



Lecture title: Digestive System /The stomach and intestine

Lecturer Affiliation: *Naziha Sultan Ahmed, BVMS, MSc*

Scientific degree (Assistant Prof.), Department of Anatomy, College of Veterinary Medicine, University of Mosul, Mosul, Iraq

<https://orcid.org/0000-0002-2856-8277>

https://www.researchgate.net/profile/Naziha_Ahmed

The stomach and intestine:

***Stomach of ruminants:**

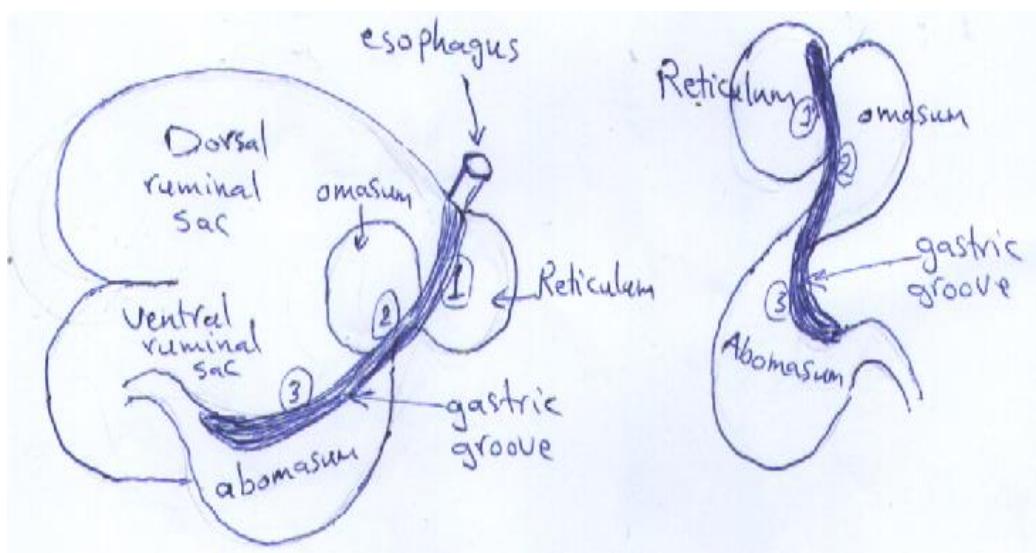
The gastric groove : groove extend from the esophageal opening of the rumen (cardia) till the pyloric opening . It consist of 3 parts :

1=Reticular part : extend from esophageal opening of rumen till reticulo-omasal opening .

2=Omasal part : extend from reticulo-omasal opening till the omaso-abomasal opening .

3=Abomasal part : extend from the omaso-abomasal opening till the pyloric opening at the lessor curvature of the abomasum .

Gastric groove has physiological importance : In newborn animals who feed on milk (suckling animals) this groove is closed from it's free edge so it called gastric tube which reach the milk from cardia to the abomasum directly because milk doesn't need the biological digestion , so milk doesn't need to pass through the fore stomach compartments .

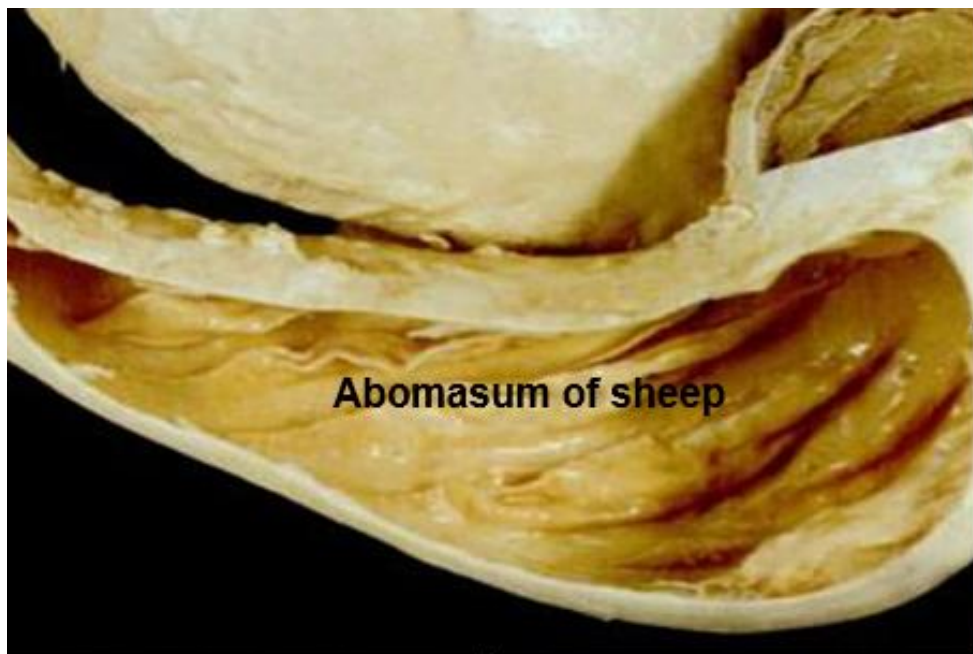


The abomasum :-pear-shape sac represent the true stomach , where the real digestion occur. It has two curvatures (lesser curvature dorsally and greater curvature ventrally) and two surfaces (parietal and visceral) and two openings (omaso-abomasal opening which controlled by vela abomasica and pyloric opening which controlled by torus pyloricus) .



Abomasum lies in the right side of abdominal cavity , starting beneath the omasum ,

and part of abomasum lies beneath the rumen , while pyloric part of abomasum presents dorsally oblique with the right side of the rumen to join the duodenum .



The mucosa of the abomasum is glandular divided into two regions :

1-Region of proper gastric glands (at fundus and body regions) , has brown-red color arranged as oblique spiral folds .

2-Region of pyloric glands : yellow in color . The mucosa here forms disordered folds

*Pyloric opening controlled by a circular process arising from the inner side of lesser curvature called the torus pyloricus .



The intestine :

extend from the pylorus of stomach or the abomasum and end at the anus . Intestine divides into two parts :

1-Small intestine which includes duodenum , jejunum and ileum .

2-Large intestine which includes cecum , colon , rectum .

Small intestine differ from large by the following points :

1-It's diameter is lower than that of the large intestine .

2-Presence of intestinal villi in the mucosa of the small intestine .

The parts of small intestine are : duodenum , jejunum & ileum .

The duodenum :

consist of three parts ; cranial , descending and ascending .

1-Cranial part of duodenum : short extend from the pyloric opening of stomach or abomasum passing from the right side along the visceral surface of liver and end at cranial flexure .

Cranial duodenum of horse and ruminants contain sigmoid flexure .

Cranial duodenum connect with the liver by hepato-duodenal ligament .

Cranial duodenum receive bile and pancreatic ducts .

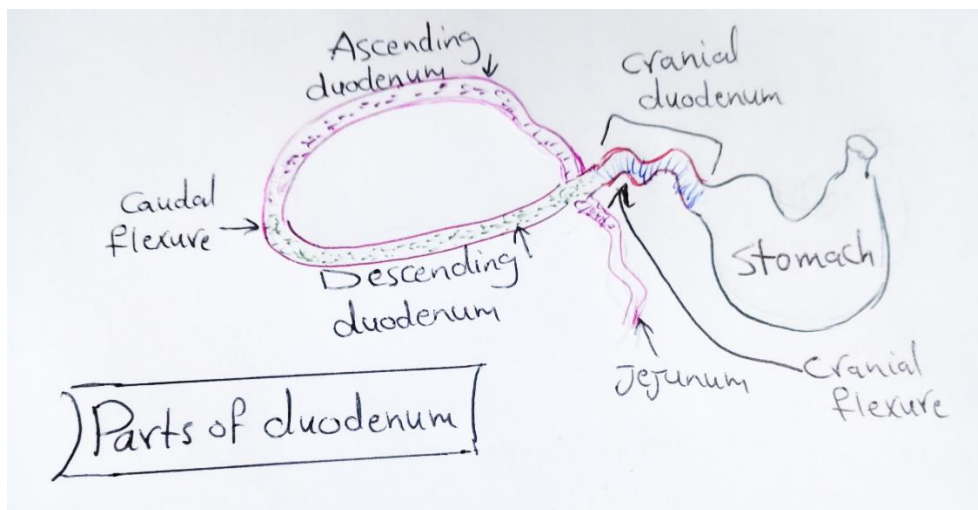
2-Descending part of duodenum : extend from cranial flexure caudally till the caudal flexure near the right kidney then the duodenum turn to the left and cranially making the third part of duodenum .

3-Ascending part of duodenum : which connect with descending colon by the duodeno-colic ligament , then the cranial end of the ascending



duodenum bent ventrally to attach the jejunum by the duodeno-jejunal flexure .

Descending and ascending parts of the duodenum form together U-shape around the root of the mesentery and cranial mesenteric artery and pancreas.



The jejunum:

The largest part of small intestine .

It called jejunum because , when we open it , it's almost empty or has little

liquid ingesta .

Jejunum start from the duodeno-jejunal flexure , and end at jejuno-ileal flexure.

*The mesentry of the jejunum called mesojejunum .

Mesojejunum is very long in dog and horse , this lead to wide range of motility (movement) in these animals, but this motility is little in



ruminants , because jejunum tightly coiled along the edge of mesentery around coiled ascending colon .

In dog ,the jejunal loops are large and little (6-8 loops), lie between stomach and pelvic inlet . It covers from both sides by the greater omentum.

In horse The jejunum is very long lies at the left dorsal part of the abdominal cavity mingled with the large coils of descending colon .

The great length of horse jejunum and mesojejunum give them wide free movement , so it's coils may reach the abdominal floor or pelvic cavity or even scrotum through the inguinal canal lead to hernia . sometimes cause torsion or intussusception lead to spasms or colic .

Dog. Internal organs. Ventral view. Abdominal wall reflected. Stomach full, greater omentum removed.

1. *hepar* – liver
2. *ventriculus (gaster)* – ventriculus (stomach)
3. *lien* – spleen
4. *duodenum* – duodenum
5. *jejunum* – jejunum
6. *mesojejunum* – mesojejunum
7. *vesica urinaria* – urinary bladder
8. *lig. medianum vesicae* – middle ligament of bladder
9. *omentum majus (insertio)* – greater omentum (insertion)



The ileum :

A short terminal part of small intestine suspended by mesoileum.



Ileum attached to cecum by the ileocecal fold , the end of this fold detect the jejunoileal junction .

In horse : the opening of the ileum surrounded by an elevation called the ileal papilla which contain venous plexus due to partial telescoping of ileum into cecum , this opening lies at the medial face of cecal base .

Ileal orifice of horse lie about 5cm. away of cecocolic opening which lie caudo- laterally ,while the ileal orifice lie medially on the lesser curvature of the cecum.

Relative position of stomach and intestine in abdominal cavity:

