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EMBRYOLOGY ASSIGNMENT

SECOND WEEK OF EMBRYONIC DEVELOPMENT

Three major events takes place

1. Completion of implantation
2. Formation of bilamina germ disc
3. Development of extra embryonic structures

DAY 8

Blastocyst is partially embedded in the endometrium at day 8. The syncytiotrophoblast continues to enrode into the region of endometrium. The cytotrophoblast will divide and continuously and migrate to the region of syncytiotrophoblast. The embryoblast will then differentiate into two cells

- The cuboidal cells called Hypoblast
- The columnar cells called Epiblast

The cells of the epiblast that are adjacent or nearer to the cytotrophoblast are referred to as Amnioblast which surrounds the amniotic cavity. The hypoblast and epiblast give rise to bilamina germ disc

DAY 9

The blastocyst is deeply embedded in the endometrium. The surface epithelium is closed by fibrin coagulant. It development continues a membrane development adjacent to the cytotrophoblast called exocoelomic membrane which together with cytotrophoblast form exocoelomic cavity. Then the formation of trophoblastic lacuna due to development of vacules in the region of the syncitiotrophoblast.

DAY 11 - 12

Blastocyst is completely embedded in the endometrium. As the blastocyst is moving deep, it ruptured some capillaries called sinusoids. The ruptured sinusoids communicate with the lacunae to transfer oxygen, nutrients to the embryo. A space of mesoderm develop between the region of cytotrophoblast with Amnioblast and cytotrophoblast with exocoelomic membrane. The mesoderm covers all layer except the connecting stalk. The space covered by the membrane is called the extraembryonic cavity or cowlings. These cavities divide the mesoderm into two different part, portion before and after the cavity. The part of the extraembryonic mesoderm close to the cytotrophoblast is called extraembryonic somatic mesoderm. The mesoderm lining the region between amniotic and exocoelomic membrane and the region between the mesoderm layer and the Amnioblast and exocoelomic membrane is called the embryonic splanchnic mesoderm.

As development continues. A reaction takes place called the decidual reaction where there is accumulation of glycogen and lipid in their cytoplasm and are called decidual cells which cause the

endometrium to swell. The primary function of the decidual reaction is to provide nutrition for the early embryo and an immunological privilege site for conceptual.

DAY 13

The surface defect by the fibrin coagulum has been completely covered by the surface epithelium. Cells of the cytotrophoblast proliferate locally to penetrate into syncytiotrophoblast forming cellular columns surrounded by syncytium. The primary yolk sac becomes reduced in size and is known as secondary yolk sac, in humans the yolk sac doesn't contain yolk but is responsible for nutrient transfer between the foetus and mother. Portions of exocoelomic cavity are pinched off to form the exocoelomic cysts. With development of the blood vessels, the connective stalk becomes the umbilical cord.