16/MHS06/053

COURSE TITLE: HISTOPATHOLOGY TECHNIQUES AND MUSEUM

COURSE CODE: MLS 408

ASSIGNMENT TITLE: HISTOPATHOLOGY TECHNIQUES.

QUESTION

In a tabular form only, compare and contrast sections of the gastrointestinal tract.

ANSWER

CONTRASTS.

Below tabulated are the differences between the various layers of the gastrointestinal tract that contain specialized structures, differentiating them from the general basic/ common structure tabulated in the table after.

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| --- | --- | --- | --- | --- | --- |
| LAYERS/SECTIONS | | SUPERFICIAL LAYER | MUSCULARIS EXTERNA | SUBMUCOSA | MUCOSA/EPITHELIUM |
| ORAL CAVITY | | Adventitia due to the fact that it is not in a cavity | Tongue possesses  Skeletal muscles | No specialized structure | Non keratinized stratified squamous epithelium covering soft palate, lips and floor of the mouth  Keratinized stratified squamous epithelium in gingiva and hard palate. |
| ESOPHAGUS | UPPER 1/3 | Adventitia due to the fact that it is not in a cavity | Skeletal Muscle( circular and longitudinal layers) | Thrown into large fold, esophageal glands | Non-Keratinized stratified squamous epithelium |
| MIDDLE 1/3 | Smooth and skeletal muscle |
| LOWER 1/3 | Smooth muscle |
| STOMACH | | Serosa containing mesothelium and a thin layer of underlying connective tissue. | Outer longitudinal layer  Middle circular layer  Inner oblique layer | No specialized structure. | Lined with simple columnar epithelium and it is thrown into evolutions known as gastric folds/pits.  Presence of rugae  Presence of gastric glands |
| SMALL INTESTINE | DUODENUM | Serosa/Visceral peritoneum | No specialized structure | Presence of circular folds called plica circulare which enters the mucosa.  Presence of Brunner’s glands (Intestinal glands) | Simple columnar epithelium, with the presence of intestinal villi and surface modification having microvilli.  The mucosa between the villi is dotted with crevices that each lead to a tubular intestinal gland called crypt of Lieberkühn.  Few goblet cells |
| JEJUNM | No specialized structure | No specialized structure | Simple columnar epithelium  Presence of goblet cells |
| ILEUM | No specialized structure | Presence of payers patches with prominent plicaes. | Simple columnar epithelium with villi that are very scanty  Few goblet cells. |
| LARGE INTESTINE | | Serosa/Visceral peritoneum | Outer longitudinal layer f smooth muscle forms three flattened strands called taenia coli. | No specialized structure | Simple columnar epithelium with thin brush border and numerous goblet cells.  Crypts of Lieberkühn are present and are usually longer and straighter than the ones in the small intestine |
| ANAL CANAL | | Adventitia due to the fact that it is not in a cavity | Presence of striated muscle cells(skeletal muscle). | No specialized structure | Non keratinized stratified squamous epithelium |

COMPARISM

These structures are common to all the sections of the gastrointestinal tract, and are complimented with the specialized structures in some sections of the tract that are tabulated above.

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| --- | --- | --- | --- | --- |
| LAYERS/SECTION | SUPERFICIAL LAYER | MUSCULARIS EXTERNA | SUBMUCOSA | MUCOSA |
| ORAL CAVITY | Adventitia, a fibrous sheath of collagen fibres attaches to the digestive tract to adjacent structures. Comprised of loosely arranged fibroblasts and collagen, with the vessels and nerves passing through it. | Dominated by smooth muscle fibers, surrounding the submucosa. The fibres are arranged in inner circular and outer longitudinal layers. | A layer of dense, irregular connective tissues, containing large blood vessels and lymphatics and various nerve plexuses that innervates and supply blood to the mucosa. | A mucous membrane basically consisting of loose connective tissues, covered by an epithelium and moistened by glandular secretions. It consists of Lamina propria which is an underlying areolar tissue, muscularis mucosa, and plicae(folds). |
| ESOPHAGUS |
| STOMACH | Serosa; a serous membrane that covers the muscularis externa along most regions of the GIT within the peritoneal cavity. It is rich in blood and lymph vessels |
| SMALL INTESTINE |
| LARGE INTESTINE |
| ANAL CANAL | Adventitia, a fibrous sheath of collagen fibres attaches to the digestive tract to adjacent structures. Comprised of loosely arranged fibroblasts and collagen, with the vessels and nerves passing through it. |