Placental Tumour
What could it be?

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Abstract:
Placental tumours include placental chorioangiomas, teratomas, haemangiomas, and haematomas. Placental chorioangiomas are benign vascular tumours and are the most common placental tumours, with a prevalence of 1%. Large placental chorioangiomas are rare and may lead to pregnancy complications and poor perinatal outcomes. These complications include fetal anaemia, hydrops fetalis, fetal growth restriction, polyhydramnios, and preterm delivery. We report a case of a large placental chorioangioma, the antenatal management and the maternal and fetal outcomes.

Keywords: Placenta; Chorioangioma; Anemia, fetal; Polyhydramnios; Case Report; Oman.

Placental Tumours are broadly divided into trophoblastic and non-trophoblastic tumours. The latter include chorioangiomas, teratomas, haemangiomas and haematomas. Placental chorioangiomas are benign vascular tumours and are the most common placental tumours with a prevalence of 1%. Large placental chorioangiomas are rare and may lead to pregnancy complications and poor perinatal outcomes, including fetal anaemia, hydrops fetalis, growth restriction, polyhydramnios and preterm delivery. We report a case of a large placental chorioangioma, the antenatal management and the maternal and fetal outcomes.

Case Report
A 36-year-old gravida 5 healthy woman was diagnosed with a vascular placental tumour on ultrasound at 25 weeks of gestation. The tumour was 1 x 1 cm in size, with mixed echogenicity and well-defined margins. Until then, the patient had had an otherwise normal pregnancy with a negative serology for hepatitis and HIV and normal fetal anatomy scan. The woman had no significant past medical or surgical history. She had had two previous, full-term spontaneous vaginal deliveries and two spontaneous, first-trimester abortions. The initial scan evaluated in detail the placental function, characteristics of the tumour and the fetal anatomy. There were no fetal tumours or any other anomalies noted on that scan. Follow-up scans during pregnancy showed an increase in the tumour size, with it reaching a maximum of 6 x 5 cm at 32 weeks of gestation. The tumour was within the centre of the umbilical cord insertion with a central feeding vessel [Figures 1 & 2].

A provisional diagnosis of chorioangioma was made and the patient was assessed weekly in the high-risk clinic for any signs of maternal or fetal complications. The woman was well throughout the pregnancy with no antenatal complications such
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as pregnancy-induced hypertension or gestational diabetes. The fetus was monitored closely and the mother was also asked to monitor its movements. Growth scans were performed every two weeks to exclude intrauterine growth restriction (IUGR), and a weekly biophysical profile, done by Doppler, included measurements of the middle cerebral artery peak systolic velocity (MCA-PSV). The cardiac function of the fetus was assessed and, fortunately, there were no signs of compromise such as cardiomegaly, abnormal ductus venosus (DV) waveforms, or signs of fetal hydrops. There was no evidence of polyhydramnios, IUGR or fetal anaemia on follow-up scans. At 37 weeks and 3 days of gestation, the patient complained of reduced fetal movements; a scan showed a collapsed tumour 4 x 3 cm in size with less vascularity and irregular margins. There were no changes in the Doppler measurement of MCA-PSV or in cardiac function.

Labour was induced and the patient had a spontaneous vaginal delivery of a healthy male baby of 2,730 g with Apgar scores of 9 and 10 at 1 and 5 minutes, respectively. The postnatal assessment of the baby showed no evidence of anaemia or thrombocytopenia. On macroscopic examination of the placenta, the umbilical cord was triple-vesselled and unremarkable, and the extraplacental membranes were translucent. The placentals disc was 19 cm x 16 cm x 4 cm with a trimmed weight of 666 g. Beneath the insertion of the umbilical cord, a 2 cm pale-brown intraparenchymal lesion was noted adjacent to which was a cystic space; together, these measured 4.5 cm across.

Histopathological examination of the pale area showed an infarcted chorangioma formed of a network of dilated cavernous type vessels lined by CD-31 positive endothelial cells with intervening collagenous stroma [Figure 3]. The cystic space did not have a true lining and its wall was continuous with the chorionic plate. Placental villi were appropriate for gestational age and were unremarkable.

Discussion

Placental chorioangiomas are the most common placental tumours, with a prevalence of 1%. They are thought to be hamartomatous lesions rather than true neoplasms and should be differentiated from other placental tumours.1–3 Large placental chorioangiomas measuring more than 4 cm in size are rare, with an incidence of 1:500–1:16,000, and are associated with several perinatal complications including intrauterine fetal demise and premature birth.1–8 The main differential diagnoses include chorangiosis, chorangiomatosis and rare chorangiomas with trophoblastic proliferation.

This case of a large placental chorioangioma was followed very closely during the antenatal period. Fortunately, no complications occurred for either the mother or the fetus, except that the chorioangioma became infarcted at 37 weeks of gestation, requiring induction of labour. It is known that large tumours may produce degenerative phenomena like necrosis, calcifications, hyalinisation and infarction. The infarction usually occurs spontaneously, leading to a decrease in echogenicity, tumour volume and blood flow on colour Doppler images, as observed in this case.9

Figure 1: Placental chorioangioma of 6 x 5 cm in size within the centre of the umbilical cord with a feeding vessel.

Figure 2: Well-circumscribed lesion (arrow) within the placenta just beneath the insertion of the umbilical cord (asterisk). It had a pale tan cut surface.
The recurrence risk of chorangiomas is rare, but there are occasional reports of such cases, suggesting some environmental or genetic predisposition. For example, there is a strong relationship between placental chorangiomas and gestation at high altitudes, suggesting the occurrence of vascular growth factors induced by hypoxia.

Fetal growth restriction has been reported in association with large placental tumours. The theory is not yet clear, but it could be due to these large vascular tumours acting as a physiological and functional dead space leading to placental insufficiency, chronic hypoxia, fetal compromise, fetal growth restriction and even death. Fetal anaemia could also result from these large tumours. Close monitoring with Doppler measurement of MCA-PSV, and looking for early signs of hyperdynamic circulation, are essential actions as fetal cardiomegaly is important during the antenatal period. Early detection could prevent subsequent major complications, such as fetal death by antenatal interventions like in utero fetal blood transfusion and early delivery at a reasonable gestational age. Our patient was followed very closely with weekly scans looking for early signs of fetal anaemia and biweekly growth scans to rule out fetal growth restriction.

A large series of 19 cases with giant placental chorioangiomas was reported recently. Of those, 18 resulted in a variety of fetal complications, including fetal growth restriction in 6 cases and one with one stillbirth at 34 weeks' gestation due to severe placental insufficiency and the mother’s refusal of an early delivery. Polyhydramnios was reported in three cases, out of which two required amnioreduction. This series also included the antenatal interventions performed in fetuses with evidence of hyperdynamic circulation to prevent the development of hydrops fetalis. The intervention included fetoscopic laser treatment in one case, preterm delivery in one case, and interstitial laser therapy in three cases. Other possible interventions include fetoscopic devascularisation of the tumour by suture ligation of the arterial blood supply and alcohol ablation of the feeding vessel.

Another group in Chile reported their experience with placental chorioangiomas, with 11 cases diagnosed over a 5-year period. Polyhydramnios and preterm delivery were the most common complications. They concluded that amnioreduction in selected cases may improve the perinatal outcome; fetal hydrops carries the highest risk of perinatal death, and close follow-up of cases with no associated findings at the time of diagnosis is very important.

Conclusion

Large placental chorioangioma are rare and may lead to adverse perinatal outcomes. Prenatal diagnosis of these tumours with close follow-up during the antenatal period and early intervention is crucial, and may result in a healthy mother and fetus.

References

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