Case Report

Chorioangioma (Placental Haemangioma) – A Case Report with Review of Literature

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Abstract

The occurrence of chorioangioma, a benign tumour of the placenta is extremely rare. These tumors are frequently associated with maternal, fetal or neonatal complications. A case of chorioangioma (placental haemangioma) is reported for its rarity of occurrence. The nomenclature and occurrence of chorioangioma of the placenta are reviewed here.

Keywords

placenta; chorioangioma; telangiectatic malformation

Introduction

Chorioangioma is the most common primary tumour of the placenta. The incidence is approximately 1%. These tumours are benign and are not usually associated with clinical sequelae, unless they are > 5cm in diameter. Large tumours are rare, can be diagnosed antenatally by ultrasonography and are more commonly associated with maternal, neonatal and foetal complications[1,2].

Case Report

A 30-year old primigravida had an uneventful pregnancy with appropriate growth of fundal height for gestational age. She was admitted with labour pains at 38 weeks of gestation. The admitting blood pressure was 110/80 and she weighed 46kg. There was no pedal edema and her respiratory and cardiovascular systems were normal.

Obstetric ultrasonography done at 35 weeks showed cephalic presentation, mild polyhydramnios and a placental mass measuring 3.5 × 2.9cm. Placenta was anterior, grade III and expected foetal weight was 2623gm. Low section caesarian section (LSCS) was done and a male baby weighing 2.5kg was delivered, with an Apgar score of 9.

Pathological findings: The placenta with attached mass was received for histopathological examination. The placenta with umbilical cord weighed 600gm and measured 18×18×3.5cm. Gross examination of the placenta revealed two lobular grey blue masses (white arrow) attached to each other with a stalk and to the maternal surface by a pedicle, largest mass measuring 4.5×3cm (**Fig. 1**). Cut

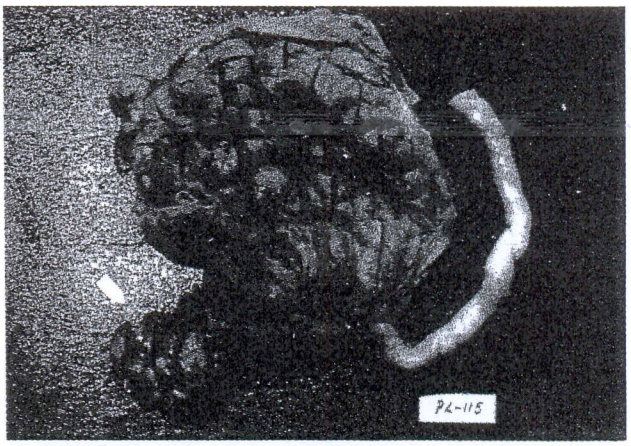

Fig. 1

Gross photograph of placenta, umbilical cord and lobular grey blue mass (chorioangioma – white arrow) attached to the maternal surface by a pedicle

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Fig. 2
Cut surface of the mass showing dark brown areas

surface of mass showed brownish areas. No other gross abnormality noted (**Fig. 2**).

Microscopy: Histological examinations of the placenta showed telangiectatic malformation of the chorionic villi (**Fig. 3**). Multiple sections from the lobular masses revealed features of chorioangioma (**Fig. 4**). There was no trophoblastic proliferation or atypia noted.

Discussion

Chorioangioma, the most common tumour of the placenta, was described by John Clarke in 1798. The

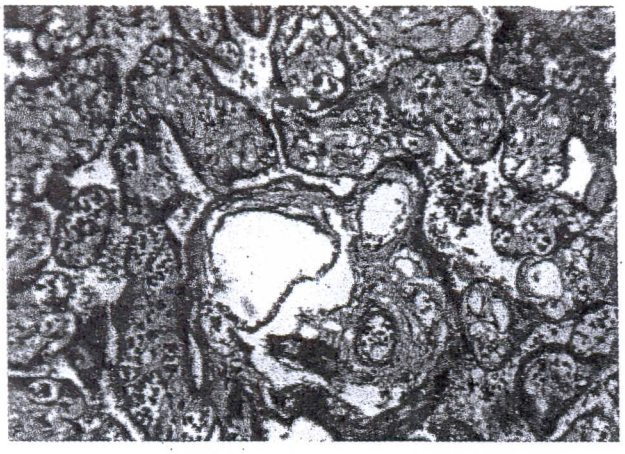

Fig. 3
Microphotograph of placenta showing telangiectatic malformation of the chorionic villi (H&E,x450)

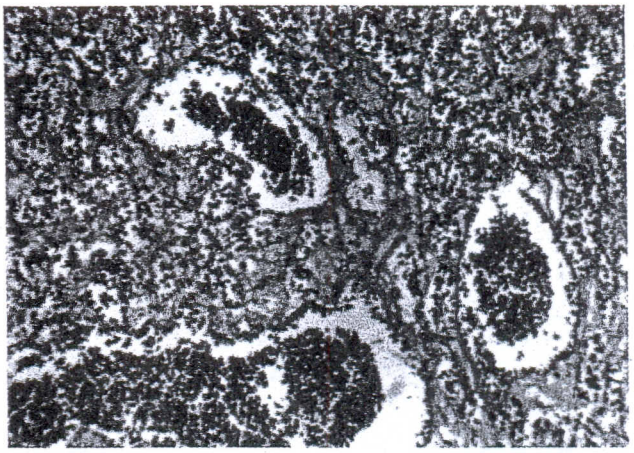

Fig. 4
Chorioangioma composed of closely packed capillaries distended with red blood cells (H&E,x450).

incidence of small tumours is between 1:70 and 1:100, but large chorioangioma are reported in only 1:9000 deliveries[3]. Chorioangioma can be as small as 0.5cm to as large as 7-10 cm. Large haemangiomata are seen most commonly as bulging protruberances on the fetal surfaces of the placenta being attached by a vascular pedicle, but can also occur on the maternal surface. Large chorioangioma have a purplish red, glistening, encapsulated outer surface. They can be round, ovoid or reniform, are frequently bosselated and sometimes deeply grooved by bands of fibrous tissue. The cut surface of the tumour may be brown, yellow, tan, plum coloured, red or white and is usually smoother and firmer than the normal placental tissue[4,5].

Three histological patterns of chorioangioma are described:

a) Angiomatous – numerous blood vessels are set in a loose, inconspicuous stroma containing scanty fibrous tissue.

b) Cellular – the tumour consists principally of loose, immature, cellular mesenchymal tissue containing only a few ill-formed vessels.

c) Degenerate – the tumour shows myxoid change, hyalinization, necrosis or calcifications. Very rarely fat may be present[1].

Haemangioma can occur due to villous hyperplasia, placental inflammation, villous fusion or organization of a

thrombus. Haemangiomata probably arise as malformations of the primitive angioblastic tissue of the early placenta[4]. There is a strong relationship between placental chorangiomas and gestation at high altitude, suggesting the occurrence of vascular growth factors induced by hypoxia which leads to excessive villous capillary proliferative stimulation[5].

The maternal complications include polyhydramnios, seen in 18% to 35% of all cases of chorioangiomas > 5cms in diameter which was also reported in our case. Several theories have been postulated for hydramnios, the commonest being localization of tumour near the cord insertion which creates a mechanical obstruction of blood flow leading to transudation of fluid through the large vascular surface of the tumour as the large tumour acts as an arteriovenous shunt. Such arteriovenous shunting in a chorioangioma was demonstrated by Reiner and Fries in a postmortem specimen by means of radio-opaque material[6].

Pre-eclampsia is another clinical condition related to chorioangiomas due to proliferation of cytotrophoblastic cells in the tumor capsule, associated with increased maternal serum alfa-feto protein levels and raised HCG titres. Two cases of placental angioma associated with toxaemia of pregnancy were reported by Heggtveit *et al.*[7]. Other maternal complications include abruptio placenta and premature labour. Khong has reported cases of chorangiomas with trophoblastic proliferation referred to as chorangiocarcinomas[8]. Maternal asymptomatic thrombocytopenia and mild coagulopathy associated with chorioangiomas was reported by Limaya and Jean Gilles. They believed that the thrombocytopenia was the result of necrosis in the angioma[3].

Fetal and neonatal complications include hydrops fetalis, cardiomegaly, hepatomegaly, congestive cardiac failure, congenital anomalies like aortic stenosis, edema, anaemia, intrauterine fetal distress, disseminated intravascular coagulation and fetal demise[1,4].

Greene and Iams have reported thrombocytopenia in newborns whose placentas had chorioangiomas, probably as a result of sequestration of platelets in the placental capillaries. It may be associated with heart failure and disseminated intravascular coagulation[1].

Ballantyne syndrome, another interesting syndrome was first described by Ballantyne in 1892 was also reported by Dorman and Cardwell was associated with large chorioangioma. This syndrome also referred to as maternal hydrops syndrome, pseudotoxemia, triple edema or mirror syndrome occasionally exists in a variety of conditions such as nonimmune hydrops, moles, or teratoma. It occurs due to iso-immunisation or in response to abnormal fetal or maternal metabolism[9]. Drut *et al* have reported the presence of hemangioendotheliomas and multiple chorioangiomas in the Beckwith- Weidemann syndrome[10].

Chorioangiomas have to be differentiated from chorangiosis and chorangiomatosis. Marchetti considered these lesions as a diffuse ectasia of placental villous capillaries that results from abnormal maturation of villi and hypoxia[11].

References

1. Greene Eleanor E., Iams Jay D. — Chorangioma: A case presentation. *Am J Obstet Gynec.* **148**:1146-1148, 1984.
2. Zahradka M., Zahradka W., Mach S. — Chorangioma of the placenta. *Zentralbl Gynakol.* **112**(20):1309-1313, 1990.
3. Nirmala S., Limaye, Jean-Gilles Tchabo. — Asymptomatic thrombocytopenia associated with chorioangiomata of placenta. *Am J Obstet Gynec.* **161**:76-77, 1989.
4. Fox H., G.W. Elston. — Pathology of the placenta: London Philadelphia: W.B. Saunders, 1978.
5. Bernischke K., Kaufmann P. — Pathology of Human Placenta. 4th edition. New York: Springer Verlag, 2000.
6. Reiner L., Fries E. — Chorangioma associated with arteriovenous aneurysm. *Am J Obstet Gynec.* **93**:58-64, 1965.
7. Heggtveit H.A., Carvalho Roberto De, Nuyens Andreas J. — Chorangioma and toxaemia of pregnancy. *Am J Obstet Gynec.* 291-292, 1965.
8. Khong T.Y. — Chorangioma with trophoblastic proliferation. *Virchows Archiv.* **436**:167-171, 2000.
9. Dorman Sharon L., Cardwell Michael S. — Ballantyne syndrome caused by a large placental chorioangioma. *Am J Obstet Gynec.* **173**:1632-1633, 1995.
10. Drut R., Drut R.M., Toulouse J.C. — Hepatic hemangioendotheliomas, placental chorioangiomas and dysmorphic kidneys in Beckwith-Weidemann syndrome. *Pediatr. Pathol.* **12**:197-203, 1992.
11. Marchetti A. — A consideration of certain types of benign tumours of the placenta. *Surg. Gynecol Obstet.* **68**:733-743, 1939.