Journal of Rare Cardiovascular Diseases
ISSN: 2299-3711 (Print) | e-ISSN: 2300-5505 (Online)
www.jrcd.eu
RESEARCH ARTICLE

Placental Chorioangioma — A Silent Threat to the Fetus: A Case Report

Kalpana L[1]*, Shanthi E[2]
[1]Post graduate, Department of Obstetrics and Gynaecology, Saveetha Medical College, Saveetha University, Chennai, Tamil Nadu, India
[2]Professor, Department of Obstetrics and Gynaecology, Saveetha Medical College, Saveetha University, Chennai, Tamil Nadu , India

*Corresponding Author
Dr. Kalpana L

Article History
Received: 20.08.2025
Revised: 15.09.2025
Accepted: 03.10.2025
Published: 30.10.2025

Abstract: ***Background***: Placental chorioangioma, a rare benign vascular tumor of the placenta, is the most common nontrophoblastic placental tumor. While small lesions are usually asymptomatic, larger lesions (≥4 cm) are associated with significant maternal and fetal complications, including polyhydramnios, fetal anemia, and hydrops fetalis. This case report details a 24-year-old second gravida who presented at 32 weeks of gestation with a 4.8 × 3.2 cm hyperechoic placental lesion identified on ultrasound, suggestive of chorioangioma, accompanied by polyhydramnios (AFI 22 cm). MRI confirmed the diagnosis, revealing a 5.5 × 4.4 cm intraplacental lesion near the fetal surface without myometrial invasion. The patient remained asymptomatic and was managed conservatively with regular follow-up and fetal surveillance. Steroid cover was administered at 32 weeks to promote fetal lung maturity. At 38 weeks, an elective cesarean section was performed, resulting in the delivery of a healthy 2.85 kg female neonate. Placental examination revealed a 5 × 4 cm mass on the fetal surface, confirmed histopathologically as a benign vascular neoplasm composed of capillary-sized blood vessels. Both mother and neonate had uneventful recoveries. This case highlights the importance of advanced imaging, vigilant antenatal monitoring, and multidisciplinary care in achieving favorable outcomes in pregnancies complicated by placental chorioangiomas.

Keywords: Placental chorioangioma, Fetal complications, Polyhydramnios, Intrauterine growth restriction

INTRODUCTION

Placental chorioangioma is a rare benign vascular tumor of the placenta, originating from the chorionic tissue. While most chorioangiomas remain small and asymptomatic, larger lesions can lead to significant maternal and fetal complications, including polyhydramnios, fetal anemia, hydrops fetalis, and intrauterine growth restriction (IUGR). The incidence of placental chorioangiomas is reported to range from 1 in 9,000 to 1 in 50,000 pregnancies, making it a relatively infrequent pathology in obstetrics (1,2).

Histologically, chorioangiomas are composed of vascular channels within a fibrous stroma and are thought to represent a malformation rather than a true neoplasm. They are often diagnosed via prenatal ultrasonography, where they appear as hypoechoic masses near the cord insertion. Advances in diagnostic imaging and prenatal interventions have improved the detection and management of these lesions (3,4).

Clinical presentations of placental chorioangiomas are varied, ranging from incidental findings to severe complications such as fetal high-output cardiac failure and non-immune hydrops fetalis. Interventional therapies, including laser coagulation of feeding vessels and intrauterine transfusions, have shown promise in mitigating risks associated with large symptomatic tumors (4,5).

Placental chorioangioma is the most common nontrophoblastic tumor of the placenta. It is due to differentiation of local tissue with excessive proliferation of blood vessels in chorionic villi. Most placental chorioangiomas are small (<4 cm in diameter) and usually asymptomatic. However, large placental chorioangiomas (≥4 cm in diameter) are less common and can cause significant complications (6,7).

Gray-scale sonography, color flow Doppler ultrasonography, and magnetic resonance imaging (MRI) can be used to diagnose placental chorioangioma prenatally. Ultrasound findings of chorioangioma commonly reveal a hypo- or hyperechoic, well-circumscribed placental mass. Necrosis, degeneration, or calcification of the tumor may result in different ultrasonic echotextures. The application of color flow Doppler can confirm the vascular component of placental masses and differentiate chorioangiomas from other placental lesions (7,8). Placental chorioangioma appears as a heterogeneous mass on MRI, which can be used in conjunction with ultrasound findings for a more comprehensive diagnosis (8,9).

Many pregnancies with small placental chorioangiomas are asymptomatic and do not complicate the course of the pregnancy. In contrast, large placental chorioangiomas tend to be associated with perinatal complications and adverse fetal outcomes, such as polyhydramnios, preterm labor, fetal anemia, fetal growth restriction (FGR), fetal cardiomegaly or fetal heart failure, fetal hydrops, maternal mirror syndrome, and even fetal demise (6,8,9).

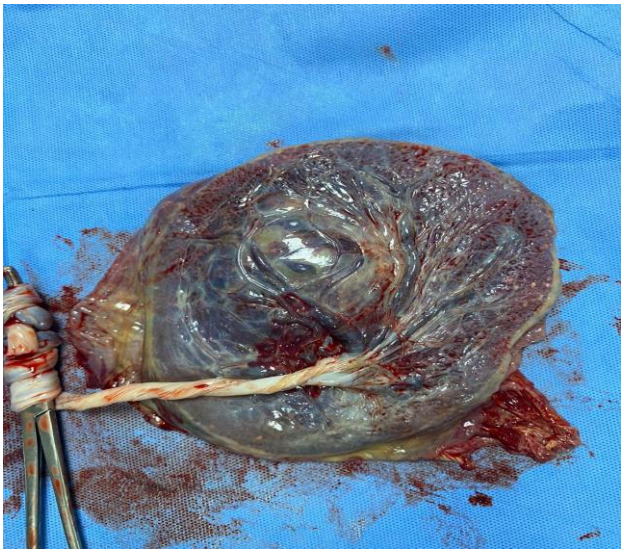
This case report aims to shed light on a unique presentation of placental chorioangioma, its diagnostic challenges, and the multidisciplinary approach required for optimal maternal and fetal outcomes.

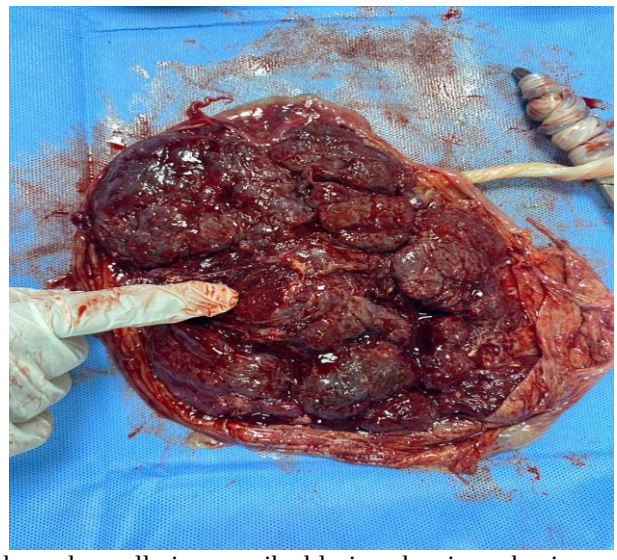
CASE REPORT

A 24-year second gravida, with one living child born vaginally, presented to us at 32weeks+2days with ultrasound reports showing a 4.8*3.2cm hyperechoic lesion in the placenta -suggestive of placental chorioangioma and AFI of 22cm.

The patient had no complaints on examination, PR-80bpm, BP-120/70mmhg, fundal height corresponding to 34-36 weeks, with the cephalic presentation, fetal heart rate was within normal limits.
The patient was not diabetic and had no other comorbidities.

MRI of the pelvis showed a gravid uterus with single intrauterine gestation, placenta measures 20.6*5.5 cm and anterior in position, no evidence of myometrial invasion, a fairly circumscribed intraplacental altered intensity lesion(T1) isointense to the placenta and peripherally hyper intense of size 5.5*4.4cm, noted in the central portion of placenta along the fetal surface. The lesion was 2.5cm medial to the site of umbilical cord insertion in the placenta. The patient was under regular follow-up. Patient was admitted and steroid cover was done. Regular ultrasound was done for fetal well-being, and it was found to be normal. The patient was admitted at 38 weeks for safe confinement. The patient underwent elective cesarean section at 38weeks+2days and delivered an alive term girl baby,2.85kg, AGA. Intraoperative and postoperative periods were uneventful. A gross placental examination showed-5*4 a cm mass in the centre of the placenta on the fetal surface.

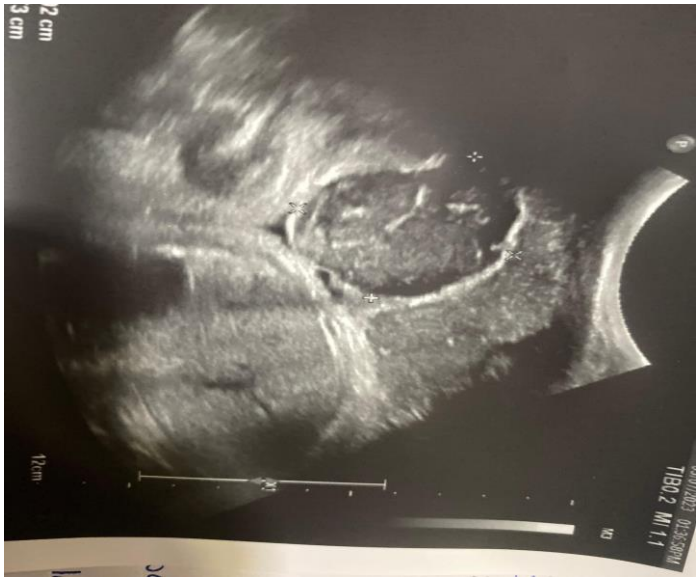




Histopathology was done and showed a well-circumscribed lesion showing a benign neoplasm composed of lobules of small capillary-sized blood vessels lined by a single layer of endothelium and enclosing red blood cells. No atypia noted.

The baby was well, and both mother and baby were discharged on postoperative day 8.

Ultrasound diagnosis: Sonographically, chorioangioma appears as a well-circumscribed, rounded, predominantly hypoechoic lesion near the chorionic plate. Grayscale and Doppler interrogation of the placenta and amniotic fluid volume are used to identify these tumours. Grey-scale findings are well-defined complex echogenic masses different from the rest of the placenta, and the tumour protrudes into the amniotic cavity near umbilical cord insertion. On Doppler, increased blood flow is seen, and the feeding vessel usually has the same pulsatile flow as that of the umbilical artery but may have an arteriovenous shunt, causing low resistance flow.



DISCUSSION

Placental chorioangiomas, although the most common nontrophoblastic tumors of the placenta, are relatively rare in clinical practice, occurring in approximately 1% of pregnancies (6). They are generally benign and asymptomatic when small; however, larger lesions (≥4 cm) are associated with significant maternal and fetal complications. In the presented case, a placental chorioangioma was identified at 32 weeks of gestation as a 4.8 × 3.2 cm hyperechoic lesion on ultrasound, confirmed by MRI as a 5.5 × 4.4 cm lesion, which shows the importance of advanced imaging in accurate diagnosis and monitoring (7,8).

The patient in this case remained asymptomatic, with no complaints or clinical features suggestive of complications such as polyhydramnios or fetal compromise. Sonographically, chorioangiomas typically present as well-circumscribed hypoechoic or hyperechoic lesions near the chorionic plate, often protruding into the amniotic cavity. Doppler ultrasonography is invaluable in identifying the vascular characteristics of the tumor, particularly its feeding vessels, which may demonstrate low-resistance, high-velocity flow akin to an arteriovenous shunt (4). This aligns with the ultrasound findings in this case, where grayscale and Doppler interrogation revealed a typical vascular lesion without evidence of significant flow abnormalities. MRI further confirmed the lesion's characteristics, showing a well-circumscribed intraplacental lesion isointense to the placenta on T1-weighted images and hyperintense peripherally. MRI is particularly useful in complex cases where precise localization and delineation of placental masses are critical for planning delivery (1).

Placental chorioangiomas are believed to arise from abnormal angiogenesis during placental development, leading to the formation of vascular lesions within the chorionic tissue (5). While many lesions are small and asymptomatic, larger tumors may function as arteriovenous shunts, diverting blood from the fetal circulation and potentially leading to complications such as fetal anemia, hydrops fetalis, and even intrauterine fetal demise (2). In this case, despite the lesion's size, there were no adverse fetal outcomes, which highlights the importance of regular monitoring and timely interventions. Polyhydramnios, a common complication associated with large chorioangiomas due to increased transudation of fluid across the tumor's surface, was present in this case with an amniotic fluid index (AFI) of 22 cm. However, the patient's stable clinical course without progressive complications suggests that the tumor's vascular activity was not severe enough to precipitate fetal or maternal compromise (3).

Management of placental chorioangiomas depends on the lesion size, vascular activity, and associated complications. For asymptomatic cases, conservative management with regular ultrasound and Doppler surveillance is appropriate. This patient underwent regular fetal monitoring, and her fetus exhibited normal growth and well-being throughout the pregnancy (10). Steroid administration at 32 weeks was a prophylactic measure to promote fetal lung maturity in anticipation of

preterm delivery, a common complication in pregnancies complicated by large placental tumors (11). Ultimately, an elective cesarean section at 38 weeks ensured safe delivery of a healthy term neonate weighing 2.85 kg, with no evidence of fetal anemia or cardiomegaly. The uneventful intraoperative and postoperative periods further demonstrate the efficacy of proactive monitoring and timely delivery in minimizing maternal and fetal risks (12). The gross examination of the placenta revealed a 5 × 4 cm mass on the fetal surface, which histopathological analysis confirmed as a benign neoplasm composed of small capillary-sized blood vessels lined by a single layer of endothelium, consistent with chorioangioma. The absence of atypia or malignant transformation is typical of these tumors and differentiates them from other vascular placental lesions (13). Histopathology plays a pivotal role in confirming the diagnosis, particularly in cases where imaging findings are inconclusive or suggest alternative pathologies such as placental teratoma or hematoma (14). The findings in this case highlight the benign nature of chorioangiomas and their potential for favorable outcomes with appropriate management.

This case highlights the importance of thorough antenatal surveillance in pregnancies complicated by placental abnormalities. Patients with a history of placental chorioangioma should be closely monitored in subsequent pregnancies, as there is a theoretical risk of recurrence or other placental abnormalities (15). Early detection through first and second-trimester ultrasounds is crucial in ensuring timely interventions and favorable outcomes. The management of placental chorioangioma requires a multidisciplinary approach involving obstetricians, radiologists, and neonatologists to optimize maternal and fetal outcomes. In this case, regular antenatal monitoring, advanced imaging techniques, and coordinated care facilitated a successful outcome despite the presence of a potentially high-risk placental lesion (16).

Key Learnings from the Case

This case highlights several key aspects of managing placental chorioangioma:

1. Importance of Imaging: Early detection and monitoring of placental lesions using ultrasound and MRI are critical for planning and management.
2. Proactive Monitoring: Regular follow-up and Doppler assessments can help identify and mitigate complications such as fetal anemia or hydrops fetalis.
3. Steroid Administration: Timely administration of steroids in cases with potential for preterm delivery supports neonatal respiratory outcomes.
4. Planned Delivery: Elective delivery at term minimizes risks associated with spontaneous labor or unforeseen complications.
5. Histopathological Confirmation: Placental examination post-delivery confirms the diagnosis and rules out malignancy.

This case demonstrates that with appropriate prenatal surveillance and timely intervention, pregnancies complicated by placental chorioangiomas can have favorable outcomes. Despite the potential for significant complications, proactive management strategies, including regular imaging, fetal monitoring, and planned delivery, ensure maternal and fetal safety. Further studies are needed to refine diagnostic criteria and optimize treatment protocols for complex cases of placental chorioangiomas (4).

CONCLUSION

Placental chorioangioma, though rare, is the most common nontrophoblastic tumor of the placenta and can lead to significant maternal and fetal complications when large in size. This case highlights the critical importance of early detection through imaging modalities such as ultrasound and MRI, which not only aid in accurate diagnosis but also facilitate effective prenatal monitoring. Regular follow-up and a multidisciplinary approach ensured favorable outcomes for both the mother and the fetus in this case.

Despite the presence of a relatively large chorioangioma and associated polyhydramnios, proactive management, including close fetal surveillance and timely steroid administration, contributed to an uneventful pregnancy course and the delivery of a healthy term neonate via elective cesarean section. Histopathological examination further confirmed the benign nature of the lesion, consistent with typical features of chorioangiomas. This case shows that even large placental chorioangiomas can result in favorable perinatal outcomes when managed appropriately. Early diagnosis, vigilant monitoring, and timely intervention are pivotal in mitigating potential complications. The insights from this case add to the growing body of evidence that supports individualized care plans for pregnancies complicated by placental chorioangiomas. Further research and case reporting are essential to optimize management strategies and improve outcomes in similar clinical scenarios.

REFERENCES

1. Hosseinzadeh P, Javadian P, Espinoza J, et al. Prenatal Therapy of Large Placental Chorioangiomas: Case Report and Review of the Literature. DOI:10.1055/s-0035-1558829. Published August 3, 2015.
2. Eldar-Geva T, Hochner-Celnikier D, Ariel I, et al. Fetal high-output cardiac failure and acute hydramnios caused by large placental chorioangioma: Case report. BJOG. 1988;95(11):1200-1203. DOI:10.1111/j.1471-0528.1988.tb06801.x.
3. Akercan F, Seyfettinoğlu S, Zeybek B, et al. High-output cardiac failure in a fetus with thanatophoric dysplasia associated with large placental

chorioangioma: Case report. J Clin Ultrasound. 2011;39(6):364-366. DOI:10.1002/jcu.20865.
4. Sepúlveda W, Wong AE, Herrera L, et al. Endoscopic laser coagulation of feeding vessels in large placental chorioangiomas: Report of three cases and review of invasive treatment options. Prenat Diagn. 2009;29(1):71-77. DOI:10.1002/pd.2197.
5. Montán S, Anandakumar C, Joseph R, et al. Fetal and Neonatal Haemodilution Associated with Multiple Placental Chorioangioma: Case Report. J Obstet Gynaecol Res. 1996;22(1):27-30. DOI:10.1111/j.1447-0756.1996.tb00934.x.
6. Cvetanovska E, Colov NP, Kahn R. Chorioangioma of the placenta associated with benign multiple neonatal hemangiomatosis. Acta Obstet Gynecol Scand. 2006;85(2):235-239. DOI:10.1080/00016340500486768.
7. D'Antonio F, Bhide A. Ultrasound in placental disorders. Best Pract Res Clin Obstet Gynaecol. 2014;28(3):429-442. DOI:10.1016/j.bpobgyn.2014.01.001.
8. Fan M, Skupski DW. Placental chorioangioma: literature review. J Perinat Med. 2013;41(6):553-560. DOI:10.1515/jpm-2013-0170.
9. Sudhakaran N, Sothinathan U, Patel SB. Best practice guidelines: Fetal surgery. Early Hum Dev. 2011;87(12):743-747. DOI:10.1016/j.earlhumdev.2011.11.006.
10. Gray DL, Crane JP. Sonographic detection of placental tumors. J Clin Ultrasound. 1984;12(8):445-448. DOI:10.1002/jcu.1870120803.
11. Sepúlveda W, Avila C, Alcalde JL. Fetal Doppler in placental chorioangioma: A report of 11 cases. Ultrasound Obstet Gynecol. 2003;22(5):437-442. DOI:10.1002/uog.911.
12. Bruch JF, Baud C, Tack I, et al. Ultrasound and magnetic resonance imaging in the prenatal diagnosis of placental chorioangioma. J Radiol. 2004;85(10):1796-1800. DOI:10.1016/S0221-0363(04)97715-3.
13. Khong TY. Placental vascular tumors. Clin Pathol. 2001;54(3):176-182. DOI:10.1136/jcp.54.3.176.
14. Ashrafganjooei T, Amiri Z, Amiri SS. Large placental chorioangioma: Prenatal sonographic findings and perinatal outcomes. Iran J Reprod Med. 2013;11(12):1033-1036.
15. Jauniaux E, Greenough A. Placental vascular anomalies. Best Pract Res Clin Obstet Gynaecol. 2007;21(3):685-696. DOI:10.1016/j.bpobgyn.2006.12.005.
16. Zalud I, Pate B. Placental chorioangioma. Semin Perinatol. 2015;39(1):7-16. DOI:10.1053/j.semperi.2014.10.007.