

Chorioangioma: Prenatal Diagnosis By Ultrasound And MRI

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Abstract

Chorioangioma is a benign tumour of the placenta consisting of blood vessels and stroma that proliferates beyond normally developing chorionic villi. Most of the small tumours are asymptomatic but large placental tumours are associated with unfavourable outcomes for foetus and mother.

Key Words

Chorioangioma, Benign Tumor, Placenta

Introduction

Chorioangioma constitutes the commonest benign growth of placenta. It consists of a benign angioma arising from chorionic tissue. Three histological patterns of chorioangiomas have been described: angiomatous, cellular and degenerate. The angiomatous is the most common. Chorioangioma is often associated with unfavourable effects on the mother as well as on the fetus. With the advent of gray scale and color flow ultrasonography in prenatal diagnosis these tumours can be easily detected antenatally. Most of the small tumours are asymptomatic but large placental tumours are associated with unfavourable outcomes for foetus and mother (1). The presentation of chorioangioma on grey scale ultrasound is most commonly described as that of a well delineated echogenic complex mass with cystic and solid areas (2, 3). Chorioangiomas show vascular channels in the tumour, which show pulsatile flow in the vascular spaces of the tumour, at the same pulsation rate as the umbilical cord. Color Doppler imaging is important not only for differentiating chorioangioma from other placental lesions but also for confirming that vascular channels in the tumour are continuous with the fetal circulation, thus ruling out other diagnosis such as degenerated myoma, placental teratoma and incomplete hydatidiform mole (4).

Case Report

35 years old pregnant patient presented with abdominal discomfort and distension. Ultrasound showed well

circumscribed intra placental mass with solid and cystic areas. Colour Doppler showed intense vascularity in the mass suggestive of chorioangioma (Fig. 1 A&B). MRI revealed intra placental mass isointense on T1W Image and heterogenous signal intensity mass on T2W Image (Fig. 2 A&B).

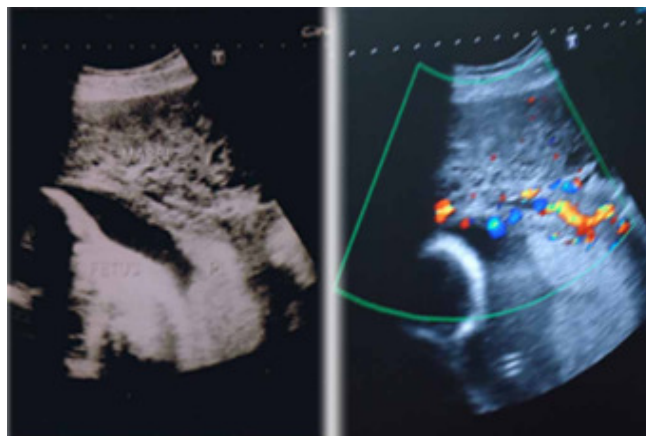


Fig 1 A & B . Ultrasoun (A) Showing Complex intra placental mass with solid and cystic areas. Colour Doppler (B) Showing intense vascularity in the mass suggestive of chorioangioma

Discussion

A chorioangioma is a benign tumor of the placenta consisting of blood vessels and stroma that proliferates beyond normally developing chorionic villi. This is the most common primary tumor of the placenta, followed

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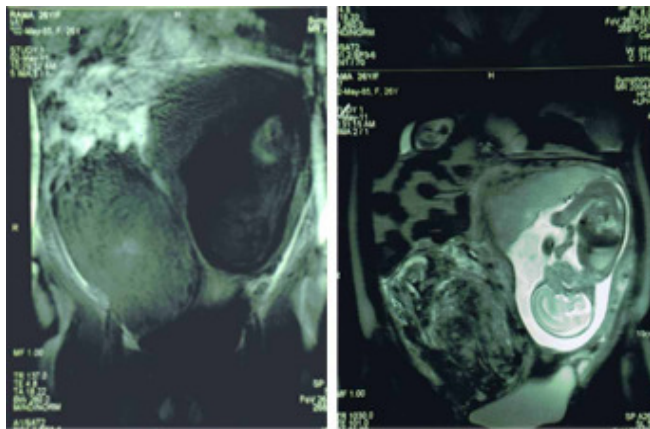


Fig 2 A & B . MRI revealed intra placental mass isointense on T1W Image and heterogenous signal intensity mass on T2W Image

by hydatidiform mole and choriocarcinoma. The incidence has been reported between 0.2-139: 10,000 births (5). The first report of a chorioangioma diagnosed by antepartum ultrasound was in 1978 (2). Chorioangioma is usually depicted as a well circumscribed intraplacental mass with a complex echo pattern. Uniform and nonuniform echogenic appearances and multicystic masses have also been representative of this tumor. The echo density of the well delineated tumor differs from that of the placenta, allowing for its prompt recognition. Grundy et al., using Doppler ultrasound obtained, a flow pattern from the vascular channels of a chorioangioma similar to that of the umbilical cord (5). This demonstrated to the authors that the vascular channels in the tumor were involved with the fetal circulation. They proposed using Doppler ultrasound of the tumor vessels to aid in making the diagnosis of chorioangioma. Doppler ultrasound not only helps in ruling out other differentials for placental masses such as degenerated myoma, placental teratoma, and incomplete hydatidiform mole, but can also be used for follow up in conservative management of placental masses in early stages of pregnancy (4). Strong suspicion of chorioangioma on Doppler ultrasound rules out the need for additional expensive and sophisticated imaging modalities like MRI. Color flow doppler can provide additional information by demonstrating increased blood flow within the tumor, thereby differentiating it from other placental masses. Besides diagnosis, color doppler is also

of value in identifying pregnancies at greater risk of developing complications. In a recently reported series of nine patients, where color flow doppler was used for the prenatal assessment of chorioangiomas, three tumors appeared avascular and pregnancies were uneventful (7). Two had only few peripheral vessels and four had numerous vessels. All the six were complicated by polyhydramnios, preterm, labour non-immune hydrops inone. According to the Australian National Perinatal Statistics Unit the use of MRI is not designed to replace ultrasound as the obstetric diagnostic tool of choice, but rather to act as an adjunct in cases where an ultrasound diagnosis is equivocal. Ultrasound remains the gold standard of foetal and placental imaging.

Conclusion

Ultrasound and Color Doppler imaging is important not only for differentiating chorioangioma from other placental lesions but also for confirming that vascular channels in the tumour are continuous with the fetal circulation, thus ruling out other diagnosis such as degenerated myoma, placental teratoma and incomplete hydatidiform mole. MRI is used as an adjunct in cases where an ultrasound diagnosis is equivocal.

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