
Dec 2024	10 weeks	3D USG confirms unicornuate uterus
Jan 2025	11wks 04days	NT measures 1.0mm, nasal bone visualized, SLIUP of 11 weeks 4 days
Jan 2025	14–16 weeks	Non-visualization of left kidney (renal agenesis) detected
Jan 2025	16 weeks	Mild splenomegaly noted, asymptomatic
Feb 2025	~18–19 weeks	Prophylactic cervical cerclage performed
7/03/ 2025	21 weeks	Cervical encirclage done indication: ANC with unicornuate uterus, cervix: 3-3.5cm and dynamic changes
Mar 2025	~24 weeks	Regular antenatal follow-up, normal fetal growth
Apr 2025	26 weeks	Post cervical encirclage , cervix length- 3.8cm.
Apr 2025	~28–30 weeks	Continued surveillance, asymptomatic patient
24/5//25	33 weeks	Readmission with AFI-7 as a case of oligohydramnios. USG confirms S/D-1.66, EFW- 1660+/-246gms.
27/05/2025	33 wks + 3days	Current stable status

Table 1: Timeline of Major Events

rudimentary horn.

She was asymptomatic with no surgical interventions performed. Counseling addressed risks of miscarriage, preterm delivery, and fetal growth restriction.

Renal ultrasound showed non-visualization of the left kidney consistent with unilateral renal agenesis; the right kidney demonstrated compensatory hypertrophy and normal function. Mild spleenomegaly was noted incidentally but remained clinically asymptomatic.

At 21 weeks gestation, a prophylactic cervical cerclage was placed to prevent cervical insufficiency and preterm birth. The patient was monitored regularly with antenatal visits and ultrasound assessments. Throughout the pregnancy, she remained asymptomatic with no complications.

Other Investigations

·**Laboratory Tests:** Normal complete blood count, liver and renal function tests**.** hemoglobin level- 12.3 gm/dl, INR 1.3, TSH-0.75, blood group-AB+ve, viral markers- non reactive. Urine RE & ME no abnormality detected.

·**Pelvic Ultrasound:** Indicated uterine anomaly .

·**3D Transvaginal Ultrasound:** Confirmed unicornuate uterus without rudimentary horn and Non-visualization of left kidney, right kidney hypertrophied but functional.Mild splenomegaly without clinical symptoms.

Management:

The patient received multidisciplinary care involving obstetricians, radiologists, and nursing staff. Prophylactic cervical cerclage was performed at 21 weeks to reduce the risk of preterm birth. The patient was advised pelvic rest and followed with serial ultrasounds for cervical length and fetal growth monitoring.

Nursing Problem Priorities in Cervical Insufficiency:

The management of cervical insufficiency in pregnancy requires a structured and multidisciplinary nursing approach. The following nursing care priorities are essential to ensure optimal maternal and fetal outcomes:

1.Prevention of Preterm Labor:

Initiating timely interventions such as bed rest, hydration, and medication as prescribed to reduce uterine irritability and delay premature uterine contractions.

2.Assessment for Cervical Cerclage:

Collaborating with the obstetric team to evaluate the need and timing for cerclage placement based on the patient's history, clinical findings, and gestational age.

3.Surveillance of Cervical Length:

Performing or assisting in routine transvaginal ultrasound assessments to monitor cervical shortening or funneling, which may indicate risk of pregnancy loss.

4.Infection Control:

Maintaining strict hygiene practices and monitoring for signs of infection, such as vaginal discharge, fever, or uterine tenderness, which can compromise cervical integrity.

5.Health Teaching and Compliance:

Educating the patient on recognizing warning signs like pelvic pressure, contractions, or spotting, and emphasizing the importance of rest and adherence to medical advice.

1.Fetal Surveillance:

Ensuring regular fetal heart monitoring and growth assessments to promptly identify any distress or intrauterine compromise.

2.Management of Maternal Comorbidities :

Assisting in the control of existing maternal health issues such as infections, anatomical anomalies, or chronic diseases that may contribute to cervical insufficiency.

Nursing Care and Midwifery Management

Assessment and Monitoring:

·Continuous monitoring of maternal vital signs, fetal heart rate, and signs of preterm labor or infection.

·Post-cerclage observation for bleeding, infection, or membrane rupture.

Figure-1 Image source Ultrasonographic images of patient

Patient Education and Counseling:

·Explained uterine anomaly and associated pregnancy risks.

·Instructed on warning signs like bleeding, contractions, or fluid leakage requiring urgent care.

·Emphasized adherence to follow-ups and investigations.

Pre- and Post-Cerclage Care:

·Emotional and physical preparation for cerclage procedure.

·Following cervical cerclage surgery, the client is typically advised to maintain modified bed rest for several days, sometimes in a slight Trendelenburg position, to reduce pressure on the cervical sutures. After this initial recovery period, most clients may gradually resume normal daily activities, unless otherwise directed by the healthcare provider.

·Advised activity restriction including pelvic rest and avoidance of sexual intercourse.

·The client should be educated about the timing and purpose of cerclage removal, which is usually planned between 36 and 38 weeks of gestation. This procedure is commonly done without the need for anesthesia or may require only minimal pain relief.

·It is crucial to inform the client about warning signs that require immediate medical attention, such as lower abdominal pain, vaginal bleeding, leakage of fluid, fever, or uterine contractions. These may indicate the onset of preterm labor or infection and may necessitate urgent removal of the cerclage to ensure maternal and fetal safety

Health Teaching for Home Care:

·Encouraged rest, balanced nutrition, and hydration.

·Promoted perineal hygiene and discouraged douching or tampon use.

·Taught self-monitoring for preterm labor symptoms.

·Offered psychological support and referral if needed.

Coordination and Documentation:

·Ensured communication within healthcare team.

·Maintained detailed documentation of all care and patient responses.

Outcome and Follow-up

At 33 weeks and 3 days gestation, the patient remains asymptomatic with stable maternal and fetal status. Delivery planning is underway at a tertiary care center specializing in high-risk pregnancies.

DISCUSSION

Pregnancy with unicornuate uterus is high-risk, with the increased miscarriage and preterm birth rates [1,2]. Early diagnosis by 3D ultrasound allows tailored interventions and monitoring [2,5]. Cervical cerclage reduces cervical insufficiency-related losses and improves perinatal outcomes [4,6]. Renal anomalies common in this population require evaluation to avoid complications [3]. Nursing care and education are essential for early detection of complications and patient compliance, which directly affect pregnancy success [6].

CONCLUSION

This case emphasizes the critical nursing role in managing pregnancy complicated by unicornuate uterus. Comprehensive assessment, education, and supportive care contribute significantly to positive maternal and fetal outcomes. Multidisciplinary collaboration and vigilant nursing care ensure safety and improved quality of care for such complex pregnancies.

ETHICAL CONSIDERATION:

For this case study we have taken into consideration of ethical issues. A written informed consent was taken from the participant for publication of this case report and any accompanying images.

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Conflict of interest: Nil

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