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Course: embryology

Level: 200

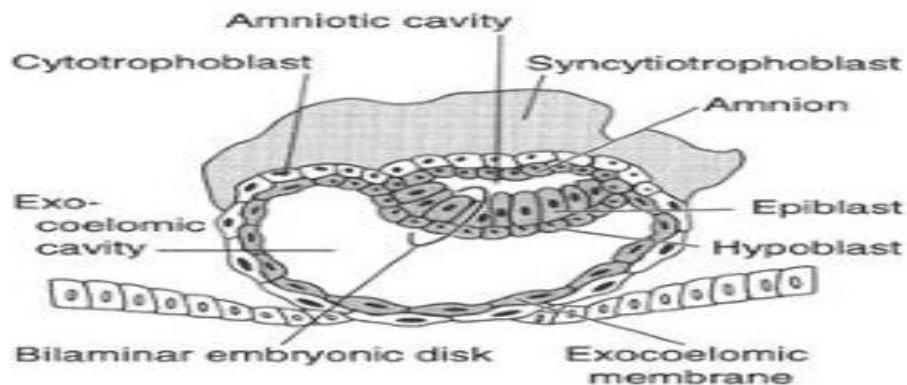
Embryology assignment

Second week of development

1. Completion of implantation.
2. Formation of bilaminar germ disc
3. Formation of extracellular structures

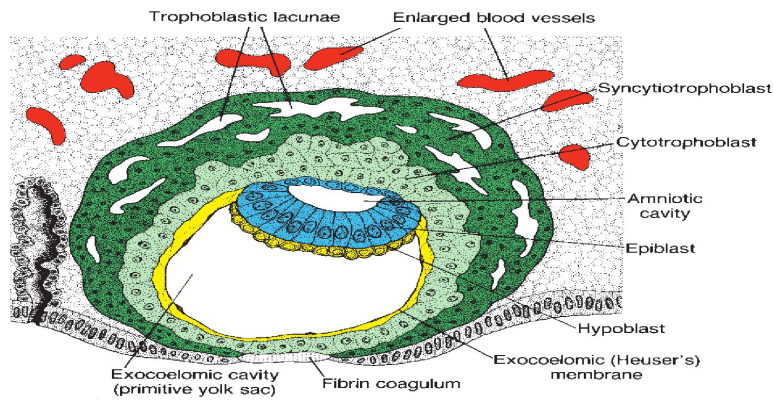
Day 8

- The blastocyst embeds partially in the endometrium
- The inner cell mass embryo blast divides into hypoblast and epiblast the hypoblast is made up of cuboidal cells and the epiblast is made up of columnar cells. The flat ovoid disc of bilaminar germ disc it is composed of epiblast and hypoblast the upper side of the epiblast is called aminoblast, the aminoblast and epiblast surrounds a cavity called amniotic cavity.



Day 9

- The blastocyst is deeply embedded in the endometrium
- The penetration defect in the surface epithelium is covered by fibrin coagulum
- A membrane lies adjacent to the cytotrophoblast, this membrane is called heuser's membrane or exocoelomic membrane
- The exocoelomic membrane together with the cells of the hypoblast surround a cavity called the exocoelomic cavity.
- On day 9 vacuoles develop in the region of the syncytiotrophoblast these vacuoles develop into lacuna trophoblastic lacunae.



Day 11-12

- The blastocyst is completely embedded in the endometrium
- Ruptured capillaries in the maternal region is called sinusoids
- A primordial uteroplacenta circulation is formed between the maternal sinusoids and the trophoblastic lacunae through the primordial uteroplacenta circulation oxygen and nutrients are transport to the blastocyst.
- A layer of mesoderm arises covering the region of the exocoelomic membrane and the cytotrophoblast the mesoderm covers the space except the connecting stalk (the future form of the umbilical cord).
- Cavities develop in the region of the mesoderm the cavities are called extra embryonic cavities. The cavities divide the mesoderm into two parts the embryonic somatic mesoderm surrounding the region of the cytotrophoblast and the extra embryonic cavities, also the embryonic splanchnic mesoderm surrounding the region of the amnion and the extra embryonic cavities.

Decidual reaction

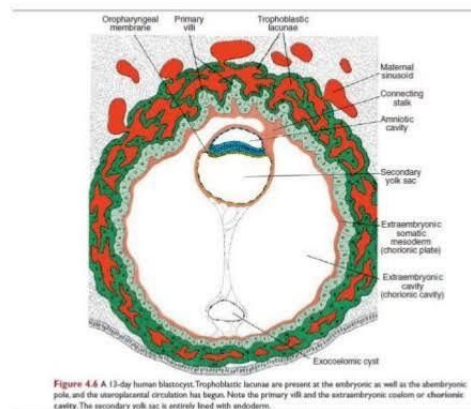
Once the conceptus implants the endometrium connective tissue cells undergo a transformation, called Decidual reaction. The cells of the endometrium swells i.e. the Decidual cells swell due to the accumulation of glycogen and lipid in their cytoplasm. Decidual reaction is just a way to ensure that proper nutrients are provided to the conceptus.

Day 13

The surface defect in the endometrium has been completely covered by the surface epithelium. Occasionally bleeding occurs at the implantation site as a result of increased blood flow into the lacunar space.

- The cells of cytotrophoblast acquire a syncytium towards the region of syncytiotrophoblast and then become the primary villi.
- The extra embryonic cavity develops and forms the chronic cavity.
- The connecting stalk gives rise to the umbilical cord.
- There is a formation of exocoelomic cyst formed when the primary yolk sac was pinched off there by reducing its size and forming the exocoelomic cyst and the secondary yolk sac.

DAY -13



Clinical correlates

There is formation of human chronic gonadotropin hormone it is produced by the syncytiotrophoblast it ensures that the corpus luteum doesn't degenerate ensuring the corpus luteum is secreting oestrogen and progesterone. The human chronic gonadotropin is the basis of pregnancy test as its presence indicates that the woman is pregnant.