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Placental Chorangiosis Association with Increased Fetal Morbidity

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ABSTRACT
Placental Chorangiosis is a rare placental vascular pathology that is associated with prolonged hypoperfusion or tissue hypoxemia. It renders a challenge to obstetrician with their potential critical complications altering feto-maternal outcome. The clinopathological features are presented of pregnancy where placenta histologically showed diffuse severe Chorangiosis. The latter is reported placental vascular anomaly, with recent studies have indicated to be an important sign of neonatal morbidity and mortality. The differential diagnosis, clinical effects are discussed.

Keywords: *placental Chorangiosis, feto-maternal outcome.*

INTRODUCTION

Chorangiosis is an uncommon, miscellaneous vascular pathology of terminal chorionic villi demonstrating proliferation of villous capillaries without stromal hypercellularity.[1,2]Studies show high perinatal mortality and congenital anomalies varying from 42% and 39%.[3]Its commonly associated with various feto-maternal and placental conditions such as women living in high altitudes, pre -eclampsia, eclampsia, diabetes mellitus, severe anemia, syphilis, smoking.[2, 6]Generally considered as adaptive response to chronic maternal hypobaric hypoxia.[4, 6]

CASE REPORT

A 28 yr old lady; gravida 3 with unsupervised pregnancy presented at 39 weeks of gestation in emergency with history of leaking per vaginum since last 2 days. It was associated with fever and foul smelling vaginal discharge. On examination, she was a case of term pregnancy with growth restricted fetus, clinically reduced liquor and presence of uterine tenderness and foul smelling discharge suggestive of chorioamnionitis. Liquor was also meconium stained.

Haematological investigations revealed leucocytosis and neutrophilia. Sonography was suggestive of growth restricted foetus with severe oligohydramnios, upper segment placenta and no gross congenital anomaly in the baby. Pregnancy was terminated by an emergency caesarean section and she delivered a baby boy of weight 2.3kg with apgar6,8. The neonate was admitted in nursery for 48hours and got discharged. Specimen of placenta with intact membranes was sent for histopathology.

On gross examination (figure1), placenta with umbilical cord and membranes together weighed 510gms. Placenta measured 20 x 16 x 4cms. Maternal and fetal surfaces appeared normal. Cord measured 20 cm in length, all the three vessels identified. Membranes were normal.

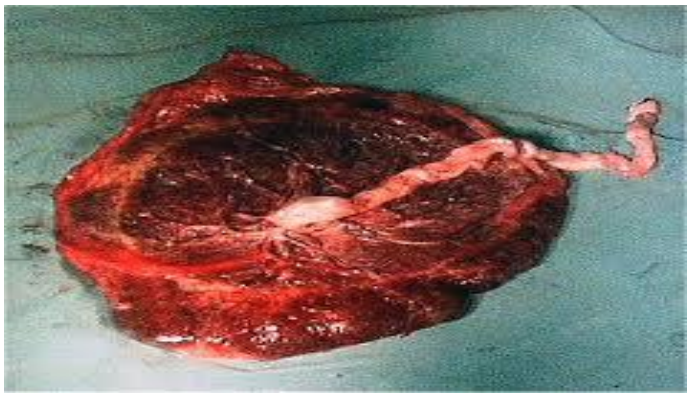

FIGURE1- Gross Photograph of Placenta With Membranes

On microscopy, (figure 2) sections from the random areas of placenta showed dysmaturity of chorionic villi displaying hypervascularity of capillary-sized vessels. This was seen in at least 10 microscopic fields, at least 10 villi, having atleast 10 capillary lumina at 10x magnification. Intervillous stroma was scantily cellular. Sections from the cord and membranes were unremarkable.

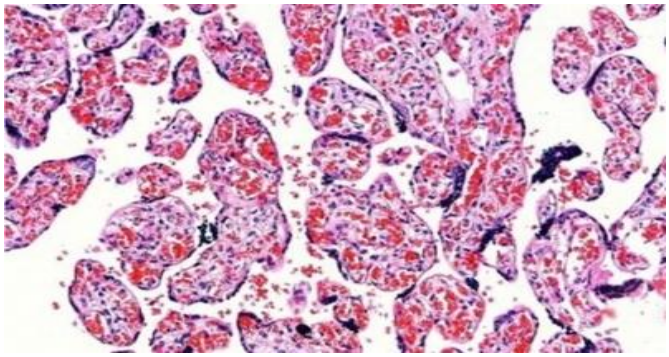

FIGURE 2- Microscopy of Hypervascular Choronic Villi Containing more than10 Capillaries Per Villous. [H & E, Xio] Magnification

DISCUSSION

In a normal placenta, chorionic villi rarely contain more than five capillary lumina,[3,6] even when the same vessel is present in more than one plane of section.[2] The diagnostic criteria for Chorangiosis was described by Altshuler G. in 1984, as 10 or more chorionic villi, each containing 10 or more capillaries, in each of the 10 microscopic fields, viewed at 10x magnification in 3 or more random non-infarcted placental areas.[1] The differential diagnosis include congestion, placental malperfusion, chorangioma and chorangiomatosis. In placental congestion, the villi show numerically normal vessels.[3] In placental malperfusion, there is severe subtotal placental congestion but diffuse villous capillary hypervascularity is not seen.[3]Chorangioma and chorangiomatosis both show localized proliferation of vascular channels within a single villous covered by trophoblastic tissue. Increased stromal cellularity and collagenisation is seen before 32 weeks of gestation.[2] Also, in chorangiomatosis the vessels have a thick wall containing actin-positive smooth muscle cells.[6] Chorangiosis is more common after 37 weeks of pregnancy, is a diffuse process involving the tips of terminal villi and has numerous closely approximating capillaries with intact basement membrane.[2] Etiological factors associated with chorangiosis may be maternal, placental or fetal conditions. The maternal conditions include women living in high altitudes, pre -eclampsia, eclampsia, diabetes mellitus, severe anemia, syphilis, smoking and oxidative stress related to any other cause.[3, 5] The placental associations are abruptioplacente, placenta previa, villitis due to rubella, cytomegalovirus, syphilis and bartonella infection.[2, 6] Umbilical cord anomalies include single umbilical artery.[6] The fetal factors are the presence of major congenital anomalies and an Apgar score of less than5, 6 and fetal death. The pathogenesis of Chorangiosis is thought to be adaptive response to hypoxic stimulus which causes excessive villous capillary and connective tissue proliferation probably due to the induction of growth factors. [4, 6]

CONCLUSION

Till date, to the best of our knowledge, the exact incidence of Chorangiosis has not been documented and seems to be a rare observation. In

the present case, fetal growth restriction was present with a low apgar score requiring nursery admission. It's an uncommon pathology associated with increased fetal morbidity and mortality. It should be considered in the differential diagnosis while performing histopathologial examination of placenta in such cases.

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