Equator University of Science and Technology

Anatomy Department

Course: General Histology and Embryology FHS 1102

By: Dr. Musab Husein

Tutorial (8)

Fetal Membranes

2/11/2026

1- A pregnant woman undergoes an ultrasound examination during early pregnancy.

a) What is the name given to the endometrium after implantation?
b) Name the three regions of the decidua.
c) Which region forms the maternal part of the placenta?

2- During placental development, some areas of the chorion develop numerous villi, while others lose their villi.

a) What is the name of the villous part of the chorion?
b) What is the name of the smooth, non-villous part?
c) Which part contributes to the fetal component of the placenta?

3- During early embryonic development, a large space forms within the extraembryonic mesoderm.

a) What is this space called?
b) Which two layers of extraembryonic mesoderm surround it?
c) What happens to this cavity as the amniotic cavity enlarges?

4- A pregnant woman is diagnosed with an abnormal volume of amniotic fluid.

a) Name two important sources of amniotic fluid during fetal life.
b) How is amniotic fluid removed from the amniotic cavity?
c) Why is fetal swallowing important in regulating amniotic fluid volume?

5- During pregnancy, maternal and fetal blood circulate close to each other within the placenta, but normally do not mix directly.

a) What is the name of the barrier separating maternal and fetal blood?
b) Name two important cellular components of this barrier.
c) Mention two substances that can and two that cannot cross this barrier from the mother to the fetus.

6- A pregnant woman undergoes amniocentesis for prenatal investigation.

a) Which fetal membrane is penetrated during the procedure?
b) What type of fluid is collected?
c) Mention two types of fetal information that can be obtained from the collected sample.

7- A pregnant woman undergoes chorionic villus sampling for prenatal genetic testing.

a) Which fetal structure is sampled during this procedure?
b) What type of prenatal abnormality can be investigated using this technique?
c) Give one important difference between chorionic villus sampling and amniocentesis.

8- During embryological development, part of the yolk sac becomes incorporated into the developing embryo.

a) Which part of the developing gastrointestinal tract is initially formed through this incorporation?
b) Through which region is the yolk sac connected to the developing gut?
c) What happens to most of the yolk sac as development progresses?

9- In early embryonic development, blood vessels develop around the yolk sac.

a) What is the name of the vessels connecting the yolk sac circulation with the embryo?
b) What is their main function during early development?
c) What happens to these vessels as embryonic development progresses?

10- An abnormal connection between the urinary bladder and the umbilicus is identified in a newborn.

a) Which embryonic structure is responsible for this connection?
b) What is the name of the condition when this connection remains completely patent?
c) What is the normal adult remnant of this structure?

11- During development, structures connecting the embryo to the developing placenta contribute to the formation of the umbilical cord.

a) Which embryonic structure forms the main connection between the embryo and the chorion?
b) Name one other embryonic structure incorporated into the developing umbilical cord.
c) What is the function of Wharton's jelly?

12- An ultrasound examination identifies a twin pregnancy with two separate chorions and two amniotic sacs.

a) What is the name given to this type of twin pregnancy?
b) What type of placentation is usually associated with it?
c) How does this arrangement differ from a monochorionic diamniotic pregnancy?

13- A pregnant woman develops severe postpartum haemorrhage because the placenta fails to separate normally from the uterine wall.

a) What is the name of the condition in which chorionic villi attach abnormally to the uterine wall?
b) Which maternal tissue is normally important in limiting excessive placental attachment?
c) What is one major risk factor for this condition?

14- During placental development, some chorionic villi attach the fetal placenta to the maternal tissue.

a) What are these villi called?
b) What is their main function?
c) What are the villi called that project freely into the intervillous spaces?

15- As pregnancy progresses, the amnion expands and comes into close contact with the chorion.

a) Which membrane is located closest to the fetus?
b) Which membrane forms the outer fetal membrane?
c) What happens when these two membranes fuse?