Morphological and histological changes in placentas of preeclamptic patients

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Abstract

Preeclampsia is defined as a syndrome with onset of hypertension and proteinuria after 20th week of gestation in previously normotensive, non-proteinuric pregnant women. Placenta and its vascularity seem to be involved in preeclampsia.

In the present study a total of sixty placentas were collected from labour room of AIIMS and of theses thirty were from normotensive pregnancies and rest thirty were from preeclamptic patients. The placental tissue from each subject was fixed and subjected to paraffin embedding and H & E staining. The weight of placenta and baby's birth weight was recorded. The gross and histological examination of each placenta was done.

The normal term placenta showed normal morphology however occasional fibrinoid foci were seen externally in preeclamptic placentas. The placental and baby's birth weight was lower in preeclamptic patients than normal ($p<0.0001$). On light microscopic examination, a classic picture of normal placenta showed chorionic villi, extracytotrophoblastic matrix, connective tissue and blood vessels. However the histological picture of preeclamptic placenta showed increased branching of chorionic villi, syncytial knots, and increased vascularity of villi. The large number of intermediate villi were covered with cytotrophoblast and syncytiotrophoblasts which reduced the exchange surface area. In preeclampsia a state of hypoxia is known to be created which leads to increase in blood vessels and reduced fetoplacental circulation. These changes in turn may affect the growth and development of fetus.

Key Words: Preeclampsia, placenta, syncytiotrophoblast, cytotrophoblasts, fetal vessels.