APPLIED ANATOMY AND PHYSIOLOGY OF GIT SYSTEM (GASTROINSTESTINAL TRACT)

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CONTENT:-

- Introduction
- Applied anatomy and applied physiology

1.Esophagus

2.Stomach

3.Small instestine

4.Large instestine

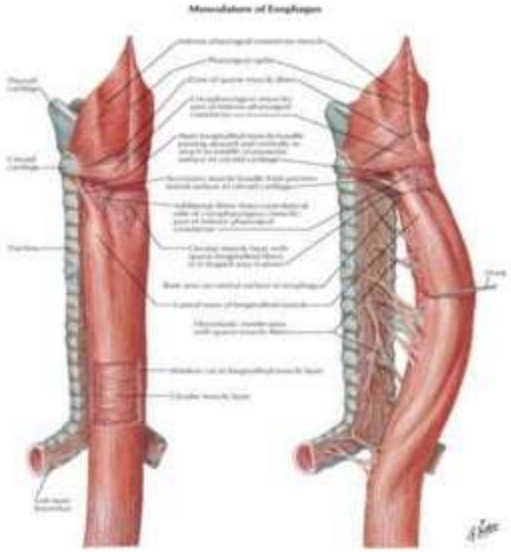
INTRODUCTION:-

- *gastrointestinal (GI) tract*, also known as the *alimentary canal*, commences at the buccal cavity of the mouth and terminates at the anus. It can be divided into an

- ***upper GI tract***
- mouth,
- pharynx,
- esophagus
- stomach)
- ***lower GI tract***
- small instines
- large intestines

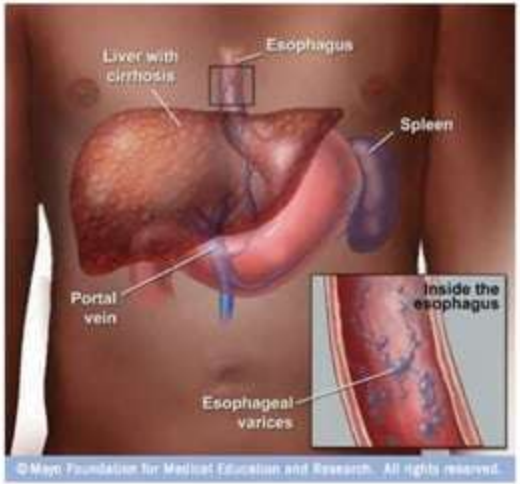
ESOPHAGUS

- Anatomy:-
- The esophagus is a 25-cm long muscular tube that connects the pharynx to the stomach·
- The esophagus extends from the lower border of the cricoid cartilage (at the level of the sixth cervical vertebra) to the cardiac orifice of the stomach at the side of the body of the 11th thoracic vertebra



APPLIED ANATOMY OF ESOPHAGUS

- **esophageal varices** are dilated sub-mucosal veins in the lower third of the esophagus.
- They are most often a consequence of portal hypertension.
- commonly due to cirrhosis patients with esophageal varices have a strong tendency to develop bleeding.
- Esophageal varices are diagnosed with endoscopy



Applied physiology of esophagus

- **Dysphasia**
- **Esophageal achalasia**

APPLIED PHYSIOLOGY

- **Dysphasia :-**

dysphagia means difficulty in swallowing.

causes :

1)Mechnical obstruction of esophagus due to tumor,stricture,diverticular hernia (out pouching of the wall).

2)Decreased movement of esophagus due to neurological disorder such as parkinsonism.

3)Muscular disorder leading to difficulty in swallowing during oral stage or esophageal stage.

ESOPHAGEAL ACHALASIA

- Esophageal achalasia is a neuromascular disease.
- Caracterized by accumulation of food substances in the esophagus.
- it is due to the failure of lower esophageal (cardiac)sphincter to relax during swallowing.the accumulated food substance cause dilatation of esophagus.

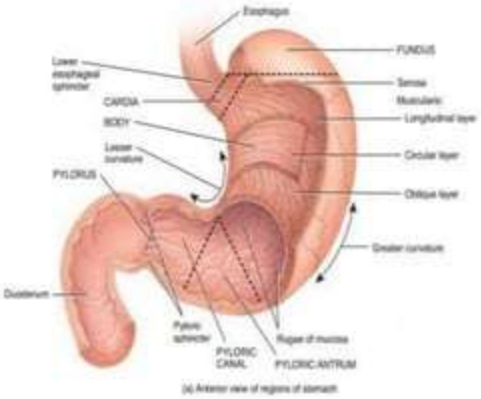
The feature of disease are :

- Dysphagia
- Chest pain
- Weight loss
- cough

STOMACH:-

- The stomach is hollow organ situated just below the diaphragm on the left side in the abdominal cavity.
  - Shape:- 'J' shaped
  - Volume :- 50 ml
  - Location:- 10 Thorasic and 3 lumber
- Parts of stomach:-

1. Cardiac region
2. Fundus
3. Body
4. pyloric



APPLIED ANATOMY OF STOMACH

DISPLACEMENT OF STOMACH

- Pancreatic and pseudo cyst and abcess in the omentam bursa can may push the stomach forword/ anteriorly this displacement is usually visible in lateral radiographic/CT.
- The posterior wall of stomach may adhere to the part of the posterior wall of the omentum bursa that covers the pancreas.this occurs due to inflammation of pancrease and it is very close to (posterior wall of stomach)pancrese

CANCER OF STOMACH

- Stomach cancer, also known as **gastric cancer**, is cancer developing from the lining of the stomach.
- Because the lymphatic vessels of the mucous membrane and submucosa of the stomach are in contunity,it is possible for cancer cells travel to different parts of the stomach

GASTRIC PAIN

- The sensation of pain in the stomach is caused by the stretching or spasmodic contraction of the smooth muscle in its walls and is referred to the epiastrium.
- It is believed that the pain transmitting fibres leave the stomach in company with the sympathetic nerve.
- They pass through the celiac ganglia and reach the spinal cord via the greater splanchnic nerves.

APPLIED PHYSIOLOGY OF STOMACH

GASTRITIS

- Inflammation of gastric mucous membrane is called gastritis.

  It may be acute or chronic
- **Acute gastritis** is characterized by inflammation of superficial layers of mucous membrane and infiltration with leukocytes,mostly neutrophills.
- **chronic gastritis** involves inflammation of even the deeper layers and infiltration with more lymphocytes.it results in the atrophy of the gastric mucosa with loss of chief cells and parietal cells of gland.therefore yhe seceration of gastric juice decreases.

PEPTIC ULCER

- Ulcer means the erosion of the surface of any organ
- due to shedding or sloughing of inflamed necrotic tissue that lines the organ.
- peptic ulcer means an ulcer in the wall of stomach
- caused by action of gastric juice. If peptic ulcer is found in stomach,it called gastric ulcer

GASTRIC ATROPHY

- gastric atrophy is the condition in which the muscles of the stomach shrink and become weak.
- The gastric glands also shrink resulting in the deficiency of gastric juice.
- Cause by:
- Loss of gastric gland

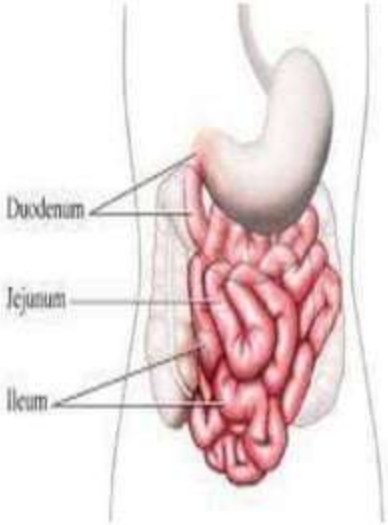
ANATOMY OF SMALL INSTESTINE

- Small instestine is the part of gastroinstestinal tract,
- extending beetween the pyloric sphincter of stomach and ileocecal vale, which opens into large instestine.it is called small instestine
- Length:-6 meter
- Type:-

1.Duodenum

2.Jejunam

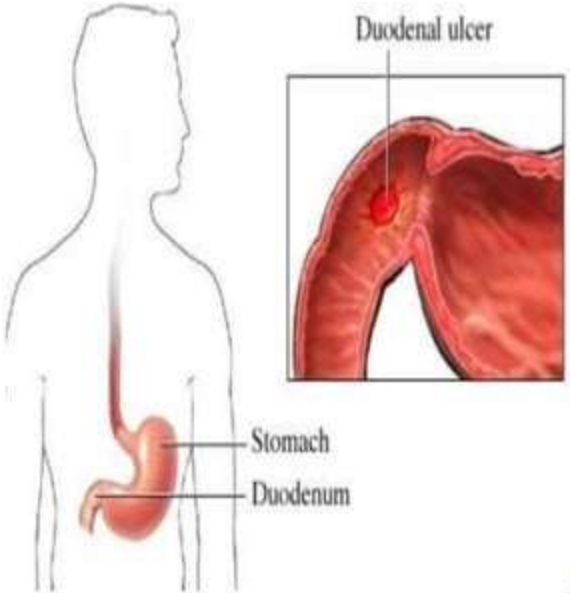
3.ileum



APPLIED ANATOMY OF SMALL INSTESTINE

DUODENAL ULCER

- A duodenal ulcer is a type of peptic ulcer that occurs in the duodenum, the beginning of the small intestine.
- As the stomach empties its contents into the duodenum,the acid chyme is squirted the against the anterolateral wall of the first part of the duodenum.



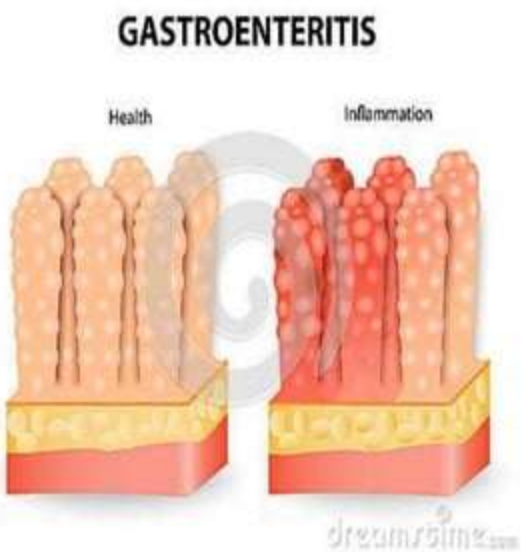
APPLIED PHYSIOLOGY OF SMALL INSTESTINE

MALABSORPTION

- Malabsorption is the failure to absorb nutrient such as protein,carbohydrates,fat and vitamins.
- Malabsorption affects growth and development of the body.

CROHNS DISEASES(ENTERITIS)

- Enteritis is an inflammatory bowel disease.
- characterized by inflamation of small instestine.
- Usually it affects the lower part of small instestine and the ileum.
- the inflamation causes malabsorption and diarrehea.

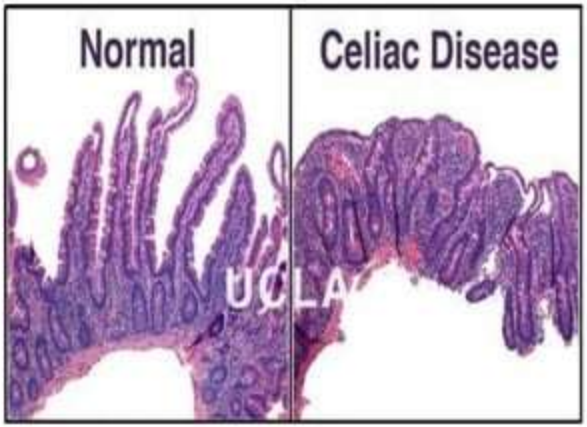


STEATORRHEA

- Steatorrhea is the presence of excess fat in feces.
- Stools may also float due to excess gas, have an oily appearance and can be especially foul-smelling.
- Steathorrhea is the condition caused by deficiency of pancreatic lipase,resulting in malabsorption of fat.

CELIAC DISEASE

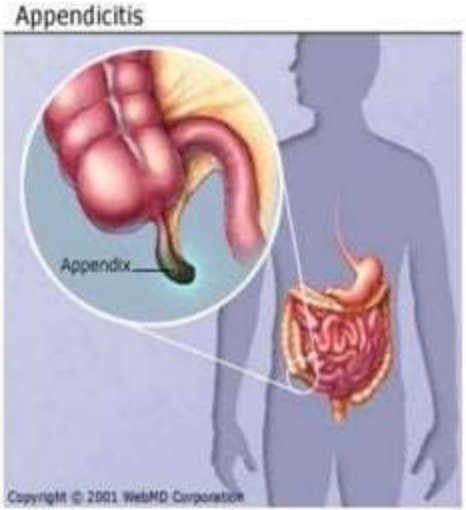
- Celiac disease is an autoimmune disorder.
- characterized by the damage of mucosa and atrophy of villi in small instestine,resulting in impaired digestion and absorption
- It is also known as gluten sensitive enteropathy



APPLIED **anatomy of large instestine**

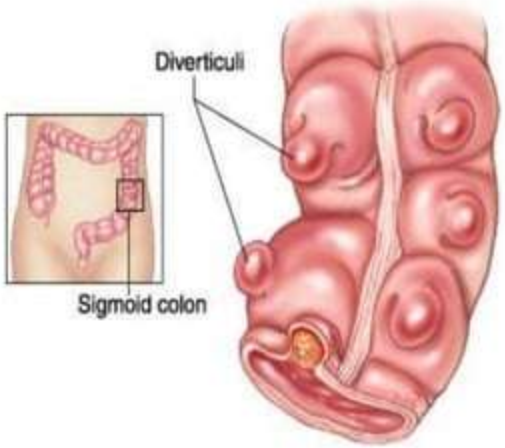
PAIN OF APPENDICITIS

- Visceralpain in the appendix is produced by distention of its lumen or spasm of its muscle.
- The afferent pain fibers enters the spinal cord at he level of the tenth thoracic segment and a vague referred pain is felt in the region of the umbilicus.
- Later,the pain shifts to where the inflammed appendix irritates the parital peritoneum.



DIVERTICULOSIS

- also known as "**diverticular disease**"
- It is the condition of having diverticula in the colon, which are outpocketings of the colonic mucosa and submucosa through weaknesses of muscle layers in the colon wall.
- These are more common in the sigmoid colon, which is a common place for increased pressure.
- This is uncommon before the age of 40, and increases in incidence after that age



APPLIED PHYSIOLOGY OF LARGE INSTESTINE

DIARRHEA

- Diarrhea is the frequent and profuse discharge of instestinal contents in loose and fluid form.
- It occurs due to the increased movement of instestine

Cause :-

- Dietary abuse
- Infection
- Instestinal disease

CONSTIPATION

- Failure of voiding of feces,which produces discomfort is known as constipation.
- It is due to the lack of movement necessary for defection.
- Due to the absence of mass movement in colon
- Feces remain in the large instestine for a long time.
- Resulting in absorption of fluid ,so the feces beome hard and fry.

APPENDICITIS

- Inflammation of appendix is known as appendicitis.
- Appendix does not have any function in human being.
- But it can create major problem when diseased.
- Appendicitis can develop at any age.
- It is very common between 10 and 30 years of age.

THANK YOU