Placental Chorioangioma: A Case Report and Literature Review

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When placental masses are discovered during routine conventional sonographic examination, differentiation between chorioangiomas and other lesions is not always possible. Absolute identification should be done prenatally by color flow mapping for every suspected placental mass. Because unidentified large chorioangiomas can cause more tragic perinatal complications compared to other placental lesions.
(Gynecol Obstet Reprod Med 2006; 12:212-214)

Key Words: Chorioangioma, Prenatal diagnosis, Management

Benign placental chorioangioma is the mostly seen primary tumor of the placenta followed by the potentially malignant hydatiform mole and the malignant choriocarcinoma. Metastatic (secondary) tumors in the placenta are very rare and the most common metastases are from malignant melanomas. [1]

The incidence of these benign tumors is about 1%; they are generally small in size and very often overlooked at the simple examination of the placenta. Large tumors, more than 4 cm in diameter are clinically important and their incidence varies between 1:3000 and 1:9000 births. These tumors appear as homogeneous, firm, rubbery masses. [1,2]

Large chorioangiomas can cause abruptio placentae, preeclampsia, intrauterine growth restriction, fetomaternal hemorrhage, premature labor, non-immune hydrops, fetal anemia, polyhydramnios, fetal malformations, prematurity, fetal trombocytopenia and congestive heart failure of the fetus. [1-5]

Because of these benign tumors of the placenta can cause severe perinatal outcomes, the prenatal ultrasonographic recognition of these lesions provides the opportunity for adequate perinatal care.

In this paper we present a pregnancy follow-up with a large chorioangioma firstly detected at 18th weeks of gestation by ultrasonographic colour doppler, and we emphasize the importance of applying colour imaging doppler sonography for differentiating of the placental masses, and also review literature.

Case Report

A 24-year-old pregnant (gravida 1, para 0) applied to our antenatal out-patient clinic at 18th weeks of gestation. The ultrasonographic assessment of fetal anatomy, amniotic volume, and growth showed normal development compatible with gestational age. The presentation of the fetus was head. The placenta was located anteriorly. Ultrasonographic placental screening revealed an irregular, hypoechoic placental mass of 35x 40 mm in size and protruding into the amniotic cavity, suggesting chorioangioma. Ultrasonographic colour flow mapping and velocimetry demonstrated diffuse arteriovenous activity into the mass, confirming the diagnosis of chorioangioma (Figure 1).

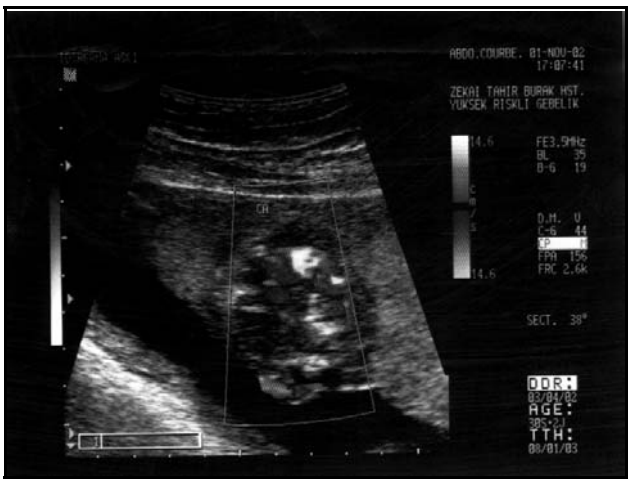

Figure 1. Color flow mapping demonstrates arteriovenous vascularization into the placental mass.

In the triple test at 18th week, the values were normal except for the elevation in MS-AFP level (MS-AFP: 2.83MoM, HCG: 0.90MoM and uE3: 1.32MoM). There was no finding to explain for the high level of MS-AFP except chorioangioma.

Following up to 38+ weeks of gestation without any complications and without any change at the size of the chorioangioma, a healthy female baby weighing 3150 g was delivered by spontaneous vaginally route with Apgar scores of 9 and 10 at one and five minutes, respectively.

The baby was physically normal. Neonatal period was uneventful during the hospitalization period as well. The placenta weighing 1030 g was examined postdeliverily. One round, very solid in palpation, yellowish-gray colored, well-

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Submitted for Publication: 09.02.2005
Accepted for Publication: 14.10.2006

capsulated mass, measuring 3x4 cm slightly embedded within the placenta was observed (Figure 2). Histological tissue preparation absolutely confirmed the diagnosis of placental chorioangioma (Figure 3 and 4).

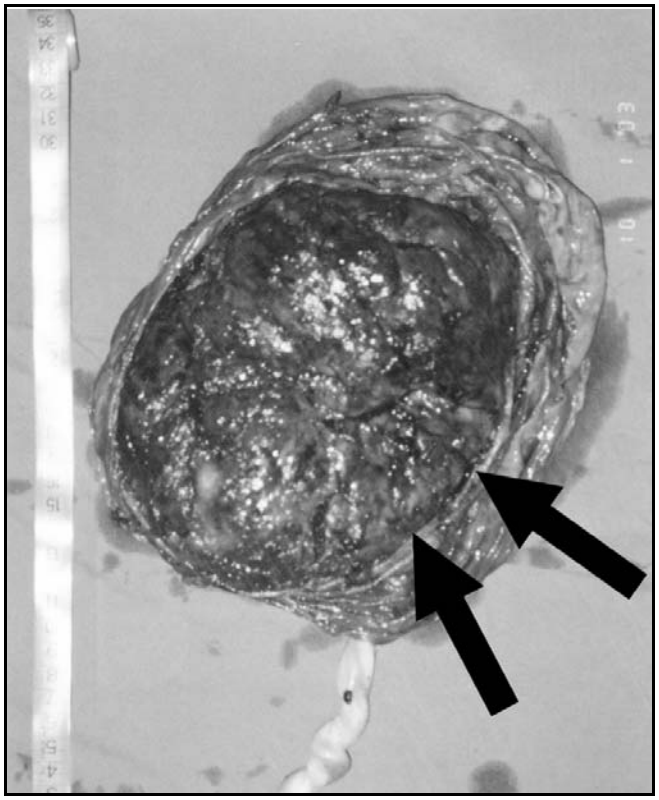

Figure 2. Chorioangioma (arrows).

Discussion

The aim of this paper is to present an uncomplicated pregnancy with a large placental chorioangioma and also emphasize the importance of applying the ultrasonographic color flow mapping for confirming the diagnosis and review literature as well.

Although placental chorioangioma is the most common of the benign placental tumors, its sonographic diagnosis is rarely reported. This is relatively rare because only tumors larger than 5 cm are associated with clinical manifestations and relatively because of the difficulties in differentiating these tumors from other placental lesions.[1]

Bromley and Benacerraf studied 10 solid placental lesions with gray scale and concluded that the sonographic appearance of chorioangioma was indistinguishable from that of placental hemorrhage. They claimed that applying color Doppler sonography could have helped them to differentiate these lesions.[6]

By many authors such as Jauniaux and Ogle, Prapas et al, Sepulveda et al, Zoppini et al stated the importance of color Doppler imaging in their studies as well.[7-10]

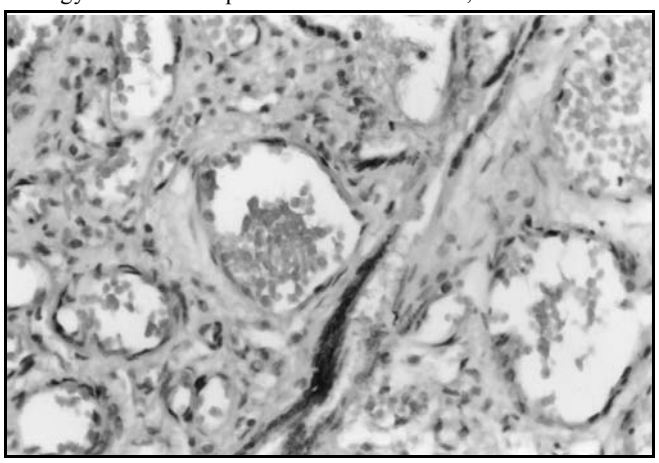

Figure 3.

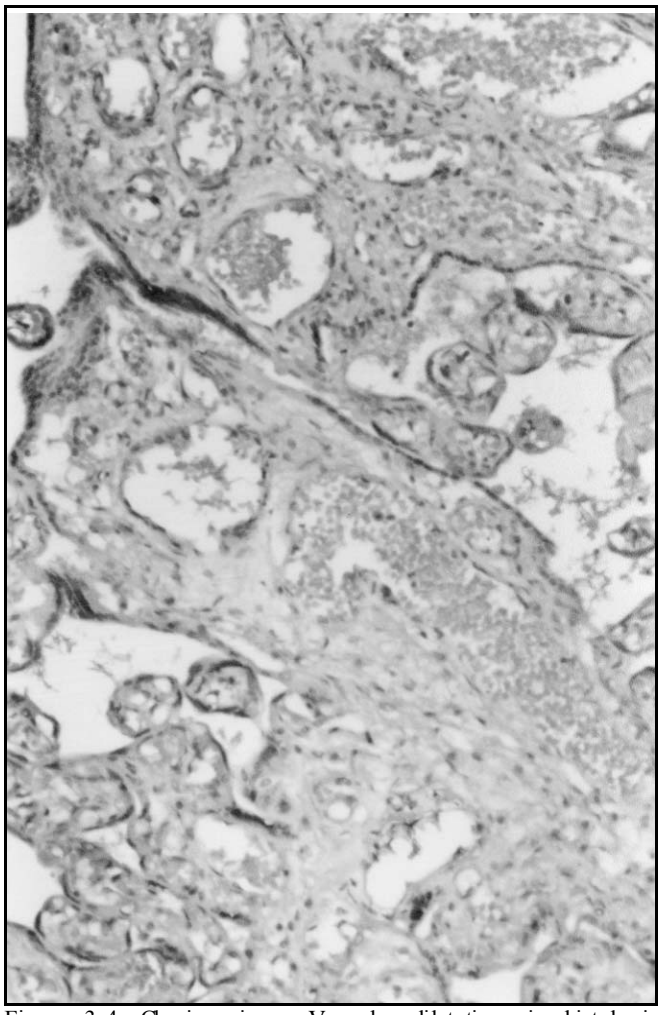

Figure 3-4. Chorioangioma. Vascular dilatations in histologic preparations (HEx100).

Zalel et al also reinforced the results of these studies. When a placental mass was found either within the placental surface or protruding into the amniotic cavity, the demonstration of blood flow within the tumor contributed to the diagnosis of chorioangioma they concluded.[1]

Large chorioangiomas can cause severe maternal and fetal complications (Table 1 and 2).[1-4]

Table 1. Maternal complications of chorioangioma

Abruptio placentae
Placentae praevia
Polyhydramnios
Atonia uteri
Premature rupture of membranes
Premature labor
Abnormal fetal presentation
Preeclampsia
Intrauterine growth restriction
Fetomaternal hemorrhage

Table 2. Fetal complications of chorioangioma

Non-immune hydrops, ascites
Anemia
Malformations
Trombocytopenia
Congestive heart failure, cardiomegaly
Hepatomegaly
Intrauterine fetal death
Prematurity
Hyponatremia

Two explanations have been proposed for fetal anemia: fetomaternal hemorrhage and microangiopathic hemolytic anemia because of entrapment and destruction of fetal erythrocytes in the vascular network of the chorioangioma.[5,11] Another major factor contributing to the fetal anemia could be the existence of an extracorporeal pool of fetal blood in the intravascular space of the chorioangioma. In some seriously anemic cases, intrauterine blood transfusion can be performed to obtain an adequate rise in fetal hematocrit.[5]

In our case, the newborn had a mild anemia with 12.5 g/dl Hb level, and normal leukocyte (WBC 8x103/µL) and trombocyte (PLT 14 x 104/µL) counts.

Hydramnios occurs in about 30-35% of patients with large tumors. Its mechanism is still unclear. An increased transudation of fluid through the large vascular surface of the tumor, which is augmented by obstruction of venous return, has been proposed as causing hydramnios.[2]

Probably the placental chorioangioma acts as a peripheral arteriovenous shunt causing increased cardiac output and cardiac hypertrophy, congestive heart failure and fluid imbalance in the fetus.

Antepartum hemorrhage occurs in 15-20% of the cases, generally caused by abruptio placentae and placentae praevia.[2] In large tumors, neonatal mortality rate is quite significant: 30-40%.[2]

In our case we didn't encounter polyhydramnios or vaginal hemorrhage in any gestational period.

Moreover, it has been reported in the literature that elevated maternal serum and amniotic fluid alpha-fetoprotein levels might occur in association with placental chorioangioma.[1,2] In our case MS-AFP level 2.83 MoM in the triple test was compatible with literature.

As a conclusion, when placental masses are discovered during routine conventional sonographic examination, differentiation between chorioangioma and other lesions is not always possible. Absolute identification should be done prenatally by color flow mapping for every suspected placental mass. Because large chorioangiomas can cause more tragic outcomes compared to other placental lesions.[1,3]

Confirming the early prenatal diagnosis by color flow mapping of these hamartomatous malformations will provide to pay more attention to these pregnants against probable perinatal complications for obstetrician and also make it possible to manage prompt and suitable medical intervention on the part of the pediatrician.

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