Histology sheet # 14 .

\*we continue with the stomach … ☺\*

\*the stomach has dense irregular submucosa which is highly vascular & have nerve plexus which is called submucosa missense's nerve plexus that is close to muscularis externa .

\* missense's nerve plexus always closest to the muscularis externa.

***\*muscularis externa of the stomach :***

\*We have an extra layer which is the inner most oblique .

(so we have inner most oblique > middle circular > outer longitudinal)

\*instead of two we have three layers .

\*the inner most oblique of smooth muscle thickest in the fundus + body .

\*the middle circular thickest in the pyloric sphincter ,at the same time thy outer layer become poor develop .

\*the entire stomach is enclose with serosa bcuz the stomach is intraperatoneal structure .

***\*notes about the table that compare between histological part of stomach :***

1-parietal + chief cells numerous in fundus + body .

2-parietal found in the neck of gastric gland & isthmus .

3-chief cell in the basal part of gastric gland.

4-parietal + chief absent in cardiac region.

5-chief absent in pyloric region while parietal exist in few number (hard to find them) , so instead of them we have mucous neck cells as main cells .

6-main type of cell in the gland of cardiac region + antrum is mucous neck cells with few DNES (which is rare everywhere ).

7-gastric pit are shallow in the fundus + body .

((\*shallow mean less than one fifth of the mucosal thickness)).

8-but the gastric pit in cardiac they are deeper ( but do not exceed the half of mucosal thickness ) ,while it is the deepest in the pyloric region ( in the pyloric the depth of pit reach more than half of mucosa ).

\*\*in fundus + body there is branching in pit into straight gland ( pit does not lead straightly to gland ).

\*\*in pyloric + antrum we have branching & coiling of gland.

\*\*in cardiac there is no branching , just slight coiling.

\*\*mucous neck cell in gastric gland while in pit there is surface mucus cell & in basal part of pit we have stem cell with surface mucus cell.

\*\*in the gastric gland we mainly found mucus neck cells.

***\*\*intracellular canaliculai in parietal cell :***

system of canals , they appear inside the cell but in fact they are outside the cell .

\*all secretion of acid will be in duct which will empty outside.

\*\*PAS stain the carbohydrate positive so we expect surface mucus cell + surface neck cell to stain positively. (strength of stain more dark in surface of pits but in gland it light stain ).

\*mucus produce by mucus neck cell is less glycosylated so appear more lightly stain.

\*secretion of mucus neck cell are more watery , less viscous cuz more glycosylated.

***\*\*\*small intestine :-***

\*composed of ( duodenum / jejunum / ilium ).

 \*duodenum : its beginning & end is intraperatoneal while the remain is extra, so its cover with adventitia except the beginning & end cover with serosa .

\*jejunum + ilium : intraperetoneal cover with serosa .

\*\*\*there are some surface modification in the small intestine to increase the surface area .

**1-plica circularis** :

 permanent elevation of mucosa & submucosa ,found in all small intestine but numerous in the jejunum .

\*permanent mean it stay even if the tube is filled up while temporary ( like plica semilunaris in large intestine ) it disappear if it full .

**2-villi :-**

finger like projection of lamina propria & epithelium ,they much frequent & taller in duodenum .

**3-microvilli :-**

3la mostawa el absorptive cell , its evagination , finger like projection , these which called brush border .

**4-intestinal gland :-**

 they invagination like gastric gland but without pits (directly gland ).

***\*\*\*the cells in the small intestine :-***

\*we have mainly two type : enterocyte + goblet cell .

 **\*enterocyte :-**

\*tall columnar with basal oval nucleus , apical surface present brush border which is microvilli ,junctional complexes seen in the lateral aspect of plasma lemma .

**\***goblet cell increase in number distally .

\*lymphatic nodule cover with squamous like cell called m cell.

\*m cell is antigen presenting cell.

**\*intestinal gland :-**

They are invagination of surface epithelium into lamina propria ,

\*paneath cell secrete lysozyme to maintain intestinal flora , has the same properties of serous cell except it has large secretory granule eosinophil,

\*stem cell here in basal part while in stomach it's in basal part of pit .

**\*boomer glands :-**

Found in submucosa in duodenum.

Secret mucous rich in bicarbonate to neutralize what come from stomach.

\*they are branched tubuloalveolar gland of submucosa in duodenum .

\*secrete mucous rich in growth factor.

They are stimulated by parasympathetic.

\*\*plica circularis : structure that elevated in submucosa.

***\*\*\*ilium :-***

\*in submucosa we have many lymphatic nodule called (payers patches).

\*the lymphatic nodule may reach the surface .

\*when the nodule reach the surface they will cover by m cell .

\*\*large intestine don't have microvilli while small intestine have.

***NOTES :-***

*-PLZ REFER TO SLIDES ; MOST OF THEM THE DR JUST READ THEM .*

*-THE DR SAID THAT THE LABELING WILL BE IN THE LAB , JUST FOCUS HERE ON HOW TO DIFFERINTIATE EACH SECTION IS FROM WHER .*

*-I POLOGIZE FOR ANY MISTAKE OR ANY MISSED , DON'T HISTATE TO CONTACT ME IF YOU HAVE ANY QUESTION .*

*-DON'T FORGET TO FORGIVE ALWAYS AND BE THE ONLY WINNER AT THE END OF EACH RACE ;)*

*-FINALLY :p ,, BEST OF LUCK ☺*

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