Case Report

Indian Journal of Pathology: Research and Practice
Volume 13 Number 2, April - June 2024
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.13224.5

Giant Placental Chorangioma: A Cause of Adverse Fetal Outcome

Athira K. P[1], Kuladeepa Ananda Vaidya[2], Madhukara Devadiga[3], Rachana Kiran Koppalkar

How to cite this article:
Athira K. P, Kuladeepa Ananda Vaidya, Madhukara Devadiga *et al*. Giant Placental Chorangioma: A Cause of Adverse Fetal Outcome. Ind Jr of Path: Res and Practice 2024;13(2)73-76.

Abstract

Chorangiomas are benign neoplastic lesions of the placenta and usually are a common incidental finding, but giant chorangiomas that measure more than 5cm in diameter are rare. Small chorangiomas typically do not cause detrimental consequences. But giant chorangiomas may lead to both fetal and maternal complications such as fetal congestive cardiac failure, fetal hydrops, polyhydramnios, preterm labor, and even intrauterine fetal demise. Here, we report a case of a primigravida at 22 weeks and three days of gestation presented with a giant placental chorangioma leading an adeversefetal outcome.

Keywords: Placenta; Polyhydramnios; Hydrops fetalis; Hemangioma; Fetal death; Heart failure.

INTRODUCTION

Chorangiomas are benign neoplastic lesions of the placenta and usually are an incidental finding in 0.6% of gestations after birth. These tumors are composed of dense capillaries and loose connective tissue. Small chorangiomas are a common finding, but giant chorangiomas, which measure more than 5cm in diameter, are rare. The prevalence of giant chorangiomas is 1/9000 to 1/50000 gestations.[1,2] Around 30% of the giant chorangiomas are symptomatic. They present with complications such as fetal congestive cardiac failure, fetal hydrops, polyhydramnios, preterm labor, and even intrauterine fetal demise.[3] Here, we report a case of giant placental chorangioma leading to second-trimester abortion.

CASE REPORT

A 19-year-old primigravida at 22 weeks and three days of gestation presented with complaints of pain in the abdomen. Ultrasonography revealed a mass lesion in the placenta measuring 9×4.6cm and the presence of polyhydramnios. Further, she went into second-trimester abortion with spontaneous expulsion of the fetus and placenta. No gross abnormalities were detected in the fetus.

Author Affiliation: [1,3,4]Assistant Professor, [2]Professor, Department of Pathology, Srinivas Institute of Medical Sciences and Research Centre, Mangalore 574146, Karnataka, India.

Corresponding Author: Athira K. P, Assistant Professor, Department of Pathology, Srinivas Institute of Medical Sciences and Research Centre, Mangalore 574146, Karnataka, India.

E-mail: athirachithra@gmail.com

Received on: 26.04.2024

Accepted on: 05.08.2024

The placenta was received for histopathological evaluation. The placenta measures 15x12x5 cm, and the attached umbilical cord measures 17cm in length. The fetal surface of the placenta showed a tan brown, solid, firm, nodular mass measuring 9x9x4cm (Fig. 1,2). On histopathological evaluation, a nodular expansile tumor arose, and bulges from large villi were noted. The tumor comprises numerous thin-walled fetal capillaries surrounded by pericytes and scant intervening stroma (Fig. 3,4). A single layer of trophoblasts surrounded the lesion (Fig. 5). Focal areas showed mild trophoblastic hyperplasia. There was no evidence of necrosis. Hence, a final diagnosis of giant placental chorangioma was given.

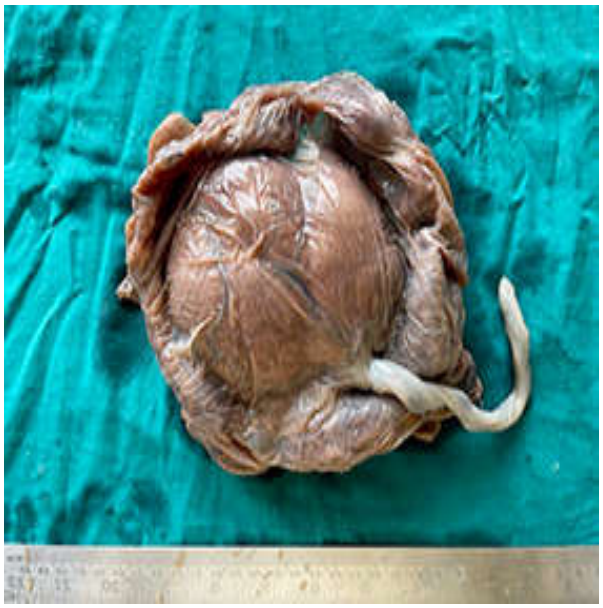

Fig. 1: Large nodular mass at the fetal surface of the placenta.

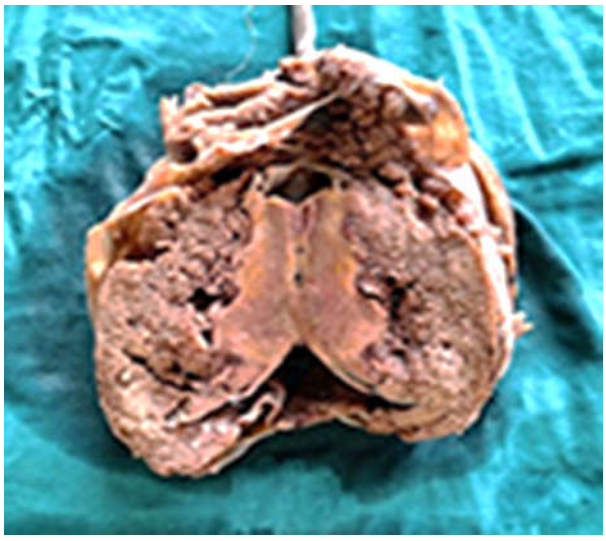

Fig. 2: Cut surface of the placental mass.

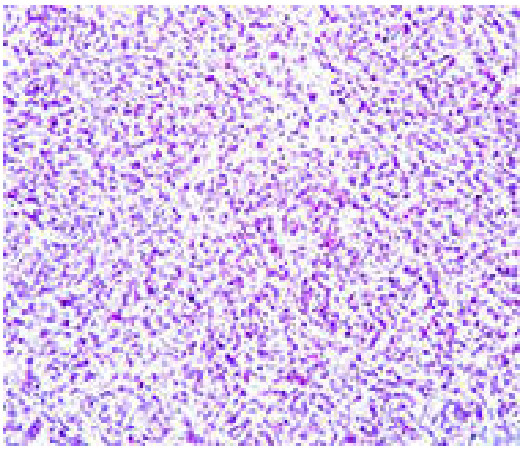

Fig. 3: Tumor composed of numerous thin-walled fetal capillaries (H & E, 100X).

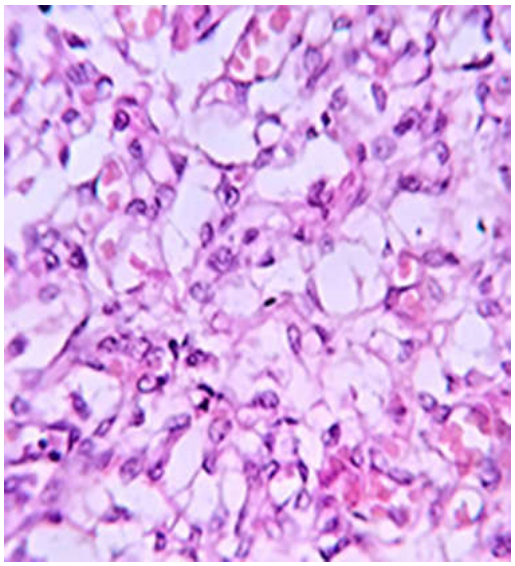

Fig. 4: Thin-walled fetal capillaries surrounded by pericytes and scant intervening stroma (H & E, 400X).

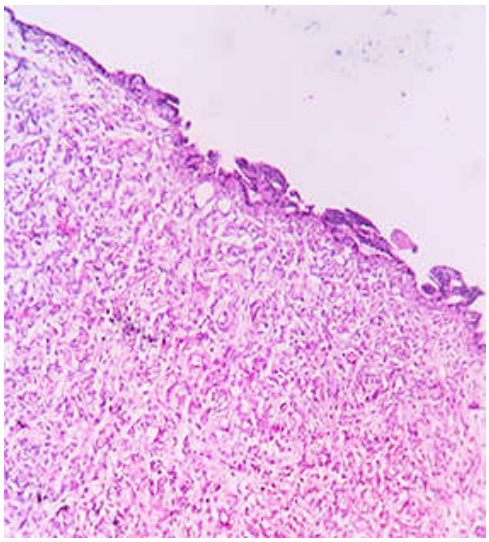

Fig. 5: Tumor surrounded by trophoblasts (H & E, 100X).

DISCUSSION

Chorangiomas are benign lesions of the placenta arising from primitive chorionic mesenchyme and are characterized by aberrant vasculogenesis of mature villi.[1] These are common tumors, but giant chorangiomas measuring more than 5cm are rare.[2] These tumors resemble hemangioma, but the etiology remains unknown. It is often associated with maternal hypertension, diabetes mellitus, multiple pregnancies, and advanced maternal age.[4] In the current scenario, the patient was a young adult without any comorbidities, and the maximum dimension of the tumor was 9cm.

The clinical significance of chorangioma is mainly dependent on the size of the lesion. Small chorangiomas usually do not cause detrimental consequences, but giant chorangiomas may lead to both fetal and maternal complications.[5] Chorangioma acts as an arteriovenous shunt, thus leading to increased cardiac output in the fetus. Also, sequestration of fetal blood within the vascular channels of the tumor can cause microangiopathic hemolytic anemia. Hence leading to fetal complications such as high-output cardiac failure, growth retardation, fetal hydrops, fetalanemia, and fetal demise.[1,2] The maternal complications include polyhydramnios, premature placenta separation, premature labor, and placenta previa.[3,6] In the current scenario, the patient developed polyhydramnios and went into second-trimester abortion with spontaneous expulsion of the fetus and placenta.

Ultrasonography with color Doppler is useful for differentiating various placental tumors. Features of hyperdynamic circulation can also be picked up earlier. Thus, early identification of chorangiomas by sonography can prevent fetal morbidity and mortality through in-utero fetal blood transfusion and early delivery based on fetal maturity.[7]

Chorangiomas are well-circumscribed, fleshy tumors with a red to tan cut surface. It's usually seen on the fetal surface of the placenta. Marchetti has described three histomorphological patterns of chorangioma: angiomatous, degenerative, and cellular patterns. The most common pattern is angiomatous. It comprises many proliferating blood vessels with varying differentiation surrounded by stroma.[8,9] The cellular pattern comprises immature and many cellular elements. The degenerative pattern shows secondary changes such as necrosis, calcification, etc. Immunohistochemistry shows CD34, CD31, GLUT1, cytokeratin 18, and factor VIII positivity. These findings point out that the cells of origin of chorangioma could be from vessels of the chorionic plate and the attached chorionic villi.[8,10]

On gross examination, Chorangiomas can be confused with subamniotic hematoma, placental teratoma, degenerated myoma, and placental infarction. Hence, a histopathological evaluation and radiological correlation are necessary. On microscopic evaluation, the differential diagnoses of chorangioma are chorangiomatosis and chorangiosis. However, these lesions show diffuse or focal proliferation of vascular elements.[2,10] Chorangiosis is capillary hyperplasia demonstrating more than ten capillaries in a minimum of ten terminal villi. No definite gross abnormalities are seen in chorangiosis. Chorangiomatosis is multiple lesions with capillary proliferation within villous structures. A rare differential diagnosis is chorangiocarcinoma, which is a possible misnomer. They do not exhibit malignant behavior. Hence, they are best described as "chorangioma with trophoblastic proliferation".[4,11]

The recurrent risk of chorangioma is not well known but is considered low. Literatures refers to chorangioma as a hyperplastic capillary lession or as hamartoma rather than a true neoplasm since these tumors do not have a malignancy potential and do not metastasize.[4]

CONCLUSION

Giant placental chorangiomas are rare tumors. The fetal mortality rate is higher when associated with them. Hence, early antenatal diagnosis with fetal surveillance can decrease fetal and maternal emergencies.

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