

# Aorta

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## Introduction-

- ▶ The aorta is the largest artery in the body.
- ▶ Diameter- an inch wide in diameter.
- ▶ It receives the cardiac output from the left ventricle and supplies the body with oxygenated blood via the

## Parts of aorta-

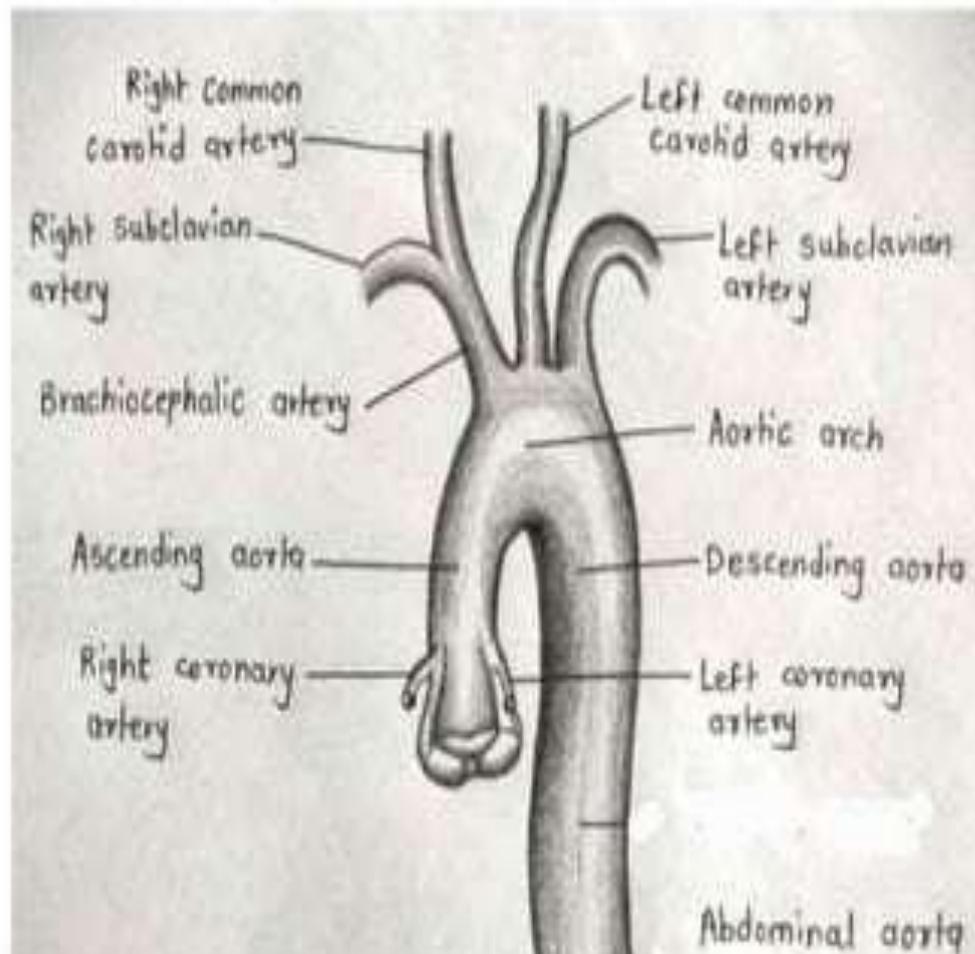
- ▶ The aorta can be divided into four sections:
- ▶ **Ascending aorta,**
- ▶ **Aortic arch,**
- ▶ **Thoracic (descending) aorta**
- ▶ **Abdominal aorta.**

It terminates at the level of L4 by bifurcating into the left and right common iliac arteries

## Ascending Aorta -

- ▶ The ascending aorta arises from the **aortic orifice** from the left ventricle.
- ▶ Then it goes upward to become the aortic arch.
- ▶ Length- It is 2 inches long length
- ▶ travels with the pulmonary trunk in the pericardial sheath.
- ▶ **Branches -**
- ▶ The left and right aortic sinuses of the aortic valve give rise to the **left and right coronary arteries** that supply the myocardium.

## Branches of Arch of aorta -



## Arch of aorta -

- ▶ The aortic arch is a continuation of the ascending aorta
- ▶ begins at the level of the sternal angle
- ▶ It arches superiorly, posteriorly and to the left before moving inferiorly.
- ▶ The aortic arch ends at the level of the T4 vertebra. The arch is connected to the pulmonary trunk by the **ligamentum arteriosus** (remnant of the fetal ductus

## Branches-

- ▶ There are 3 major branches arising from the aortic arch. Proximal to distal or from left to the right-

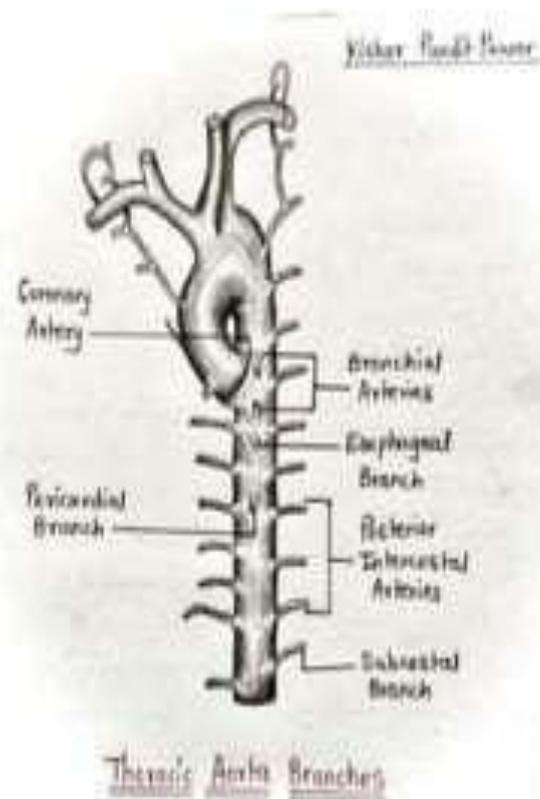
**1) Brachiocephalic trunk:** ascends laterally to split into the right common carotid and right subclavian arteries. These arteries supply the right side of the head and neck, and the right upper limb.

**2) Left common carotid artery:** Supplies the left side of the head and neck.

## Descending thoracic aorta-

- ▶ The descending thoracic aorta starts from the level of T4 vertebra and ends at the level of T12 vertebra.
- ▶ It is continuation of arch of aorta. it initially begins to the left of the vertebral column but travels in the midline as it descends. It leaves the thorax via the **aortic hiatus** in the diaphragm, at level of T12 vertebra and continue as the abdominal aorta.

## Branches of Thoracic Aorta -



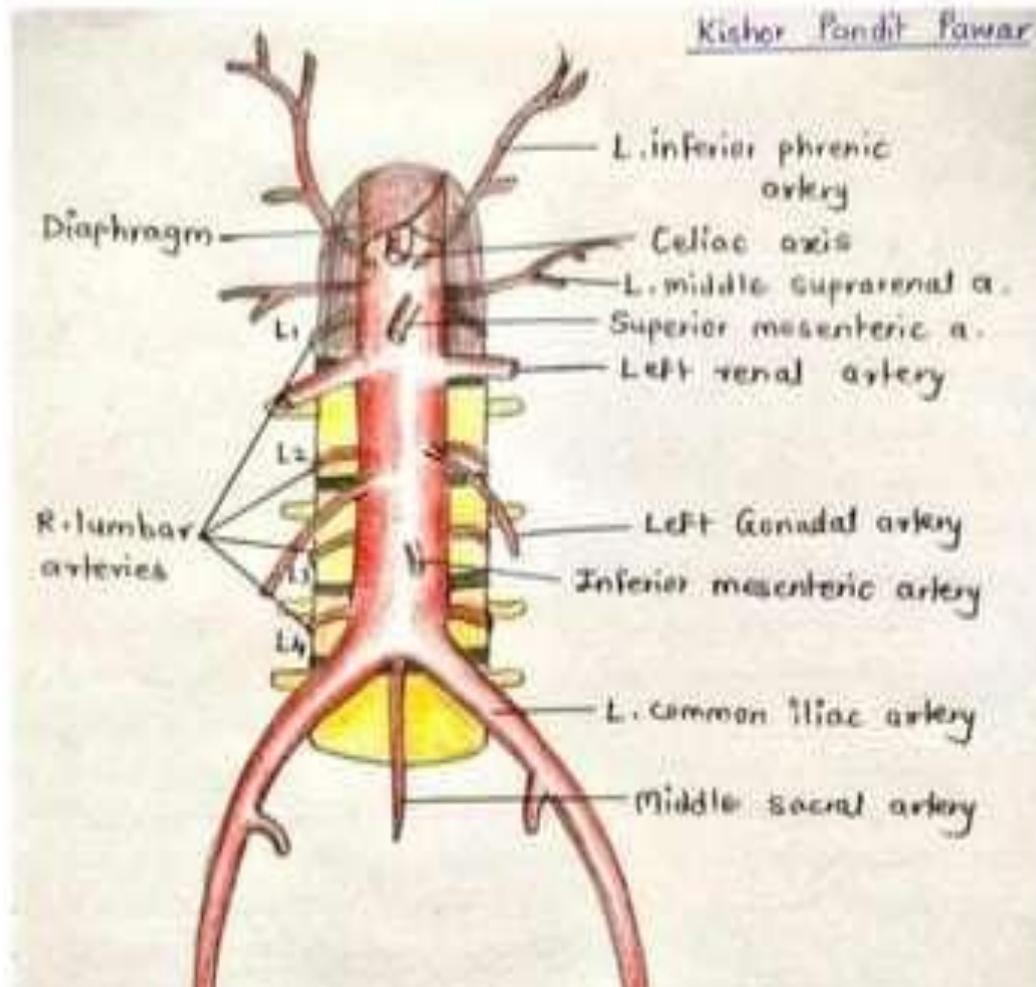
## Branches

- ▶ The 9 pairs of **posterior intercostal arteries** - supply the 3<sup>rd</sup> to 11<sup>th</sup> intercostal spaces
- ▶ **Left bronchial artery** (The right branches off usually from the third posterior intercostal artery )
- **Oesophageal arteries:** Unpaired visceral branches arising anteriorly to supply the oesophagus.
- **Pericardial arteries:** Small unpaired arteries that arise anteriorly to supply the dorsal portion of the pericardium.
- **Superior phrenic arteries:** Paired parietal branches that supply the superior portion of the diaphragm.
- ▶ **The subcostal arteries** supply the abdominal wall muscles.

## Abdominal aorta -

- ▶ At the level of the T12 vertebra the thoracic aorta passes from aortic hiatus of diaphragm and continue as the Abdominal aorta.
- ▶ It is approximately 13cm long
- ▶ Ends at the level of the L4 vertebra. At this level, the aorta terminates by bifurcating into the **right and left common iliac arteries** that supply the lower body.

## Branches of abdominal aorta-



## Branches of abdominal aorta-

► Branches can be classified as ventral, lateral, dorsal and terminal branches.

1. Ventral branches- 1. celiac trunk - supply to foregut

2. Superior mesenteric artery- supply to midgut

3. Inferior mesenteric artery - supply to hindgut

## Lateral branches-

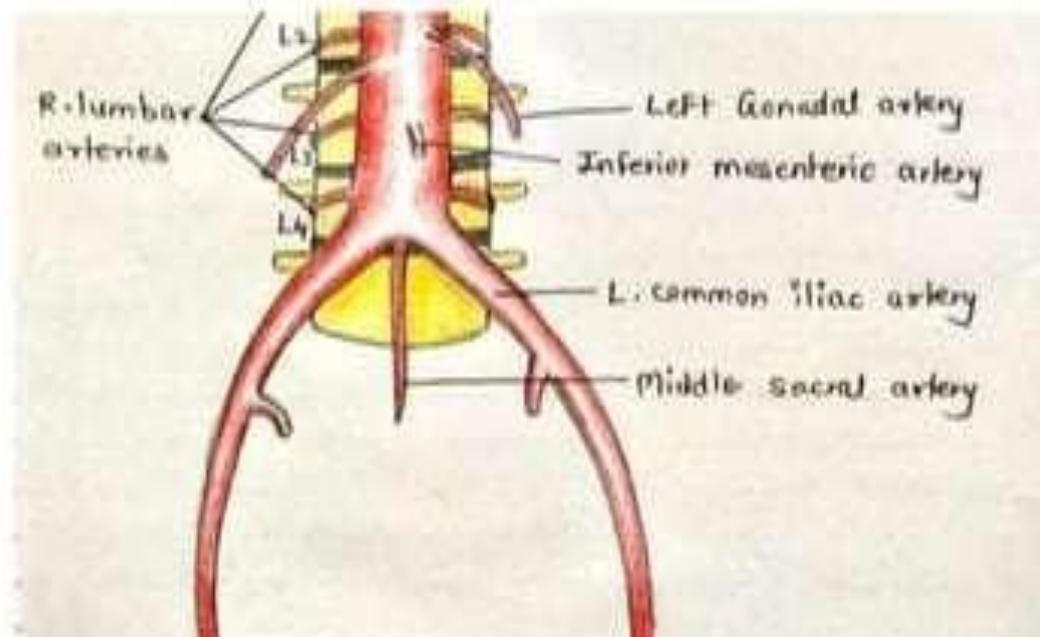
1. Inferior phrenic - diaphragm
2. Middle suprarenal – suprarenal gland
3. Renal arteries – kidneys
4. Gonadal arteries - testicular/ ovarian arteries

## Dorsal branches -

- ▶ 4 lumbar pairs
- ▶ 1 median sacral artery - unpaired

## Terminal branches-

- ▶ Right and left common iliac arteries - terminal branches of aorta at the level of L4 vertebra.



## Clinical anatomy-

- ▶ Atherosclerosis
- ▶ Aortic aneurism

# Thank you!!!

Specially thanks to Dr Kishor Pawar for diagrams of aorta.