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Department: Anatomy

Matric No: 18/MHS03/009

Course Code: ANA 202

Course Title: Gross Anatomy of Thorax and Abdomen

Assignment

1. You will be provided with a video, watch it and use it to describe the heart and its functions.
2. Write on five different congenital anomalies of the heart.

1. Describe the heart and its functions

The heart is a muscle about the size of a fist; it lies behind or to the left of the breast bone also known as sternum. The purpose of the heart is to pump blood through the vessels, arteries, and veins to all part of the body. The inner side of the heart is divided into four chambers. The top two chambers are called the aorta and are collection chambers for the blood. The bottom two chambers are called ventricles and receive the blood from the atria and pump it to the lungs and the body. The chambers are separated by valve, which control the direction of blood flow. There are four valves; tricuspid, pulmonary, mitral and aortic valve.

Circulation begins from the right side of the heart where blood from the body comes to the right atrium. The blood passes to the right ventricle where it is pumped to the lungs to receive oxygen, once it receives oxygen it flows to the left atrium and then to the left ventricles where it is pumped to the aorta and the rest of the body, On the right side of the heart the tricuspid valve separates the right atrium and left ventricle allowing blood to enter the ventricle but not flow backwards the atrium.

Blood flows through the pulmonic valve to go to the lungs. On the left side of the heart, the mitral valve separates the left atrium and the left ventricles. Blood flows from the left ventricles to the aorta through the aortic valve and to the rest of the body.

Arteries carry blood with oxygen and other nutrients throughout the body. Veins take blood to the heart which pumps it to the lungs to be oxygenated. The heart arteries (coronary arteries) provide oxygen and nutrient to the

heart muscles. The right coronary artery supply blood to the bottom and back to the heart. The left coronary artery splits into two vessels. One branch supplies blood to the front of the heart, the other branch delivers blood to the left side of the heart.

An electric system transmits signals throughout the heart to control its pumping. The electrical signal starts in the sinoatrial node or S.A Node, which is located in the upper portion of the right atrium and is known as the natural peace maker of the heart. The electrical signal passes down to the lower chambers of the heart via the atrioventricular or A.V Node, which controls the signals so the atrial contract before the ventricles.

In the ventricles, pathway carries the signals throughout the muscles so they can contract at the same time to pump blood to the lungs and body.

1. Congenital anomalies of the heart

a. Complete Atrioventricular Canal Defect (CAVC):

This is the most serious septal defect. It's when you have a hole in your heart that affects all four chambers.

A CAVC prevents oxygen-rich blood from going to the right places in your body. Your doctor can repair it with patches. But some people need more than one surgery to treat it.

b. Pulmonary valve stenosis**:** This is the most common valve defect in newborns. Babies with severe cases often have strained right ventricles. Your doctor can usually treat it with a catheter procedure. She will use a catheter, or thin tube, with a balloon on the end to inflate and stretch open the strained valve.

c. Atresia: This happens when your valve isn't formed right nor has no opening to let your blood pass through. It causes more complicated heart problems.

d. Ebstein's anomaly: This is a defect in another heart valve, the tricuspid valve, which may keep it from closing tightly. Babies who have Ebstein's also often have an atrial septal defect (ASD).

e. Single ventricle defects: Babies are sometimes born with a small lower chamber of the heart, or with one valve missing. Different types of single ventricle defects include:

-Hypoplastic left heart syndrome: Your baby has an undeveloped aorta and lower left chamber, or ventricle.

-Pulmonary atresia/intact ventricular septum: Your baby has no pulmonary valve, which controls blood flow from the heart to the lungs.

-Tricuspid atresia: Your baby has no tricuspid valve, which should be between the upper and lower chambers of the right side of his heart.