

Thesis Title	Morpholgal and Histochemical Characterization of Placental cells of Thai Population.		
Author	Miss Jintana Parama		
M.Sc.	Anatomy		
Examining committee :			
	Assis. Prof. Wiwat	Wangpredalertkul	Chairman
	Assoc. Prof. Dr. Sermsak	Sethavanich	Member
	Assoc. Prof. Dr. Sumalee	Siriaungkul	Member

Abstract

This study was conducted to characterize the placental cells of Thai population. Fifty-two normal delivery placenta were collected from Maharaj Nakorn Chiang Mai Hospital for gross parameter measurement and 20 indexed placenta were chose for histological study.

Findings: The placenta consisted of the placental disc, placental membrane and umbilical cord. The average placental weight was 539.26 g., placental diameter was 9.4 cm., cord length was 47.7 cm. and the umbilical cord insertion from the margin of the placental disc was 5.0 cm.

The placental disc consisted of the chorionic plate, fetal side of the placenta. The chorionic villi sprouted from the chorionic plate and branched to form stem villi, inermidiate villi and terminal villi, respectively. The chorionic villi composed of 2 types of trophoblastic covering, the outer syncytiotrophoblast and the inner cytotrophoblast layers. The syncytiotrophoblast appeared darker stain than cytotrophoblast. These cells were the continuous layer in some chorionic villi, but some areas had the fibrin replaced the syncytiotrophoblast. Some areas had the aggregated nucleus that formed the syncytial knot. No mitotic figure found in these cells.

Cytotrophoblast were the discontinuous inner layer of the trophoblastic covering clustered under th syncytiotrophoblastic layer. They were found in every placneta examined and PAS (Periodic Acid Shiff) made them clearly distinguished.

Cellular contents of the villous stroma were mesenchyme and Hofbauer cell, and the constituents of the intervillous space were red blood cell, infiltrating leukocytes and fibrin.

The third type of the trophoblast found was intermediate trophoblast. These were polymorphic cells with lobulated nucleus and prominent nucleolus, but binucleated cells were occasionally noticed. They were either among decidual cells of the maternal side, or in the trophoblastic layer of the chorion, or filled in the intervillous space with fibrin.

Collagen and smooth muscle fibers were also shown. Collagen fibers were major constituent of the chorionic plate, villous stroma and the decidua basalis; with smooth muscle fibers were parts of the blood vessels. Elastic fibers, anyhow, were not demonstrable in the regions described above.

Decidual cells were large, pale stained, single nucleus cell. They were aggregated in the maternal side of the placental disc.

Amnion was a membranous tissue composed of a single layer of amniotic epithelium either with cuboidal or columnar shaped, resting on prominent basement membrane. The underlying compact layer was eosinophilic matrix with the outer fibroblastic layer. Chorion was a compact membranous sheath with 3-10 layers of trophoblasts mostly cytotrophoblasts and intermediate trophoblasts. The external surface of chorion, however, was continuous with decidua parietalis.

Interestingly, many types of amniotic epithelium were found in each section of the cord. They were either simple low cuboidal at one spot or stratified polygonal at the others. Wharton's jelly was shown to be comprised of fibroblast as the cellular component and the matrix which is clearly visible with trichrome technique. There were 2 umbilical artery and one umbilical vein in the umbilical cord. The internal elastic lamina of the vein was clearly demonstrated but not in the arteries. Intermingled elastic fibers in the tunica media of these vessels, however, were noticed.