

Unit 13:

Principles of cardiovascular system and the heart

Introduction (Cardiovascular system) and Chapter 1 (Thorax)

GENERAL OBJECTIVES:

- Understand the organization of the heart as a two-steps pump
- Structure of the heart (walls and chambers, cardiac skeleton)
- Functioning of cardiac blood flow and role/function of valves
- Contractile and conductive musculature
- Projection/auscultation of heart valves
- Nutritive and functional circulation in the heart
- Systemic vs. pulmonary circulation

SPECIFIC OBJECTIVES:

Pericardium

Fibrous

Serous: Parietal Layer

Visceral Layer (Epicardium)

Vessels & Nerves of Pericardium

Pericardial Cavity

Sinuses (Oblique & Transverse)

Heart

Position. Borders. Apex & Base

Surfaces (Sternocostal & Diaphragmatic)

Chambers

Right Atrium

Right Auricle

Sulcus & Crista Terminalis, Musculi Pectinati

Sinus Venarum, Openings of Venae Cavae

Opening of Coronary Sinus

Right Atrioventricular Orifice

Interatrial Septum: Fossa Ovalis & Limbus

Right Ventricle

Right Atrioventricular (Tricuspid) Valve

Chordae Tendinae, (3) Papillary Muscles

Trabeculae Carneae

Septomarginal Trabecula (Moderator Band)

Conus Arteriosus (Infundibulum)

Pulmonary Orifice & Valve

Left Atrium

Left Atrioventricular Orifice

Orifices of (4) Pulmonary Veins

Left Ventricle

Left Atrioventricular (Mitral) Valve

Chordae Tendinae, (2) Papillary Muscles

Trabeculae Carneae

Aortic Vestibule

Aortic Orifice & Valve

Interventricular Septum (Muscular & Membranous Parts)

Structure

Cardiac "Skeleton" (Fibrous Ring)

Musculature (layers) Atrial, Ventricular

Impulse-Conducting System:

S.A. Node, A.V. Node

A.V. Bundle, Right & Left Bundle Branches

Nerves (Sympathetic, Parasympathetic)

Arteries

Right & Left Coronary Arteries

Branches & Variation of Patterns, Distribution

Veins Coronary Sinus & Tributaries. Anterior Cardiac Veins, Venae Cordis Minimae

Pulmonary Circulation

Pulmonary Trunk, Right & Left Pulmonary Arteries

Pulmonary Veins

Systemic Circulation

Arteries: *Aorta (Ascending, Arch, Thoracic)*

Course/Beginning & End, Key Relations, Distribution

“Special” Branches:

Ascending -> *Right & Left Coronary Arteries*

Arch -> *Brachiocephalic Trunk, L Common Carotid, L. Subclavian*

Thoracic -> Parietal Branches: Post. Intercostal Arteries

-> Visceral Branches: (Bronchial, Oesophageal, Pericardial)