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Case Report

# Sudden intrauterine fetal death due to a giant placental chorioangioma: a rare case report

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**Summary**

Chorioangioma is a rare kind of benign placental tumor. Generally, patients have no clinical symptoms if tumors are small. The giant chorioangiomas would trigger multiple complications, which result in adverse outcome of fetus. However, the fetus sudden death caused by the large tumor with no complications was really less reported. We herein present a case of intrauterine fetal death due to a giant placental chorioangioma to remind the clinicians that the treatment should be performed as soon as possible to avoid this kind of tragedy.

*Key words*: Chorioangioma; Sudden intrauterine fetal death; Asphyxia.

## Introduction

A chorioangioma is a benign tumor that is derived from primitive chorionic mesenchyme of the placenta, and its etiology remains unclear. The incidence of chorioangiomas is estimated to be 1%, and the large ones ($>$ 4–5 cm) vary from 1 : 3500 to 1 : 9000 (0.29%–0.11%) [1]. The clinical manifestations of the chorioangioma are usually determined by its size, location, and the vascularity [2]. Most chorioangiomas are small and asymptomatic, and the symptomatic chorioangiomas are confirmed by ultrasound. We herein present a case of intrauterine fetal death due to a giant placental chorioangioma.

## Case Presentation

A 35-year old pregnant woman, with gravida 3, para 1 at 39 weeks gestation complained of decreased fetal movements for 2 days. The woman's past medical history showed that her antenatal examination was not regular, and her ultrasound examination at 35 gestational weeks demonstrated normal fetal development with nonhomogeneous echo enhancement of the placenta. Upon hospital admission, the color ultrasonography examination showed a well-circumscribed mass of 10.2 $\times$ 9.3 cm on the fetal surface of the placenta, and the umbilical cord was not tangled around the neck. The mass was distinctly different from the placenta. The RI rate was 0.57 and S/D was 2.3, indicating adequate blood supply for the fetus. The doctor suggested a cesarean section because the tumor would most likely affect the fetus; however, the pregnant woman insisted to wait for spontaneous labor. Unfortunately, 2 days later the fetal movements stopped, and the color ultrasonography showed the deceased fetus. Labor was induced, and the stillborn fetus was delivered vaginally. Two large masses fell out with the delivery of the placenta, and a third one was discovered on the fetal surface of the placenta.

### *During autopsy*

The perfectly formed fetus weighed 2560 g. A large tumor was observed on the fetal surface of the placenta (Figure 1). The three tumors were well-defined, random-shaped, and lobulated. The tumors weighed 430 g in total, and the size was 10 $\times$ 8 $\times$ 6 cm. A thin layer of fibroid connective tissue covered the tumor. The umbilical cord was noted as congested, and all of the organs appeared fine.

### *On histopathological examination*

While the fetal brain showed some edema, the other organs were satisfactory (Figure 2). The tumor showed a foliolose vascular proliferation with capillaries of varying sizes surrounded by fibrillar connective tissue. There were autolytic blood cells in the capillary lumens. The surrounding fibrous tissues were composed of collagen, and cells consisted of fibroblasts, macrophages, and collagen.

## Discussion

Chorioangioma is diagnosed by the clinical symptoms and the ultrasound examination. In the presented case, the ultrasound findings of chorioangioma revealed a well-circumscribed mass [3-5]. The pathology examination showed that the mass was well-defined and composed of multiple capillary vascular channels separated by connective tissue stroma [6]. Since the pathology and the clinical ultrasound examination aligned with the description of chorioangioma in previous literature [7, 8], the diagnosis of chorioangioma was correct.

Normally, a chorioangioma does not affect the fetus.

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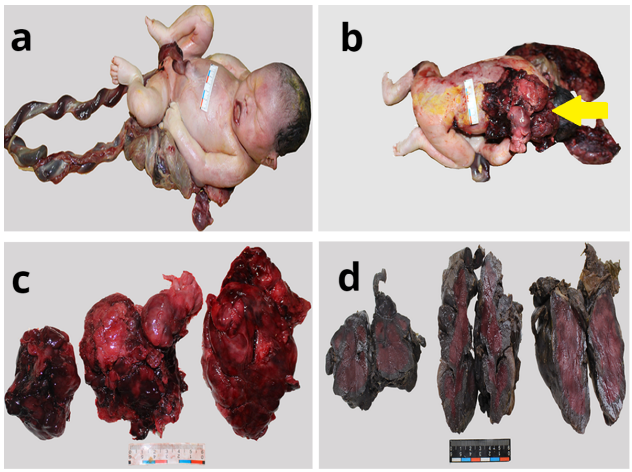


Figure 1. — Macroscopic findidngs at autopsy. a. stillbirth fetus kept normal development with congested umbilical cord. b. the third piece of the tumor on the fetus surface of placenta. (arrow). c. the three pieces of the tumor are well-defined, random-shaped, and lobulated. d. the section of the tumor showed grey-red compact tissues.

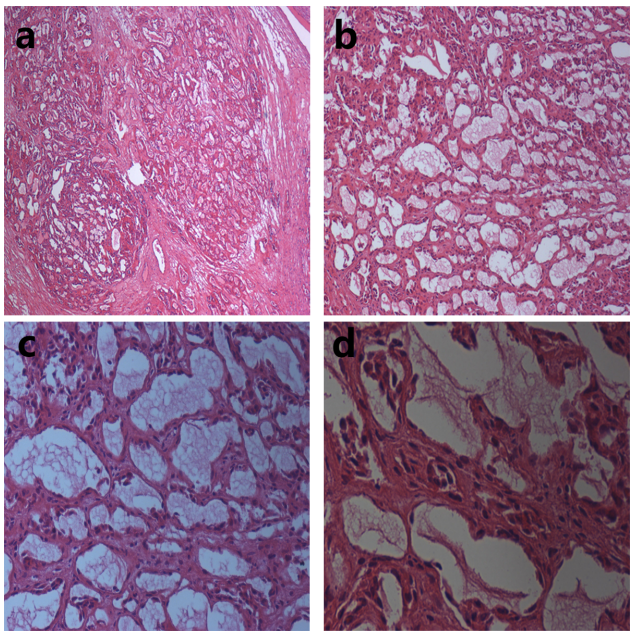


Figure 2. — Histology image. a. The tumor showed lots of capillaries surrounded by fibrillar connective tissue. (HE 40×). b. capillaries vary in size with irregular arrangement. (HE100×). c. There are autolytic blood cells in the capillary lumens. (HE200×). d. foliolose vascular proliferation (HE 400×).

The complications associated with this tumor includes polyhydramnios and fetal hydrops, premature labor, placental abruption, growth restriction, hepatosplenomegaly, cardiomegaly, congestive heart failure, and prenatal dysplasia [9], which could result in fetal death [1, 10]. In this case, the medical history and autopsy revealed no complications during the gestation, and the fetus showed normal development; however, the fetus died suddenly in the hospital. The placenta and umbilical cord were excluded as possible causes of death of the fetus. The neonatal death was ascribed to asphyxia due to the rapid demise of the fetus, combined with the umbilical cord congestion and the large tumor [2]. We speculated that the umbilical cord was compressed by the tumor whenever the fetal position changed. The congestion of the umbilical cord vessels occurred due to mechanical compression, which in turn led to fetal blood transportation dysfunction and fetal intrauterine distress.

The occurrence of giant chorioangiomas is rare, and appropriate treatments should be used according to the gestational stages and possible complications. The ultrasound-guided laser therapy is an effective method for a tumor [11]. During the late gestation period, depending on the maturity of the fetus, a caesarean section should be performed [12]. Our case reminds the clinicians that the treatment should be performed immediately if the chorioangiomas are large, thereby avoiding this type of tragedy.

## Ethics approval and consent to participate

Informed consnt was obtained from the patient's immediate family in the study.

## Acknowledgements

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## Conflict of Interest

The authors report no conflicts of interest in this work.

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