

HD-10: Development of the Endoderm

Reading Assignment:

Larsen 4th edition: Review Chapter 14, GI tract pp. 435-477.

Learning Objectives:

The basic objective can be summed up easily: know your gut! This includes how it forms, its divisions and how they are distinguished, its derivatives and how they form. Concentrate on the stomach and understand its rotation and the consequences of that rotation. Try to imagine what would happen if something fails, because anything you can correctly imagine probably actually occurs and causes disease. Think of the mesenteries, the liver, the pancreas, and the gall bladder in the context of the rotating stomach. Go on to the midgut and learn the consequences of its prodigious growth and grotesque total of 270° of rotation. Think of where the midgut goes to develop and what it must do to come home. Imagine again the failure of the midgut to do what is expected of it, and try to construct in your mind the hideous defects that arise when the midgut misbehaves. Again, think of what has to happen to the mesenteries as the ascending and descending colon become retroperitoneal. Finally learn about the formation of the hindgut and the partitioning of the cloaca. One last time, give your imagination free rein to envision the consequences of errors. Be sure you know the role, not only of growth in the process of development, but also of death and what happens when death is inadequate.

Glossary:

Cuddling: asymmetric growth and rotation.

Mesogastrium: gut associated mesentery.

Polyhydramnios: an excess of amniotic fluid, occurs when fetus cannot swallow amniotic fluid.

Recanalize: reopening of an occluded lumen.

Volvulus: intestinal obstruction due to a knotting and twisting of the bowel.