Access this article online

Quick Response Code:

Website: www.pogsjournal.org

DOI: 10.4103/pjog.pjog_20_25

Placental chorangiosis – A case report and clinical insights

H. N. Darshan[1], Priyanka Yoga Purini[1], Vijayan Sharmila[1], Jyoti Verma[2]

Abstract:

Chorangiosis is a placental vascular abnormality characterized by excessive capillarization in terminal chorionic villi, often associated with chronic placental hypoxia. It is observed in 5%–7% of placentas from neonates admitted to neonatal intensive care units and correlates with adverse maternal and fetal outcomes. We report a case of a chorangiosis of the placenta revealed in an 18-year-old primigravida who presented with moderate anemia, fetal growth restriction, oligohydramnios, and underwent elective cesarean section at 36 + 5 weeks. Chorangiosis has been linked to adverse outcomes, including stillbirth and maternal morbidity. This case highlights the importance of considering chorangiosis in the differential diagnosis of placental lesions with atypical ultrasound features. Early recognition, close fetal surveillance, and timely delivery are crucial for optimizing perinatal outcomes in such scenarios.

Keywords:

Chorangioma, chorangiomatosis, chorangiosis, fetal growth restriction, hypoxia

Introduction

The placenta is a vital organ in pregnancy, acting as the primary interface for maternal-fetal exchange of gases, nutrients, and waste products. Any structural or functional abnormality of the placenta may significantly impact pregnancy outcomes, particularly due to its role in oxygen transfer to the fetus. Villous capillary abnormalities, such as chorangiosis and chorangiomatosis, can emerge as adaptive responses to chronic fetal hypoxia. These changes often indicate underlying maternal, fetal, or uteroplacental pathologies. Histologically, chorangiosis is defined by Altshuler's criteria (1984) as the presence of ten or more capillaries in at least 10 terminal villi, in three or more noninfarcted areas of the placenta under × 10 objective magnification.[1] It is considered a marker of chronic intrauterine hypoxia. Chorangiomatosis, although similar in capillary proliferation, involves diffuse or focal proliferation within the stem and intermediate villi. Chorioangioma, on the other hand, is a nontrophoblastic benign vascular tumor arising from the chorionic mesenchyme.[2] Chorangiosis is a rare finding in normal pregnancies but is more prevalent in compromised gestations. It has been reported in 5%–7% of placentas from neonates admitted to neonatal intensive care units (NICUs).[1] High-altitude populations, such as those in Nepal, show increased incidence due to chronic low ambient oxygen pressures.[1] Chorangiosis is typically associated with chronic hypoxic patterns, categorized as preuterine (maternal anemia, smoking, diabetes, and high altitude), uterine (preeclampsia, uteroplacental insufficiency), and postuterine (fetal vascular obstruction, thrombosis) causes. Adverse outcomes linked to chorangiosis include intrauterine growth restriction, stillbirth, low birth weight, congenital malformations, cerebral palsy, and low Apgar scores. Maternal complications may include placental abruption and postpartum hemorrhage (PPH).[3]

Case Report

An 18-year-old unbooked primigravida presented to our outpatient department at

Departments of [1]Obstetrics and Gynecology and [2]Pathology, All India Institute of Medical Sciences, Mangalagiri, Andhra Pradesh, India

Address for correspondence:
Dr. Vijayan Sharmila, Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, Mangalagiri, Andhra Pradesh, India.
E-mail: sharu_jipmer@yahoo.co.in

Submitted: 11-Jun-2025
Revised: 03-Aug-2025
Accepted: 10-Aug-2025
Published: 29-Sep-2025

How to cite this article: Darshan HN, Purini PY, Sharmila V, Verma J. Placental chorangiosis – A case report and clinical insights. Philipp J Obstet Gynecol 2025;49:177-9.

34 + 5 weeks of gestation for routine antenatal evaluation. She has been a known case of moderate anemia for 20 weeks of gestation. On general physical examination, she was pale; her vital signs were stable, with a normal blood pressure. Abdominal examination revealed a uterus corresponding to 30 30-week age of gestation with reduced liquor clinically and a normal fetal heart rate of 140 bpm. Ultrasonography revealed a single live intrauterine fetus corresponding to 30 + 5 weeks with an estimated fetal weight of 1685 g, which was clinically suggestive of fetal growth restriction (FGR). Amniotic fluid index (AFI) was 4.8 cm, indicating oligohydramnios. Doppler studies were normal. A well-defined hypoechoic lesion measuring 5.6 cm × 4.2 cm with internal vascularity was identified within the placenta near the insertion of the umbilical cord, suggestive of probable chorangioma [Figure 1]. The patient was admitted for monitoring and supportive care. Intravenous hydration was initiated. Serial ultrasonography with fetal biometry was conducted every 2–3 weeks, AFI, Doppler studies, and nonstress test were conducted every 3 days. On serial monitoring with AFI and Doppler studies, there was no improvement in AFI, even with intravenous hydration, and Doppler derangements were noted in the umbilical artery. Persistent oligohydramnios with FGR warranted corticosteroid administration at 36 weeks for fetal lung maturity. At 36 + 5 weeks, lower segment cesarean section was performed in view of persistent oligohydramnios with deranged Dopplers. A female baby weighing 2050 g was delivered with Apgar scores of 8 and 9 at 1 and 5 min, respectively. Intraoperatively, liquor volume was scanty and clear, and blood loss was minimal. Gross examination of the placenta was unremarkable [Figure 2] and was sent for histopathological examination. Microscopic evaluation showed numerous tertiary villi with central mesenchymal cores, each containing more than 10 capillaries, consistent with chorangiosis [Figures 3 and 4]. These findings were present in multiple fields, fulfilling Altshuler's diagnostic criteria. The umbilical cord vessels appeared histologically normal. The maternal and neonatal postoperative periods were uneventful.

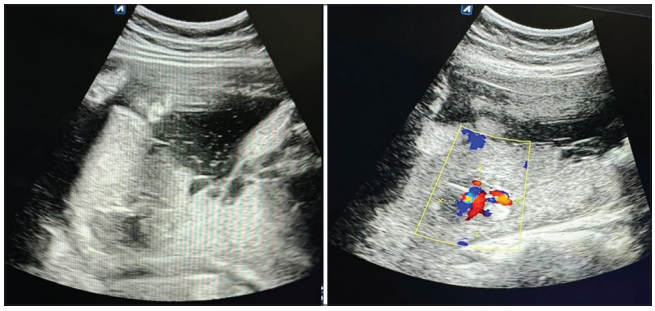

Figure 1: Gray-scale ultrasonography showing a well-defined hypoechoic lesion within the placenta near the cord insertion, suggestive of probable chorangioma (left), and color Doppler ultrasonography of the same lesion demonstrating internal vascularity (right). (Obtained from the image archives of the Department of Obstetrics and Gynecology, Section of Ultrasound, AIIMS Mangalagiri). S/O: Suggestive of

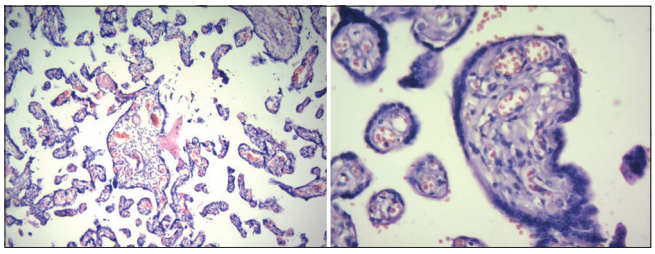

Figure 3: Histopathology showing numerous tertiary villi with central mesenchymal cores, each containing more than 10 capillaries, consistent with placental chorangiosis (×10, left), and higher magnification showing villi with multiple capillaries (×40, right). (Obtained from the image archives of the Department of Pathology, AIIMS Mangalagiri)

Discussion

The histopathological features of the placenta provide crucial insights into in utero conditions affecting

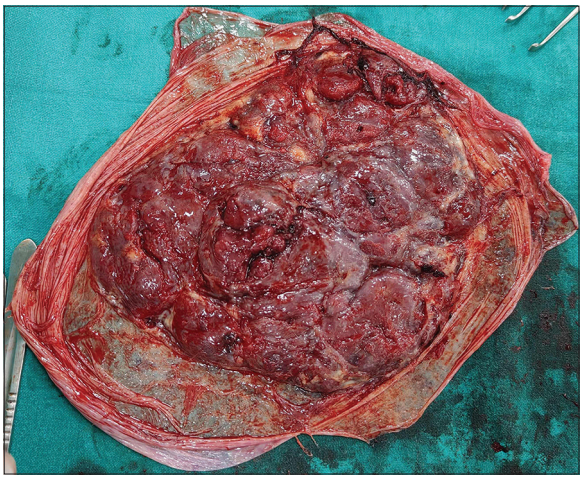

Figure 2: Gross image of placenta (maternal side). (Obtained from the image archive of the Department of Obstetrics and Gynecology, Section of Intraoperative images, All India Institute of Medical Sciences, Mangalagiri)

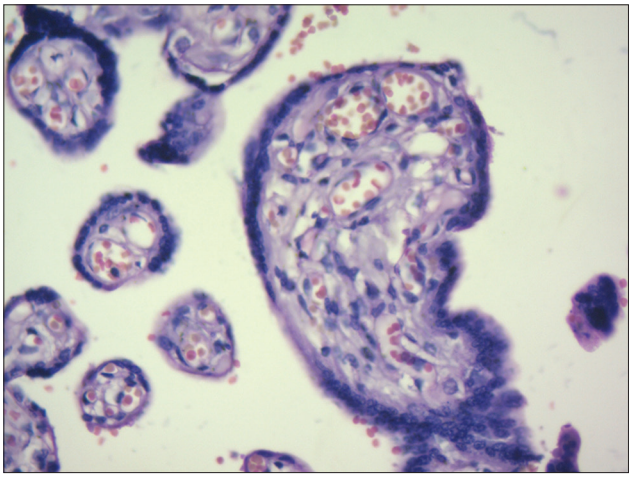

Figure 4: Histopathological examination suggestive of placental chorangiosis (×40). (Obtained from the image archives of the Histopathology Department, All India Institute of Medical Sciences, Mangalagiri)

fetal development. The presence of chorangiosis suggests a chronic adaptive response to a hypoxic environment.[4] Chorangiomas are typically associated with polyhydramnios, fetal hydrops, or high-output cardiac failure due to arteriovenous shunting. They can lead to maternal complications such as preterm labor, abruption, and PPH.[5] Interestingly, our patient presented with oligohydramnios and FGR– features more consistent with chronic hypoxia and chorangiosis rather than vascular tumors. This discordance highlights the limitations of imaging alone in differentiating placental lesions and emphasizes the role of histopathology. Color Doppler imaging aids in distinguishing chorangiomas from other placental masses such as fibroids, hematomas, teratomas, and demised twins. T2-weighted magnetic resonance imaging also helps in diagnosing vascular tumors by highlighting hemangioma-like signal intensity.[2] Grossly, chorangiomas appear as well-demarcated, purplish-red masses with a fleshy texture, while microscopically they lack villous structures – unlike chorangiosis or chorangiomatosis. According to a case–control study by Vafaei *et al*., chorangiosis is associated with maternal conditions such as diabetes mellitus, preeclampsia, infections, and drug intake. The fundal placental location was more frequent in chorangiosis cases. They also found significantly higher rates of cesarean section and adverse neonatal outcomes, including low birth weight, low Apgar scores, NICU admissions, and congenital anomalies.[1] In another retrospective study by Alayed *et al*., no association was found between chorangiosis and maternal age, body mass index, parity, or gravidity. However, significant associations were observed with recurrent pregnancy loss, intrauterine fetal death, and lower 5-min Apgar scores.[6] In addition, chorangiosis has been reported in placentas from COVID–19-positive mothers, raising concerns about its implications in infections causing placental hypoxia.[6] Our patient had moderate anemia and FGR – both contributing to a hypoxic intrauterine environment and supporting the diagnosis of chorangiosis.[1] Although radiological imaging suggested a chorangioma, the histological findings confirmed otherwise. This case illustrates the importance of correlating clinical, radiological, and pathological data for accurate diagnosis.

Conclusion

A well-defined focal hypoechoic lesion with internal vascularity in the placenta, despite radiologically suggestive of being a chorioangioma, if it presents with FGR and oligohydramnios, other pathologies of the placenta, like chorangiosis and chorangiomatosis, should be kept in mind when considering other differentials. Proper antenatal follow-up and timely interventions should be taken as these findings are associated with adverse perinatal outcomes. These patients should have an institutional delivery where appropriate expertise and NICU facilities are available. Obstetricians should be able to anticipate, prevent, and treat antenatal and intrapartum complications associated with this condition.

Acknowledgment

The authors would like to acknowledge support received from the administration, staff, and residents of the Department of Obstetrics and Gynecology, AIIMS, Mangalagiri.

Authorship contributions

Darshan HN - Involved in the data curation, writing of the original draft.

Priyanka Yoga P - Involved in conceptualization, methodology, review and editing of the draft.

Vijayan Sharmila - Involved in conceptualization, methodology, review and editing of the draft.

Jyoti Verma - Involved in the data curation, review and editing of the draft.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Vafaei H, Karimi Z, Akbarzadeh-Jahromi M, Asadian F. Association of placental chorangiosis with pregnancy complication and prenatal outcome: A case-control study. BMC Pregnancy Childbirth 2021;21:99.
2. Patidar R, Gowdra Revannasiddappa K, Mestha S. Watchful expectant management of a giant placental chorioangioma with favorable maternal and fetal outcomes: A case report. Cureus 2023;15:e39496.
3. Staribratova D, Milchev N. Placental chorangiosis associated with abruption and hypoxia. Akush Ginekol (Sofiia) 2009;48:44-6.
4. Baergen RN, Matrai C. Chorangiotic lesions, benign tumors, and heterotopias. In: Baergen RN, Burton GJ, Kaplan CG, editors. Benirschke's Pathology of the Human Placenta. Cham, Switzerland: Springer International Publishing; 2022. p. 821-35.
5. Kodandapani S, Shreshta A, Ramkumar V, Rao L. Chorioangioma of placenta: A rare placental cause for adverse fetal outcome. Case Rep Obstet Gynecol 2012;2012:913878.
6. Alayed N, Arafah MA, Alkhamis WH, Akkour K, AlMalki GA, Alomari MA, *et al.* Placental chorangiosis: Clinical risk factors and pregnancy outcomes. Clin Exp Obstet Gynecol 2024;51:79.