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Case Report
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A Rare Case of Giant Placental Chorioangioma Causing Polyhydramnios and Fetal Hydrops

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Abstract

Placental chorioangiomas are benign placental tumor. Most of them are asymptomatic with no need for specific treatment, while giant chorioangiomas may increase risk of pregnant complications. We describe a case of placental chorioangiomas diagnosed at 29+1 weeks of gestation. As the tumor progressively enlarged with polyhydramnios, further ultrasound examination indicated suggested sign of fetal hydrops. Following MDT discussion, cesarean section was performed with delivery of a female infant. Pathological examination of the placenta confirmed an infarcted chorioangioma. We highlight importance of close prenatal surveillance once the diagnosis of placental chorioangioma is made. Measurements vary depending on fetal maturity and the available neonatal support.

Keywords: Placental chorioangioma; Polyhydramnios; Fetal hydrops; Prenatal diagnosis

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Introduction

Placental chorioangiomas are benign non-trophoblastic vascular neoplasms with an estimated incidence of less than 1% [1]. Most small chorioangiomas are asymptomatic, while giant chorioangiomas, greater than 4 cm in diameter, may increase risk of pregnant complications, such as polyhydramnios, placental abruption, fetal growth restriction, fetal anemia, congestive heart failure, fetal non-immune hydrops, and even fetal death [2]. Most commonly, chorioangiomas are diagnosed during routine ultrasound examinations. Dynamic prenatal surveillance and needed intrauterine treatment are essential to prevent adverse outcomes. We hereby report a case of a spontaneous pregnancy complicated with placental chorioangioma followed by polyhydramnios and fetal hydrops.

Case Presentation

A 33-year-old female, G2P1, was diagnosed with placental chorioangioma and polyhydramnios at 29+1 week's gestation. A detailed ultrasound examination revealed a well circumscribed, hypoechoic lesion with increased vascularity. Large vessels were present within the mass in close proximity to the umbilical cord. The mass in the placenta was 5 cm × 3 cm in size. Therefore, a presumptive diagnosis of placental chorioangioma was made. Since the fetus growth remained normal and middle cerebral artery peak systolic velocity as well as amniotic fluid index was within normal limits. Close prenatal surveillance was scheduled for her. At 34+5 weeks gestation, the placental chorioangioma had increased to 10.9 cm × 10.1 cm in size. Considering possible adverse complications, she was admitted to hospital immediately. On the day of admission, she felt abdominal discomfort, no abnormality was found in cardiopulmonary auscultation. She was given oral indometacin to reduce amniotic fluid volume. A repeat ultrasound examination indicated a solid hypoechoic, heterogeneous mass, which protrudes into the amniotic cavity on the fetal surface of the placenta (10.9 cm × 10.1 cm × 4.2 cm) and polyhydramnios (amniotic fluid index: 48 cm), but the remarkable thing was sign of fetal demise. Following multidisciplinary team discussion, cesarean section was performed with delivery of a 1900 g female infant scoring 9 on the Apgar scale. During the operation, there was a 13 cm × 10 cm × 4 cm red solid mass on the fetal side of the placenta (Figure 1). The neonate was intubated and admitted to the neonatal unit. Postoperative pathological findings confirmed the diagnosis of placental chorioangioma (Figure 2). The pregnant female and her baby are discharged from hospital as perfectly cured 20 days later. The growth and neurodevelopment of the baby was normal during the 1-year postpartum follow-up.

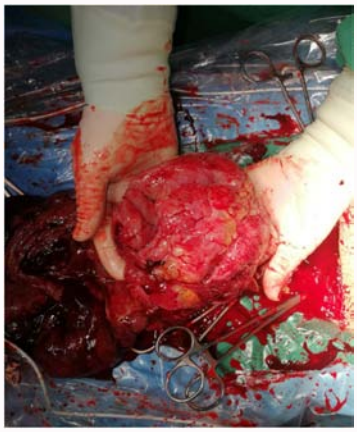

Figure 1: Macroscopic appearance of the placenta during operation. A 13 cm × 10 cm × 4 cm red solid mass on the fetal surface of the placenta near its boundary is shown.

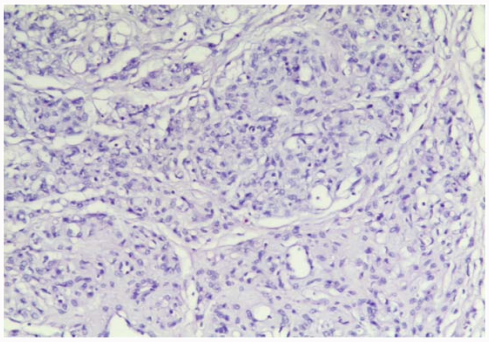

Figure 2: Histologic feature of chorioangioma.

Discussion

Chorioangioma is the most frequent non-trophoblastic benign tumor of the placenta, with an estimated incidence of 1%. It is reported that the female fetus has a higher occurrence of chorioangioma [3]. The occurrence of placental chorioangioma increases in pregnant women with maternal hypertension and gestational diabetes as well [4]. Ultrasound examination is the primary diagnostic tool, including gray-scale sonography, CDI, Three-Dimensional (3D), and 4-Dimensional (4D) ultrasound [5,6]. Sonographic features of placental chorioangioma include a hypo- or hyper-echoic well-circumscribed mass that is distinctly different from the placenta. This mass may contain an anechoic cystic area, and may or may not contain fibrous septa, which can create the appearance of a complex mass [7]. On MRI, there's no real distinction between T1WI and DWI signals for solid part of placental chorioangioma, while T2WI of parenchymal part showed low signal, which is different from the surrounding placental tissue, holds much more potential value for identifying tumor location and size [8]. Most small placental chorioangiomas do not result in clinically significant complications that require intervention, large (>4 cm) or multiple chorioangiomas increase perinatal complications [3]. These include polyhydramnios, maternal preeclampsia, preterm delivery, non-immune fetal hydrops, fetal heart failure, fetal anemia and thrombocytopenia, fetal growth restriction, fetal hydrops, fetal demise, severe neonatal microangiopathic hemolytic anemia, thrombocytopenia and neonatal death, and maternal mirror syndrome [2]. The underlying pathophysiology of placental chorioangiomas and perinatal complications are associated with arteriovenous shunting and sequestration of red blood cells and platelets by the chorioangioma [9]. Since such cases are rare and the clinical features are various, there are not consensuses on management of placental chorioangioma. Close prenatal surveillance is necessary once the diagnosis of placental chorioangioma is made. The treatment of giant placental chorioangioma varies from presence of complications and gestational age [10]. What is noteworthy is that placental chorioangioma is not indication of cesarean delivery, nor for early termination of pregnancy. If complications associated with chorioangioma appear during first or second trimester of pregnancy, corresponding measurements are optional rather than delivery. If complications develop during late trimester of pregnancy, delivery should be considered, depending on fetal maturity and the available neonatal support [3]. Once there are sign of fetal complication such as cardiac dysfunction and fetal hydrops, delivery should be strongly considered.

Conclusion

In summary, placental chorioangioma is benign non-trophoblastic vascular neoplasms which may cause unfavorable outcome, although most of them are asymptomatic. Ultrasound examination holds an essential value in diagnosis and surveillance. It has various kinds of clinical manifestation. This variability has led many people to think of it as a spectrum of symptoms rather than a single, clear-cut syndrome. Early diagnosis, close prenatal surveillance, and proper interventions critical in order to reduce fetal morbidity and mortality.

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