

## Case Report

# Neonatal outcome of a giant placental chorioangioma in a late preterm newborn

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## ABSTRACT

Chorioangioma, the most common benign placental tumor, is found in 1% of placental pathology. Tumors greater than 4 cm are classified as giant and associated with multiple maternal and fetal complications. Authors are presenting a case report of a rare 16 cm giant chorioangioma, discovered at time of delivery, complicated with pregnancy induced hypertension and presenting with minimal fetal complication. This patient exhibited eventually a satisfactory perinatal outcome, complicated by severe anemia and thrombocytopenia requiring transfusion of blood products and bilateral, self-resolved spontaneous cephalohematomas. Chorioangiomas should be considered in the differential diagnosis of any newborn that presents with anemia.

**Keywords:** Anemia, Cephalohematoma, Chorioangioma, Newborn

## INTRODUCTION

Chorioangioma is a benign non-trophoblastic tumor found in 1% of all-examined placentas.<sup>1</sup> Most chorioangiomas are small and asymptomatic. Tumors larger than 4 centimeters are of low incidence and classified as giant chorioangiomas, are associated with increased risk of adverse perinatal outcomes such as: polyhydramnios, preterm labor, maternal preeclampsia, placental abruption, fetal mal-presentation, fetal hemolytic anemia, thrombocytopenia, nonimmune hydrops, fetal heart failure, growth restriction, brain infarction, umbilical vein thrombosis, preterm delivery and high perinatal death.<sup>2-6</sup>

Several prenatal interventions such as: amnion reduction, intra utero transfusions, transcatheter embolization, laser destruction or endoscopic laser coagulation of the feeding vessels and chemo sclerosis have been reported to treat this condition in utero.<sup>7</sup>

Authors report a case of a 35 weeks gestation preterm newborn with complications of severe anemia, thrombocytopenia, hyperbilirubinemia and spontaneous large bilateral cephalohematomas secondary to a giant placental chorioangioma diagnosed at birth.

## CASE REPORT

A 40 years old female, G6P2032, presented at 35 2/6 weeks gestation with elevated blood pressure and decreased fetal movements.

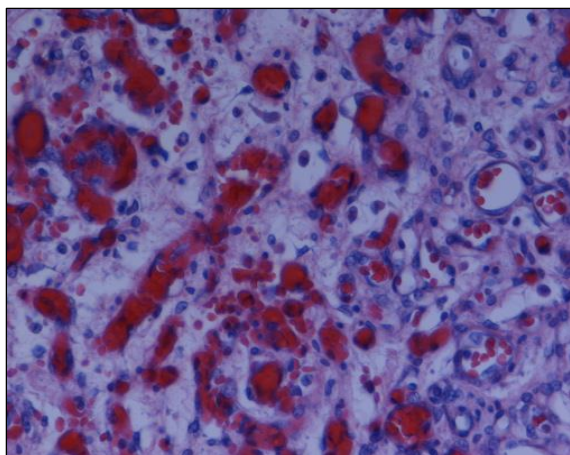
The pregnancy was complicated by gestational hypertension. Prenatal ultrasounds at 1<sup>st</sup> and 2<sup>nd</sup> trimester were normal.

Ultrasound on the day of delivery revealed a fetus with an EFW 2900g, biophysical profile of 8/10, normal fetal movements, fetal heart rate with minimal variability and a placental mass of 10x10 cm.

She received 1 dose of betamethasone and i.v. hydration. A 2029 grams female newborn was delivered by non-traumatic Cesarean section for non-reassuring fetal heart tracing and breech presentation. She required positive pressure ventilation (IPPV) for poor respiratory effort. Apgar scores were 6 and 9 at 1 and 5 minutes respectively. Placental examination revealed an intact 700g placenta, with an irregular solid mass, measuring 16x12 cm (Figure1).



**Figure 1: Giant chorioangioma.**



**Figure 2: Chorioangioma in high magnification field showing numerous distended capillaries lined by flattened endothelial cells containing red blood cells and separated by minimal amount of fibrous tissue.**

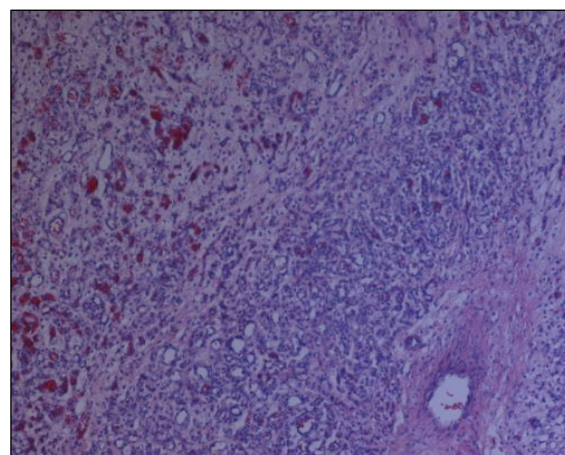
On admission to the neonatal intensive care unit (NICU) she received continuous positive airway pressure (CPAP) for few days due to transient respiratory distress. On physical exam bilateral cephalohematomas, hands and feet edema, hematoma of the umbilical cord and bruise in the vitamin K injection site were noted. No major blood group incompatibility was present.

She was found to have significant anemia and thrombocytopenia requiring transfusions of red blood

cells, platelets and fresh frozen plasma. Her chest x ray, echocardiogram, head ultrasound and CT scan, abdominal US and coagulation profile were normal. Parvovirus, cytomegalovirus and bacterial blood culture were negative. Chromosomal and microarray analysis were normal. Placenta pathology confirmed the diagnosis of giant chorioangioma (Figure 2,3).

During her hospital course she developed hyperbilirubinemia treated with phototherapy. She was weaned from respiratory support, advanced to full enteral feeds, however, hyperbilirubinemia persisted and her cephalohematomas increased in size (Figure 4).

She was discharged at two weeks of age and subsequent follow up exams revealed healthy infant with resolution of the anemia, thrombocytopenia and bilateral cephalohematomas.



**Figure 3: Chorioangioma in low magnification field showing mixture of endothelial cells, pericytes and myofibroblastic stromal cells arranged as capillary sized vessels causing expansion of contiguous affected villi.**



**Figure 4: Large bilateral spontaneous cephalohematomas.**

## DISCUSSION

Chorioangiomas are highly vascularized benign placental tumors.<sup>8</sup> Most tumors are small, asymptomatic and usually found on placental pathologic analysis. The recurrence of chorioangiomas are rare, suggesting that environmental and genetic factors play a role in their development.<sup>9</sup>

Tumors larger than 4 cm are usually symptomatic and discovered prenatally due to fetal complications. The risk of adverse outcome increases with larger size tumors. Chorioangiomas diagnosed early in pregnancy or associated with severe fetal complications are treated intrauterine by amnion drainage to treat the polyhydramnios, intrauterine transfusions and laser ablation or coagulation of the feeding vessel to prevent hydrops fetalis. These therapies prolong the pregnancy but are challenging because they pose a significant morbidity and mortality to the fetus.<sup>10,11</sup>

This case represents a rare large chorioangioma discovered at the time of birth with a favorable neonatal outcome and without prenatal sonographic evidence of early fetal complications as demonstrated by normal first and second trimester ultrasounds. The baby presented with significant anemia at birth without evidence of hydrops fetalis or polyhydramnios suggesting that the condition was not present too long before birth. In this case there was not cord evulsion, tight nuchal cord, placental abruption, placenta previa, incision or tear of the placenta at the time of the cesarean causing the neonatal anemia. Authors hypothesized that the cause of the anemia was a perinatal hemorrhage caused by fetoplacental transfusion due to a choriangioma. The neonate developed an unusual large, bilateral cephalohematomas which were apparent several hours after birth, increased in sizes and subsequently subsided. This case is peculiar because the cephalohematomas are not commonly seen in breech presentation, C/S without labor or intrapartum instrumentation. In addition, giant chorioangiomas are usually associated with poor neonatal outcome.

The mother presented with hypertension and preterm labor which goes along with the prenatal maternal complications previously reported with giant tumors.<sup>12</sup> This case illustrates a giant chorioangioma causing severe anemia and thrombocytopenia, although chorioangiomas are not common, they should be considered in the differential diagnosis of a newborn with anemia.

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