Histology of The Digestive System Sirculatory System, and Lymphoid Organ

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Penerbit Widina

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FOREWORD

We offer all our worship and praise to the presence of Allah SWT, because it is with HIS grace and guidance that this reference manual can be completed.

This manual books is intended for students of the Faculty of Dentistry who will participate in the parts of Histology. It is also a useful, ready reference for both undergraduate students of microscopic anatomy and others in structural biosciences. This book has been adapted to the 2020 curriculum, which states that histology is part of basic medical science and is then related to anatomy and physiology. Therefore, the practical material is adapted to the tutorial material.

Study materials can be taken from textbooks, textbooks, and lecture materials.

Study from now on; don't postpone work/study diligently so you can pass the exam successfully.

Bandung, December 2024

Dr. Winny Yohana

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CHAPTER 1

DIGESTIVE SYSTEM

For metabolic purposes, food must be entered from outside the body. Therefore, our body is equipped with a digestive tract. The digestive system, or alimentary canal, consists of the digestive tract- oral cavity, esophagus, stomach, small and large intestines, rectum, and anus. While its associated glands-salivary glands, liver, gallbladder, and pancreas. It obtains the molecules necessary for the body's maintenance, growth, and energy needs from ingested food. Large molecules such as carbohydrates complex, fats, proteins, and nucleic acids are broken down into small molecules easily absorbed through the lining of the digestive tract, mostly in the small intestine. Water, vitamins, and minerals are also absorbed from ingested food. The first step in the complex process known as digestion occurs in the mouth, where food is moistened by saliva and ground by the teeth into smaller pieces.

CHAPTER 2

CIRCULATION SYSTEM

The circulatory system consists of blood vessels and lymph systems. The vascular system consists of the heart as a blood pump throughout the body, a series of vessels such as arteries, capillaries, and veins. This system is useful for distributing nutritional materials, oxygen, and hormones to all body parts and transporting cellular metabolic waste. The heart will pump blood from the body into the right heart and pump to the lungs. The left heart receives blood from the lungs and circulates it throughout the body. All the blood vessels carry blood to and from the lungs from the pulmonary circulation. All blood vessels that drain blood to and collect blood from other body parts form systemic circulation. In both circulations, the arteries branch out in large numbers with increasingly smaller diameters until they reach the capillaries. Almost all exchange of substances between blood and other tissues occurs in capillaries. Blood from the capillaries returns to the heart through the veins.

The lymph vessel system consists of various sizes of lymph capillaries and lymph vessels, which will drain lymph fluid from the tissue space into the large vein bloodstream in the neck. For smooth blood flow from

CHAPTER 3

LYMPHOID ORGANS

Lymphoid tissue has two main components: reticular tissue, lymphocytes, and reticular tissue. The lymphoid tissue in the body does not have clear boundaries with the surrounding tissue; it is called diffuse lymphoid tissue; this is different from the denser form called lymphoceles, where the cell elements are grouped tightly. The lymphoid organs are classified into two categories: primary and secondary.

1. Primary lymphoid organs are responsible for the development and maturation of lymphocytes into mature, immunocompetent cells.
2. Secondary lymphoid organs are responsible for the proper environment in which immunocompetent cells can react with each other and with antigens and other cells to mount an immunological challenge against antigens or pathogens.

The fetal liver, prenatal and postnatal bone marrow, and thymus constitute the primary lymphoid organs in humans. The secondary lymphoid organs are the lymphoid nodes, spleen, and mucosa-associated lymphoid tissues.

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This book is intended for students of the Faculty of Dentistry who will study Histology. This book has been adapted to the 2020 curriculum, which states that histology is part of basic medical science related to anatomy and physiology. Therefore, the material is adapted to their subject. Learning materials are taken from textbooks, special histology picture books, and related lecture materials. This topic will discuss the digestive, circulatory, blood, and lymphoid organs. In the digestive system, we will discuss the digestive tract, starting from the oral cavity, tooth formation and tooth structure, salivary glands, esophagus, stomach, duodenum, jejunum and ileum, colon, rectum and anal canal. Including organs that play a role in digestion, such as the liver, gallbladder, and pancreas. In distributing food, a circulation and blood system is needed so that the body can absorb food essence. The circulatory system consists of large, medium, and small arteries, arterioles, and capillaries, then returns to the heart through small, medium, and large veins. The lymphoid organ plays an important role in forming the body's immunity. Within this system are various organs whose job is to produce, store, and distribute white blood cells to various body parts to fight foreign objects. The organs that play a role are the lymph nodes, spleen, thymus, and palatine tonsils.

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