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## Chorioangioma in pregnancy: a case report



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### ABSTRACT

**Background:** Placental chorioangioma is a rare benign non-trophoblastic tumor of the placenta, derived from primitive chorionic mesenchyme. It can cause adverse outcomes on the mother and fetus, depending on its size. Most of the cases are accidentally detected during ultrasonography because small size tumors are usually asymptomatic. However, larger size of tumor can cause complications such as fetal anemia, fetal hydrops, polyhydramnios, premature birth, intrauterine growth restriction, and fetal death.

**Case report:** A 27-year-old primigravida presented at Sanglah Hospital gynecology polyclinic at 27<sup>th</sup>-28<sup>th</sup> week of gestation. She was referred by an obstetric and gynecologist due to polyhydramnion since 26<sup>th</sup>-27<sup>th</sup> week of gestation. A 7.86 x 8.19 cm hypoechoic cysts with hyperechoic border were found during fetal scanning. Chorioangioma was suspected with SDP 9.11 cm. Amniocentesis was planned, however the patient had a premature uterine contraction. By this time, the fundal height was accordant with 31<sup>st</sup>-32<sup>nd</sup> week of gestation, and speculum examination showed rupture

of membrane with 4 cm cervix dilation. Spontaneous vaginal delivery was performed and a boy neonate with 4/6 Apgar score and birth weight of 1150 g was delivered. Placenta was extracted out completely. There was no complication after delivery process. Macroscopic and microscopic placental examination confirmed the initial diagnosis, chorioangioma.

**Conclusion:** Early management in determining the cause of polyhydramnion is challenging and needs comprehensive investigation. Ultrasonography is a choice of method in initial detection of polyhydramnion. Serial ultrasonography is needed to evaluate the amount of amniotic fluid and detect the probable cause of complications for mother, fetus, and delivery process. One of the complications is premature uterine contraction that causes premature birth. As a result, the fetus may not be viable and this remains one of the biggest challenges for clinicians. There are several possible causes that cannot be ruled out from polyhydramnion differential diagnoses, such as a rare placental tumor chorioangioma.

**Keywords:** preterm, polyhydramnios, chorioangioma.

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### INTRODUCTION

Chorioangioma was first described by Clarke in 1978, as the most common tumor of the placenta.<sup>1</sup> Chorioangioma is a benign non-trophoblastic tumor of the placenta, derived from primitive chorionic mesenchyme.<sup>2-4</sup> This tumor accounts for approximately 0.6% of all pregnancy.<sup>5</sup>

The clinical significance is related to the size of the tumors. Most of the chorioangioma is small in size and often asymptomatic and accidentally found during routine ultrasonography (USG).<sup>1</sup> Giant chorioangioma, greater than 5 cm diameter, is unusual, with incidence rate ranging from 1/3,500 to 1/9,000. However,

it can result in adverse mother and neonatal outcomes, such as fetal anemia, fetal hydrops, polyhydramnios, premature birth, intrauterine growth restriction, and fetal death. The fetal and neonatal mortality rate when the tumor size > 5 cm is 18%-40%.<sup>2-4</sup> Here, we report a rare case of placental chorioangioma who presented with polyhydramnios.

### CASE REPORT

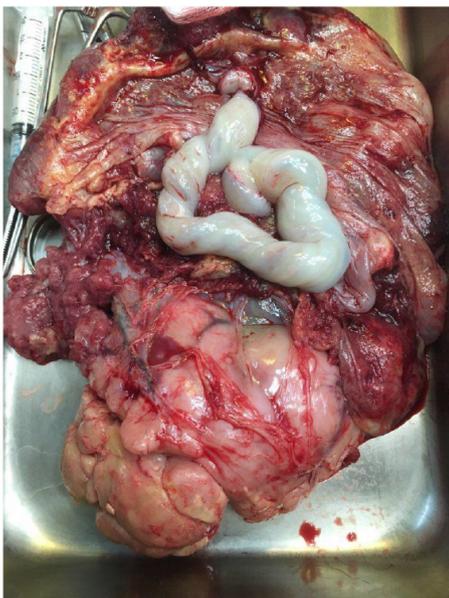
A 27-year-old primigravida presented at Sanglah Hospital gynecology polyclinic at the 27<sup>th</sup>-28<sup>th</sup> week of gestation. She was referred by an OBGYN specialist due to polyhydramnios. The condition has

been known since the 26<sup>th</sup>-27<sup>th</sup> week of gestation when performing antenatal care. From fetal scanning, chorioangioma was suspected and esophageal atresia was not found. The patient was not experiencing any symptoms. The history of medicine during early pregnancy was denied.

From the physical examination, vital signs were within normal limits. Fundal height was 4-finger-width below the xiphoid process. The fetus was in cephalic presentation and the fetal heartbeat was 156 beats per minute. Fetal biometric USG showed 27<sup>th</sup> weeks of gestation, normal umbilical arterial blood flow (S/D: 2.17; RI: 0.54; PI: 0.73), increased amniotic fluid



**Figure 1.** Ultrasonography showed a 7.86 x 8.19 cm hypoechoic cysts with hyperechoic border



**Figure 2.** Placental mass

(SDP: 13 cm). A 7.86 x 8.19 cm hypoechoic cysts with a hyperechoic border was also revealed (Figure 1).

The patient was diagnosed with G1P000 with 27-week-5-day gestation week, single alive, polyhydramnios, suspected chorioangioma. Amniocentesis (karyotyping) was planned. Six days

later, the patient revisited the hospital and was hospitalized due to premature uterine contraction. She complained of intermittent abdominal pain and could feel fetal movement. Vital signs were normal, abdomen was enlarged with fundal height concordant with the 31<sup>st</sup>-32<sup>nd</sup> gestational week. Speculum examination showed a rupture of the membrane with 4 cm cervix dilation. Ultrasonography showed normal fetal growth by gestational age, and no structural defect nor fetal hydrops. The amniotic fluid index was 8.42 cm. The placenta is attached to the back of the uterus.

Spontaneous vaginal delivery was performed. A baby boy was born with a birth weight of 1150 g, with an Apgar score was 4/6 at 1<sup>st</sup> and 5<sup>th</sup> minute, respectively. Placenta was extracted out completely, 190 grams in weight, and 20 x 16 cm in size. The three-vessel umbilical cord with 12 cm in length and 0.8 cm in diameter was eccentrically placed. A single 7 x 6 x 5 cm spherical solid mass was extending from the maternal surface to the fetal surface. Microscopic examination of the placental tissue revealed a well-defined tumor, growing from chorionic villi, containing capillary hyperplasia within

the fibrous stroma. Tumour was covered by trophoblastic cells. At one side of the tumor, there was a necrotic area and calcified focus. There were no signs of malignancy from the specimen (Figure 2).

## DISCUSSION

Placental chorioangioma is the most common benign tumor of the placenta. The estimated incidence of placental chorioangioma is about 1% in microscopically examined placentas. Most chorioangiomas are small, asymptomatic, and generally have no clinical significance. Large tumors, particularly those measuring more than 5 cm, are rarely seen in obstetric practice but have an association with maternal and fetal complications.<sup>6</sup> Large tumors can result in adverse mother and neonatal outcomes, e.g. fetal anemia, fetal hydrops, polyhydramnios, premature birth, intrauterine growth restriction, and intrauterine fetal death.<sup>2,3,5</sup>

A 7 x 6 x 5 cm spherical solid mass was present. In this case, the patient suffered from polyhydramnios and later had a premature birth. Polyhydramnios is the most common complication of chorioangioma, occurring in 14%–28% of clinical cases. Three main theories exist to explain this increase in liquor volume. Firstly, placental chorioangioma is usually located near the umbilical cord insertion, and the mechanical compression of the umbilical vein by the tumor could obstruct the umbilical vein leading to greater transudation of fluid. Secondly, excess amniotic fluid may result from a fetal fluid imbalance caused by increased production of fetal urine or by congestive heart failure. The third hypothesis postulates that the excess of amniotic fluid results from a transudate through the wall of the abnormal vessels of the tumor, and subsequently, through the fetal plate of the placenta. Preterm labor mainly caused over-distension and polyhydramnios. The preterm delivery mechanism may be partly due to biochemical changes in amniotic fluid, including elevated level.<sup>7,8</sup>

An increased incidence rate of chorioangioma is associated with maternal age, hypertension, diabetes, female sex of the newborn, premature labors, first delivery, and multiple pregnancies.<sup>4,6,9</sup> The patient has two of these factors: premature

labors and first delivery.

Doppler ultrasound examination is the gold standard in the diagnosis of placental chorioangioma during pregnancy. Doppler sonography is the main tool in the differential diagnosis between angioma and placental hematoma, teratoma, and myoma uteri. Ultrasound findings of chorioangioma commonly reveal hypo- or well-circumscribed distinctly placenta. This contains cystic and may or may not contain fibrous septa, which can create the appearance of a complex mass. Chorangiomas are found on the fetal surface of the placenta around the umbilical cord insertion. Great blood flow in the placental mass and the lacunar anechoic areas of the mass or a gross feeding vessel within the placental mass favors the diagnosis of chorioangioma. Placental teratomas are cystic or solid masses with calcifications on sonographic examination. Teratomas do not have a rich vascular supply. In contrast to angiomas, the echogenicity of hematomas differs from time to time as the coagulation process occurs. MRI can be used as an adjunct in cases where the USG diagnosis is equivocal.<sup>1,2,5</sup> In this presented case, a 7.86 x 8.19 cm hypochoic cysts with a hyperechoic border with normal blood flow was also revealed.

Histologically, three different forms may be seen in chorioangiomas: angiomatous, cellular, and degenerative forms. The angiomatous form is the most common.<sup>10</sup> As in this case, the tumor microscopically showed an angiomatous structure with areas of capillaries, and blood vessels surrounded by placental stroma.

Management of chorioangioma is usually conservative. Fetal treatment of the chorioangioma is controversial. Small tumors can be managed expectantly. However, for some

complications, treatment can be thought of. Amniodrainage of the excessive amniotic fluid is an option in the case of polyhydramnios. In a uterine transfusion, fetoscopy, and laser coagulation of the vascular shunts are the other management options. The proper timing of the labor is controversial and primarily depends on the fetomaternal complications. Unless these complications occur, the patients should be monitored closely, at least every month for small tumors, and every 1-2 weeks for the greater ones.<sup>2,3,6</sup> In the case, the amnioreduction procedures were planned. However, the patient had a preterm contraction before the procedure was done. Spontaneous vaginal delivery was performed.

## CONCLUSION

Chorioangioma is a rare but challenging condition. Antenatal diagnosis of such cases is a must to prevent and manage complications associated with it. Giant placental chorioangiomas are associated with an increased risk of fetal demise. Therefore, we emphasize the need to consider the diagnosis of chorioangioma with all clinical presentations of polyhydramnios.

## CONFLICT OF INTEREST

The author declares there is no conflict of interest regarding publication of this study.

## ETHICS IN PUBLICATION

All patient had received signed informed consent prior to any data collection regarding publication of their medical data in medical journal.

## AUTHOR CONTRIBUTION

RYE was responsible for data gathering, visualization, and writing original draft.

IWAP is responsible for supervision, and writing original draft. All author had reviewed and agree for the final version of the manuscript.

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