

NAME: - ADENOLA ADEDAMOLA PIUS

MATRIC NUMBER: - 18/MHS01/020

EMBRYOLOGY ASSIGNMENT

Discuss the 2nd week of development.

During the second week of Embryonic development, the following events take place:-

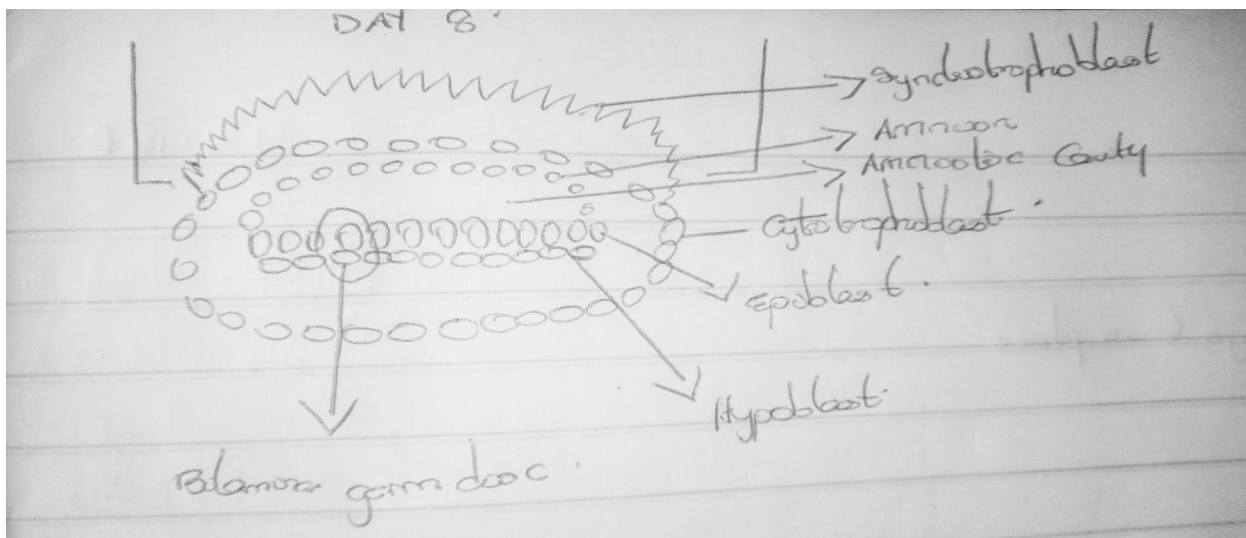
- 1) Completion of implantation of blastocyst
- 2) Formation of bilaminar disc
- 3) Formation of extra-embryonic structures

DAY 8

Blastocyst is partially embedded in the endometrium. The cells of the syncytiotrophoblast continues to erode the endometrium and the cytotrophoblast continue to divide and migrate into the region of the syncytiotrophoblast, where they lose their cell membranes.

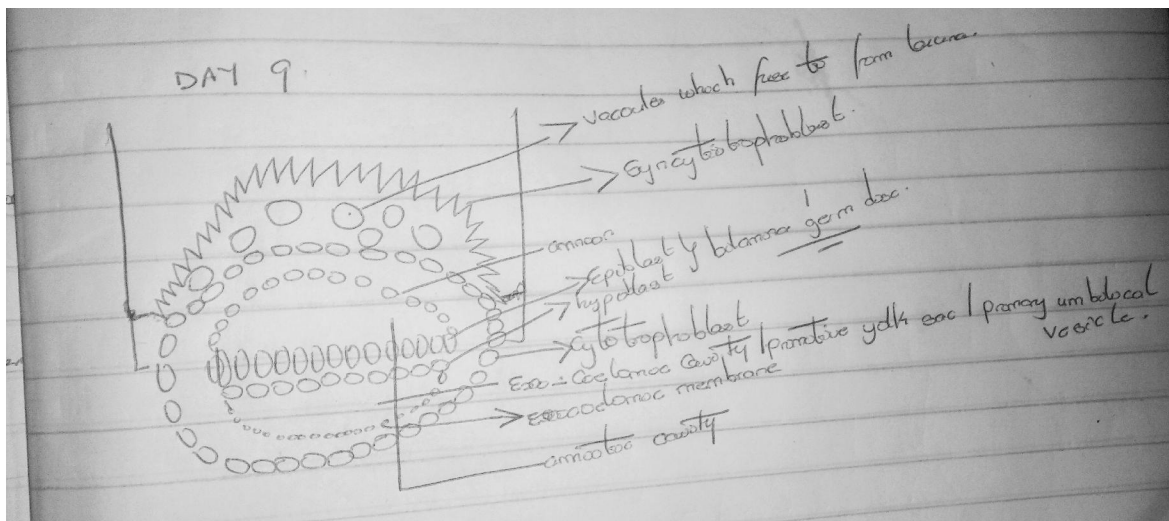
The inner cell mass (embryoblast) divides into 2 layers :- I) Epiblast ii) Hypoblast

Both the epiblast and hypoblast form the bilaminar germ disc. The cells of the epiblast adjacent to the cytotrophoblast is known as **AMNION** and forms a small cavity known as the amniotic cavity.



DAY 9

Blastocyst is more deeply embedded in the endometrium. The penetration defect on the surface epithelium is now covered by fibrin coagulum. Some vacuoles appear inside the trophoblast and fuse to form numerous number of lacuna. It is known as lacuna stage. Cells of the hypoblast form a thin membrane which lines the inner surface of the cytotrophoblast. This membrane is known as the exocoelomic membrane. This membrane forms a new cavity called the exocoelomic cavity/ primitive yolk sac/ primary umbilical vesicle.

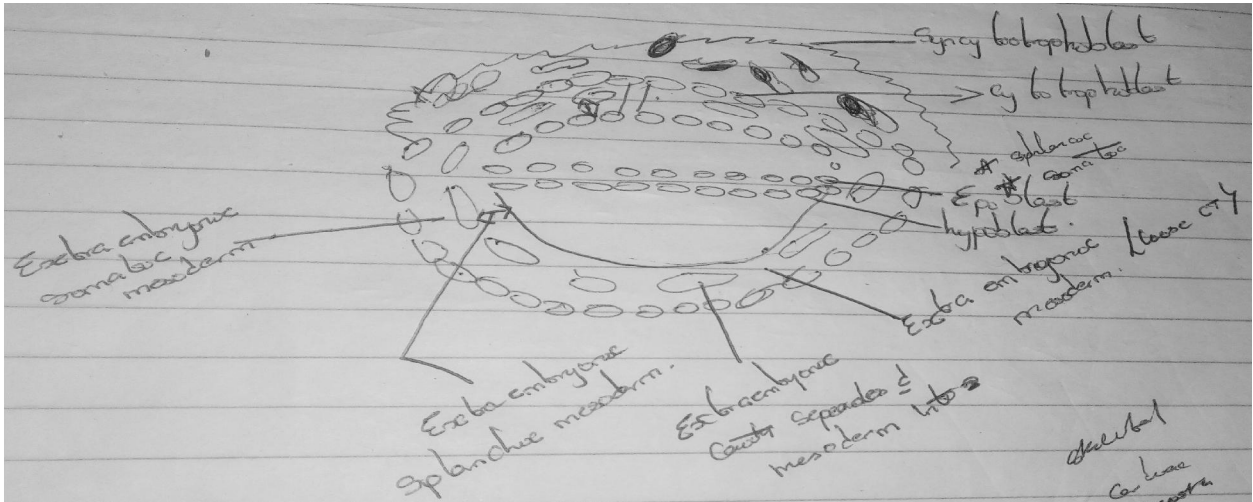


DAY 11-12

Blastocyst is now completely embedded in the endometrium. The cells of the syncytiotrophoblast penetrate deeper the stroma and erode the endometrial lining of the endometrial capillaries. The ruptured capillaries are referred to as sinusoids. When this happens, maternal blood enters the lacuna network, thus, the primordial uteroplacenta circulation is established. A new CT appears between the exocoelomic membrane and cytotrophoblast which is known as the extra embryonic mesoderm. Some cavities appear within the extra embryonic mesoderm and divides it into 2 layers:-

- I) Extra embryonic somatic mesoderm
- II) Extra embryonic splanchnic mesoderm.

During this time, decidual reaction also takes place. During decidual reaction, the embryo swells because of accumulation of glycogen and lipid in their cytoplasm, they are known as decidual cells. Decidual reaction is to provide nutrition for the early embryo and immunologically privilege for the conceptus.



DAY 13

Surface defect of the endometrium is completely healed. Cells of the cytotrophoblast penetrate the syncytiotrophoblast forming cellular columns. Cellular columns with syncytial covering is known as **PRIMARY VILLI**. Primary yolk sac becomes smaller in size and is known as the secondary yolk sac/ definitive yolk sac. By the formation, large portions of the exocoelomic cavity are pinched off forming the exocoelomic cysts. Meanwhile, the extraembryonic coelom expands and forms a large cavity called the chorionic cavity the extraembryonic mesoderm lining the inside of the cytotrophoblast is then known as the chorionic plate. The only place where extraembryonic mesoderm traverses the chorionic cavity is in the connecting stalk. With development of blood vessels, the connecting stalk becomes the umbilical cord.

