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PLACENTAL INFARCTION: ALWAYS PATHOLOGICAL? A CASE OF BENIGN PLACENTAL INFARCT.

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ABSTRACT

Background: Placental infarction is a condition where placental tissue dies due to poor blood flow from the mother. This is often linked to maternal health issues like high blood pressure, diabetes, and blood clotting disorders. It can cause problems like restricted fetal growth and stillbirth. When infarctions are widespread or multiple, outcomes for mother and baby are often poor. Small, isolated infarctions might not be significant, but there's limited evidence to confirm this.

- **Case:** We present a 24 -year-old gravida 2 para 1+0 woman with an uneventful pregnancy, normal fetal growth, and spontaneous vaginal delivery at term. Placental examination revealed a single, well-demarcated infarct 5*5 cm in greatest dimension. There were no maternal risk factors (hypertension, preexisting diabetes, thrombophilia) and no neonatal complications.
- **Conclusion:** This case highlights that isolated small placental infarcts may occur in otherwise normal pregnancies without adverse outcomes, underlining the importance of correlating placental findings with the clinical context.

INTRODUCTION

Placental infarction occurs when maternal blood supply to villous tissue is interrupted, resulting in ischemic necrosis. Infarctions are strongly associated with preeclampsia, chronic hypertension, diabetes, and thrombophilia.

The clinical impact depends on extent and distribution:

Extensive infarction (>10–15% placental volume): associated with intrauterine growth restriction (IUGR), fetal hypoxia, and stillbirth.

Small, isolated infarcts: sometimes found in normal term pregnancies and considered clinically insignificant.

Few reports emphasize this benign aspect, making such cases important to report.
We present a case of a single placental infarct of 5 *4.6 cm in an otherwise uneventful pregnancy with a favorable outcome.

Case Presentation

We present the case of a- 24 –year-old woman in her second pregnancy with previous one normal vaginal birth at term. She booked at 11+4 weeks of pregnancy.

Antenatal course= At each antenatal visit , her BP was normal with no proteinuria. At Routine anomaly scan a heterogeneous, avascular mass noted at the anterior edge of placenta measuring 5.6* 4 cm suspicious of Chorioangioma was made . Rest of anomaly scan along with Doppler of umbilical artery was normal so plan of regular 2-3 weekly growth scans and elective Induction of labour at 38 weeks was made. Her pregnancy remained uneventful and regular growth scans were normal with no change in size of cystic lesion noted.

Intrapartum = she presented in labour ward with spontaneous labour pains at 37+5 weeks and delivered vaginally with intact perineum. A baby girl born weighed 3.52 kg with APGAR Score of 9 and 10 at 1 and 5 minutes respectively **.**

Gross Placental examination= The placenta weighed 500 g consistent with gestational age . Gross examination revealed a single , well circumscribed , firm , pale infarct measuring 2.5 cm on maternal surface
. Umbilical cord and membranes appeared normal

Histopathology confirmed coagulative necrosis consistent with infarction measuring 5.0*5.0 cm. membranes were edematous and umbilical cord was twisted with 3 blood vessels

Postpartum = Course remained uneventful and mother and baby discharged on 2nd post natal day in healthy and stable condition**.**

DISCUSSION

Placental infarction is usually a marker of uteroplacental insufficiency.

The underlying cause of this condition is often systemic or localized vascular disease in the pregnant woman like chronic nephritis, primary hypertension, , diabetes and Thrombophillia.

Placental infarction can be divided into acute (red) and chronic (white) infarction.

The clinical impact depends on size and frequency:

Large or multiple infarcts are associated with IUGR, oligohydramnios, preterm delivery, stillbirth.

Small, isolated infarcts occur in up to 20–25% of normal term pregnancies without pathology (Redline, 2018).

Placental infarction typically occurs at the placental edge, often appearing as a thick yellow-white fibrinoid ring that is multifocal. While large of complete placental infarctions are rare,
those exceeding 10% pose a threat to the fetus. Infarctions of less than 5% do not affect placental function(Yun-Zhu Wu,2024)

Our case demonstrates that a single infarct <5 cm can be incidental, with no maternal vascular disease or fetal compromise. This highlights the importance of correlating placental pathology with clinical context.

Clinical significance: important to avoid over interpretation; presence of a small isolated infarct does not mandate maternal thrombophilia workup unless recurrent or associated with adverse outcomes.

This case adds to evidence that **placental infarction is not always pathological** and that context is key in interpretation.

Differential diagnosis

Differential Diagnosis of Placental Infarct

Other placental lesions that may mimic infarction include:

1. Placental abruption (retroplacental hematoma): hemorrhagic clot, villi compressed but not necrotic.

2. Villitis of unknown etiology (VUE): lymphocytic infiltration and villous destruction, not coagulative necrosis.

3. Chorioamnionitis: neutrophilic infiltrates in membranes and chorionic plate.

4. Massive perivillous fibrin deposition (MPFD): fibrin encasing villi, but villi remain intact.

5. Intervillous thrombosis: localized maternal clotting within intervillous space, villi usually preserved.

6. Molar pregnancy: hydropic villi with trophoblastic proliferation, not infarction.

Histopathology in our case confirmed infarction by the presence of villous coagulative necrosis without inflammation.

Conclusion

Small, isolated placental infarcts (5 cm or small) may occur in otherwise normal pregnancies and may not impact maternal or neonatal outcomes.

Placental pathology must be interpreted alongside clinical findings to avoid unnecessary maternal investigations.

Awareness of benign placental infarcts prevents over diagnosis and anxiety for patients.

Learning Points

1. Not all placental infarcts are clinically significant.

2. Small isolated infarcts (5 cm or less <5% placental mass) can be incidental findings.

3. Histopathology is essential to confirm infarction and rule out mimics.

4. Clinical correlation is crucial to determine significance**.**

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