Radio frequency ablation, an effective in utero treatment modality for large chorioangioma: a case report

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Introduction

• Chorioangiomas are the most common benign placental tumours. Microscopic chorioangiomas can be identified in 1% of all placentae examined at term.
• Large chorioangiomas of >5 cm are less common, they affect 1 in 3500 to 9000 births.
• Histologically, chorioangiomas are either hamartomas arising from the chorionic mesenchyme or non-trophoblastic primary placental neoplasms developed from the placental vessels as placental hemangiomas.
• Large chorioangiomas are frequently related with chronic arterio-venous shunting within the placenta and associated with pregnancy complications such as fetal anemia, fetal hydrops, polyhydramnios, intrauterine fetal growth restriction and increased perinatal mortality.
• Early antenatal diagnosis, individualised assessment, and the possibility of intrauterine treatment could play a vital role in improving the pregnancy outcome.
• We present two cases of large placenta chorioangiomas with one case requiring surgical therapy with radiofrequency ablation of tumour vessels, and this resulted in a successful outcome of a live birth at term.
• To our know knowledge, this is the third case of large placenta chorioangioma treated with radiofrequency ablation (RFA) reported in the literature and is the first case with successful outcome.

Case 1

A healthy 28-year-old PO at 24 weeks gestation with placental tumour.

• A large placenta chorioangioma measuring approximately 72x65x38 mm was observed (Figure 1A). Colour flow Doppler demonstrated several large “vessels” running from the placental insertion of umbilical cord to the tumour (Figure 1B).
• Other ultrasound fetal findings included mild cardiomegaly with mild pericardial effusion, and an enlarged umbilical vein. The fetal growth, liquor volume, and dopplers appeared to be normal.
• After administration of steroids to enhance fetal lung maturity, radiofrequency ablation (RFA) of main branching vessels within tumour was performed. This therapeutic method was chosen over laser ablation firstly due to anterior placenta creating difficulty to access tumour via fetoscope for laser treatment, and secondly because of the large feeding vessels not suitable for laser ablation. The therapeutic goal was set for ablation of deep vessels within the tumour and not the superficial feeding vessels coming towards the tumour from the umbilical cord. After the procedure, significant reduction of blood flow to the tumour was noted (Figure 2).
• Follow-up scan 1 week later revealed that the blood flow to the tumour remained reduced. She was then scanned at weekly interval to monitor fetal well-being and to ensure that the fetal status remained stable. She had an uncomplicated caesarean section at 37 weeks and 0 days.

Case 2

A healthy 41-year-old PO at 18 weeks gestation with chorioangioma near umbilical cord insertion, measuring approximately 47x44x32 mm (Figure 4A). Colour flow Doppler demonstrated several large “vessels” running from the placental umbilical cord insertion to the tumour (Figure 4B). Other ultrasound findings include dilated umbilical vein.

• There were no signs of fetal hydrops or anaemia. She was then scanned on a fortnightly basis, and the fetal well-being remained normal. The size of the choriangioma was stable. She then went through the induction of labour process at 38 weeks and 4 days gestation. The baby was delivered by caesarean section in good condition.

Conclusion

• RFA is an effective alternative treatment modality when fetoscopic laser coagulation in utero is not feasible for cases at risk of fetal cardiac failure and intrauterine demise in the presence of large chorioangiomas.
• We highlight the importance of close surveillance, individualised pregnancy assessment to tailor therapy and early intervention if necessary.