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Novel Antenatal Management of a Giant Placental Vascular Tumor - A Case Report

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ABSTRACT: *Chorioangioma is a benign placental tumor that is usually diagnosed in the second or third trimester of pregnancy by antenatal sonography and is seen in 0.5-1% of pregnancies. While most of the chorioangiomas are asymptomatic, a few cases, especially the ones with large chorioangiomas, may pose challenges both antepartum and intrapartum ranging from maternal complications like polyhydramnios, pre eclampsia, antepartum hemorrhage, mirror syndrome, preterm labor, PPH and fetal complications like fetal anemia, fetal hydrops, fetal growth restriction, intrauterine demise and congestive heart failure. Cases that develop complications at early gestational age may warrant antenatal interventions. However, the decision of termination vs intervention is challenging and case-specific. We report a case of 27 year old Primigravida diagnosed with placental chorioangioma at 28 weeks in a routine growth scan. The patient rapidly developed polyhydramnios in two weeks with early onset FGR. Intravascular glue injection of the feeder vessel was done at 30 weeks. The patient went into spontaneous preterm labor and delivered a girl baby of weight 2.3kgs vaginally at 33 weeks. The case report emphasizes how close antenatal surveillance with timely antenatal interventions can result in favorable maternal and fetal outcomes.*

Keywords: *Placental chorioangioma, benign tumours of the placenta, feeder vessel, preterm labor, fetal growth restriction, antenatal interventions.*

INTRODUCTION

Chorioangiomas are the most common benign tumors of the placenta and have an incidence of around 1% [1]. However, giant chorioangiomas (> 4–5 cm) are extremely rare, with an estimated prevalence of 1/3500 to 1/9000 pregnancies[6]. Majority of them are detected on routine antenatal ultrasonography. On ultrasound, they appear as a well-circumscribed, rounded, predominantly hypoechoic lesion near the chorionic surface, protruding into the amniotic cavity[2]. 3D power Doppler and MRI are increasingly utilized for detailed assessment of tumor vascularity and extent, though accessibility may vary among centers. These benign tumors are discrete masses composed of multiple fetal capillaries supported by stroma and are predominantly perfused by fetal circulation.

CASE REPORT

We present a case of 27 year old Primigravida under regular antenatal surveillance at our hospital. Her first trimester scan and aneuploidy screening were low risk. Second trimester anomaly scan ruled out anomalies. A routine growth scan done at 28 weeks revealed two heteroechoic masses in the placenta measuring 6.7 x 5cm and 5.4 x 4 cm with polyhydramnios with SDP of 14 cm and AFI-26cm. Color doppler evaluation of the mass revealed blood supply directly from umbilical artery which is seen entering the mass and proceeding to fetus, suggestive of a chorioangioma. At that point, no intense vascularity was noted within mass. A single large feeder vessel was seen. Fetal biometry indices were all within normal range except AC, which was at 98th centile. MCA PSV was 1.18 MoM. Upon diagnosis, the patient was admitted and 2 doses of steroids were covered. Patient was planned to be managed conservatively under close monitoring with weekly scans. At 30 weeks scan, worsening polyhydramnios noted with AFI-36 cm with MCA PSV at 1.46 MoM. Fetal biometry indices showed HC at 95th and AC at 98th centile with EFW at 92nd centile(1.9Kg). Patient was complaining of mild breathlessness on ordinary activity (NYHA Class II). In view of worsening polyhydramnios and impending fetal anemia, patient was offered the option of percutaneous intervention. Neonatologist opinion was taken and counselling was given regarding the same. The pros and risks of the intervention vs expectant management were explained in detail. The patient had opted for intervention.

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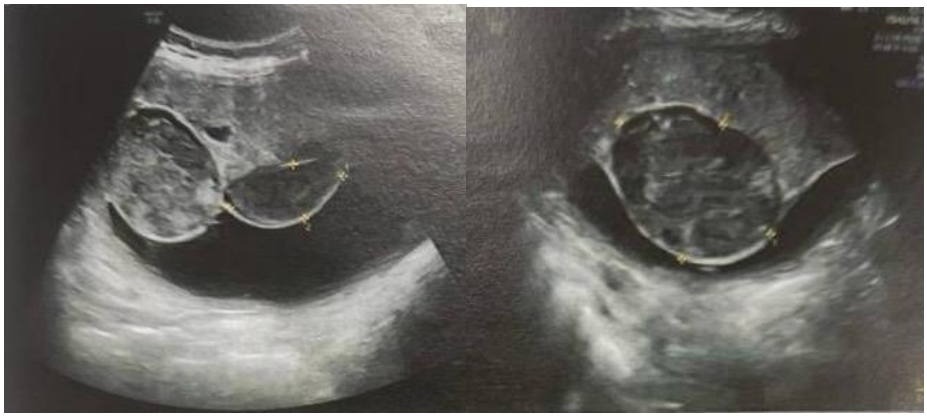
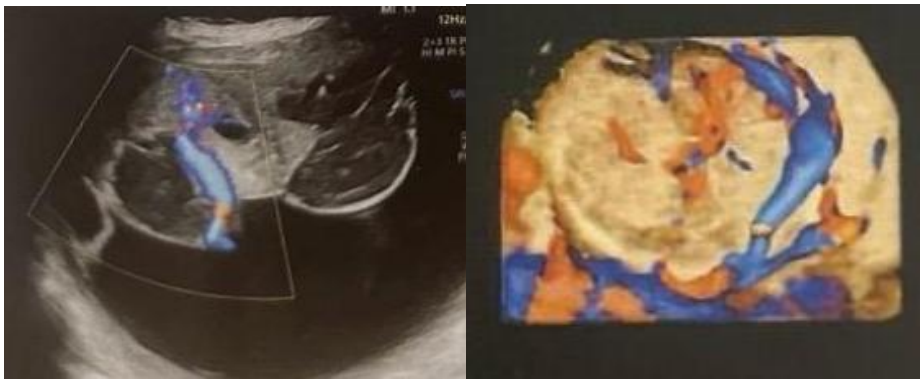


A B

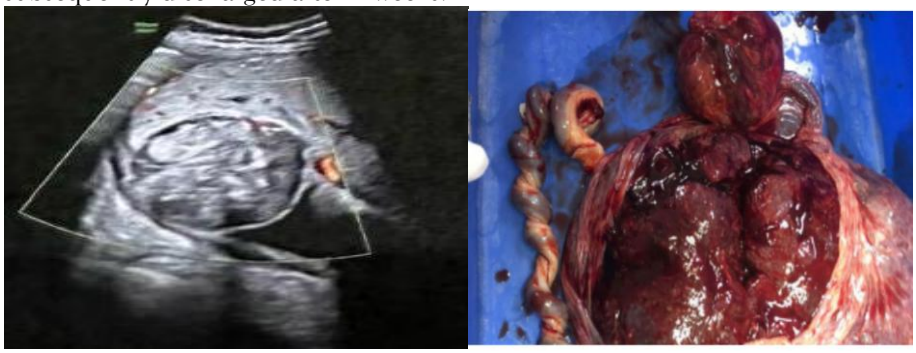
Preprocedure Ultrasonography pictures showing :
A) & B) Well circumscibed heterogeneous lesions in the substance of the placenta measuring 5.4 x 4.2 x 2.9 cm and 6.3 x 6.4 x 6.5 cm



C D

C) & D) Color Doppler showing significant vascularity to the mass

Under ultrasound guidance, the feeder vessel was identified. Under local anesthesia, a 20-gauge, 15-cm needle was introduced into the feeder vessel and enbucrilate glue was injected. Post intervention scan done after 1 day showed chorioangioma with no vascularity and improving polyhydramnios (SDP-6.5cm) and MCA PSV of 1.14 MoM. The patient had resolution of her symptoms and was under weekly surveillance. At 33 weeks, she went into preterm labor and was admitted for safe confinement. On admission, MgSO4 was covered for neuroprotection and depin tocolysis was started. 26 hours post admission, she delivered a girl baby of weight 2.3kgs vaginally. The placenta and membranes were expelled in toto. Baby cried at birth. Apgar score at 1 minute and 5 minute was 8/10 and 9/10 respectively. Placenta was explored post delivery and weighed 974 gms with dimensions 25 x 17 x 5cm with a well circumscribed 5 x 5 cm mass on the fetal surface. Placental HPE confirmed chorioangioma. The baby underwent 2D ECHO and CBC with other routine postnatal evaluations which were unremarkable. The baby was kept in NICU for 3 days and later in KMC in view of preterm and low birth weight and was subsequently discharged after 2 weeks.



E F

E) Color Doppler on post-procedure day 1 showing no vascularity
F) Postpartum gross examination of the placenta

DISCUSSION

Chorioangioma size and vascularity correlate with the volume of fetal blood shunted to the mass and are of prognostic importance to fetal outcome. Ultrasonography remains the primary modality for diagnosis. Changes such as necrosis, degeneration, or calcification within the tumor can alter its ultrasound appearance, leading to varied echotextures. Using color Doppler helps identify the vascular nature of the mass, which is crucial for distinguishing chorioangiomas from other placental lesions. Small chorioangiomas are usually asymptomatic. Larger tumors (> 4 cm) may be associated with significant arteriovenous shunting within the placenta and lead to fetal anemia, high-output cardiac failure and hydrops. Compression and shearing of fetal erythrocytes and platelet sequestration within tumor vessels can also cause fetal microangiopathic anemia and thrombocytopenia. Significant polyhydramnios may develop and theories for this occurrence include transudate from tumor vessels across the chorionic plate and the increased fetal urine output with a hyperdynamic cardiac state. Antepartum hemorrhage, preterm delivery, polyhydramnios and fetal growth restriction and sudden IUFD may complicate large tumors[3].

Large tumor size and fetal hydrops are the primary determinants and signal a potential adverse perinatal outcome. Percutaneous treatment options are ideal for the reduction of maternal and fetal morbidity[4]. Ultrasound guided percutaneous treatment options aimed to decrease blood flow include alcohol injection, embolization and interstitial laser ablation therapy. Supportive treatments include amniocentesis and intrauterine transfusions[5]. Percutaneous procedures may carry risks such as preterm labor, infection, bleeding, or placental abruption, though in documented reports, such complications remain infrequent[7]. Conservative management in controlled settings with a frequent checkup, ultrasound and Doppler also gives good results in small masses without hydrops or worsening polyhydramnios.

CONCLUSION

Placental chorioangioma is a rare benign tumor that can cause potentially serious complications. Through the case report, we aim to emphasize the importance of prompt diagnosis, close surveillance, and timely intervention in these cases to achieve favorable maternal and fetal outcomes. Regular monitoring by serial ultrasound with Doppler waveform surveillance and fetal echocardiography is recommended to pick up complications early so that they can be dealt with effectively. The decision to proceed with an in utero intervention should be individualised. In cases where intervention is planned, it should be done by an expert hand. We also emphasize the need to counsel for delivery in a tertiary center with expert NICU care to effectively handle the associated complications.

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