

ATHEROSCLEROSIS (PATHOLOGY)

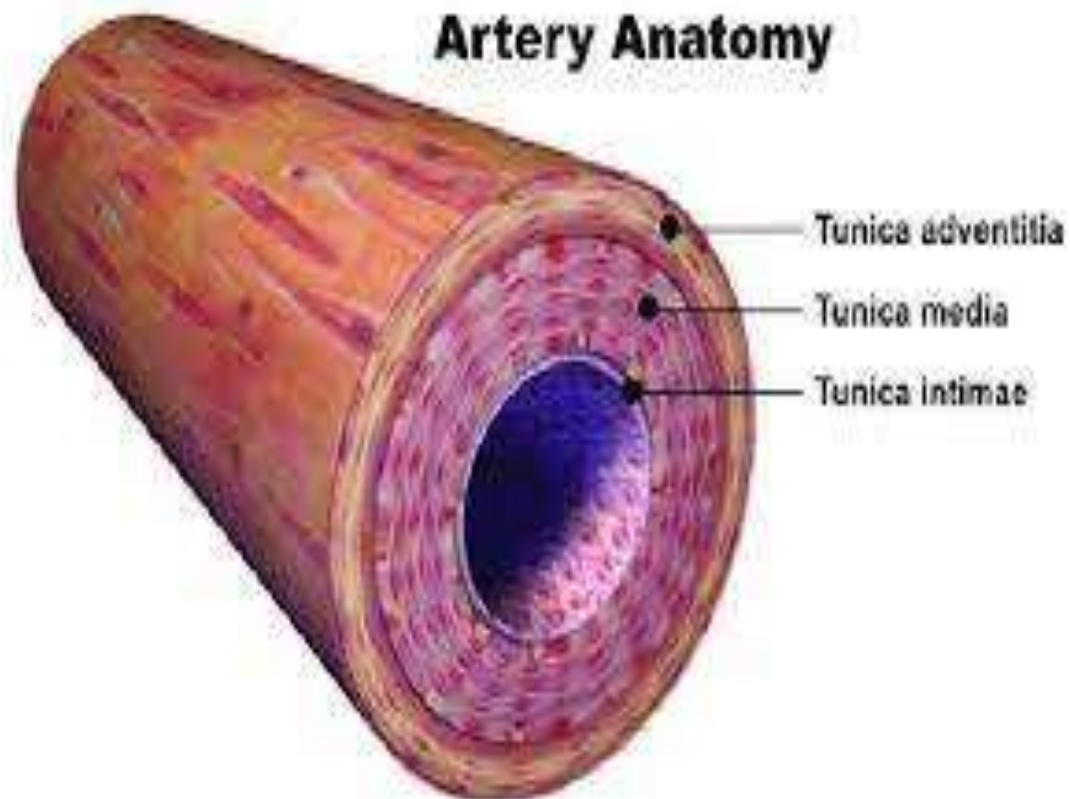
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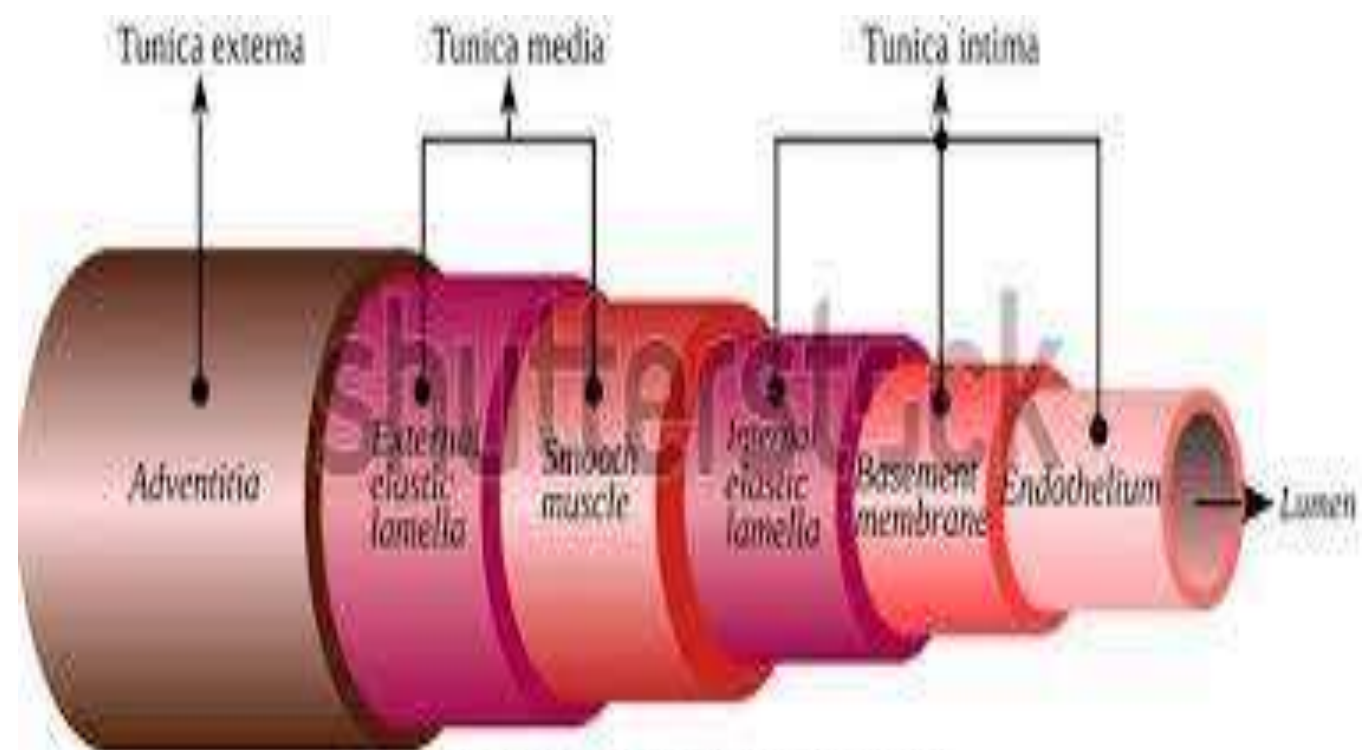
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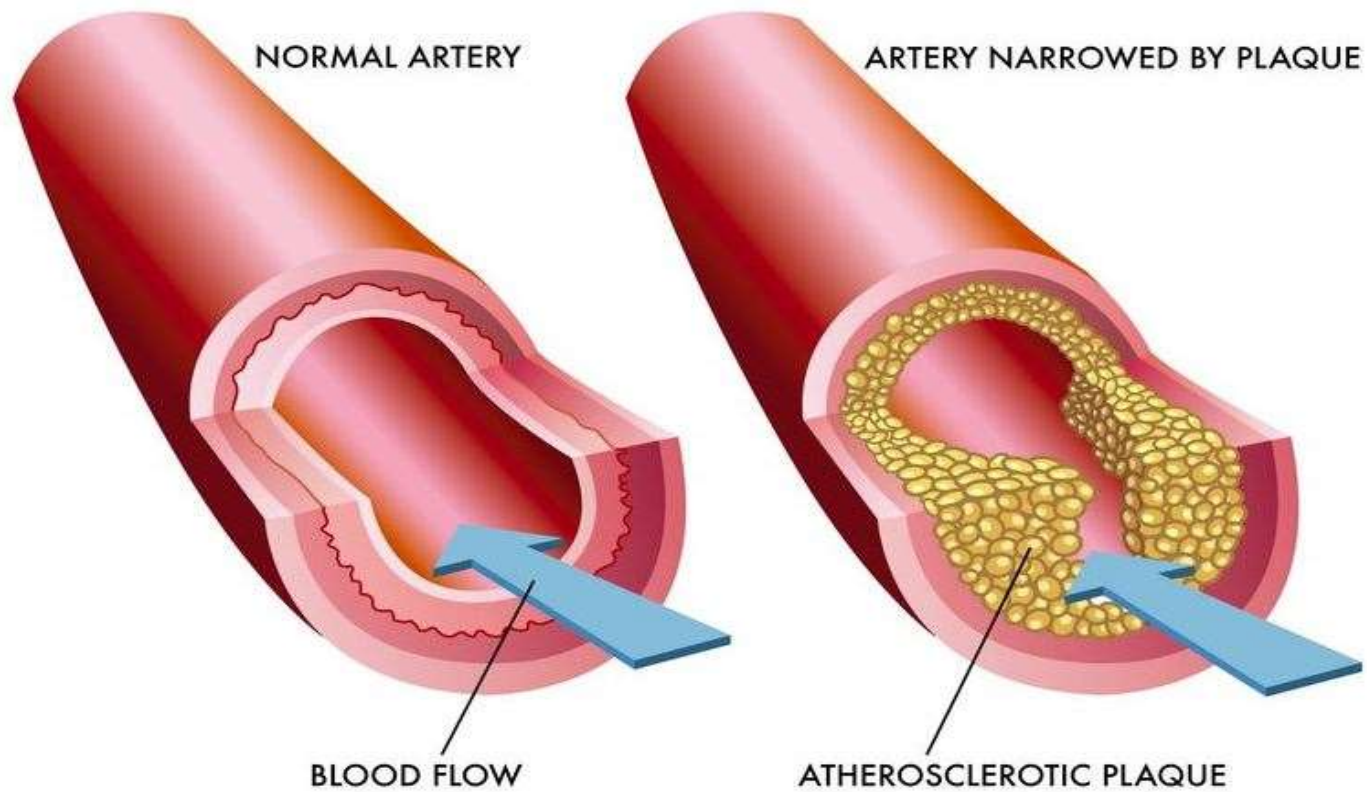
- Abnormal accumulation of lipid or fatty substance and fibrous tissue in the lining of arterial blood vessel walls.
- These substance block and narrow the coronary vessel in a way that reduce blood flow to the myocardium.

Artery Anatomy





ATHEROSCLEROSIS



Risk factors

- Modifiable risk factors

1. Diet

2. Diabetes mellitus

3. Obesity

4. Hypertension

5. Cigarette Smoking

6. Constant Stress

Non modifiable

1. Age- most common in older age
2. Gender- more in men than women
3. Genetic abnormalities

Morphology

- It described in relation to sequenced evolution of atheroma.

1. Fatty streaks and dots

Fatty streaks and dots on intima may be the precursor lesions of atherosclerosis plaques. They are especially prominent in aorta and major arteries.

Fatty streaks and dots

- **General appearance**
 - ✓ The lesions may appear flat or slightly elevated
 - ✓ Small, multiple dots about 1mm size
- **Microscopic Examination**
 - ✓ Fatty streaks lying under endothelium are composed of closely packed foam cells, lipid containing elongated smooth muscle cells and few lymphoid cells.

2. Gelatinous lesions

They are round oval circumscribed grey elevations about 1cm in diameter

- **Microscopic Examinations**

Gelatinous foci are having increased ground substance in the intima with thinned overlying endothelium.

3. Atheromatous plaques

A fully developed atherosclerotic lesion is called **atheromatous plaque**, also called **fibrous plaque**, **fibrofatty plaque** or **atheroma**.

- most common and severely affected is abdominal aorta
- smaller lesions may be seen on descending thoracic aorta and aortic arch

Atheromatopus plaques

- **General appearance**

- ✓ White to yellowish –white lesions
- ✓ Varying in diameter from 1-2 cm and raised on surface by a few millimeters to centimeter in thickness.

Microscopic examination

- ✓ Superficial luminous part of fibrous cap is covered by endothelium and is composed of smooth muscle cells, dense connective tissue

- ✓ Cellular area under the fibrous cap is comprised by a mixture of macrophages, foam cells, lymphocytes and smooth muscle cells which may contain lipid.
- ✓ The deeper central soft core consists of extracellular lipid material, fibrin, necrotic debris.

4. Complicated plaques

- ✓ Calcification – occur most commonly in advanced atheromatous plaques especially in aorta and coronaries.
- ✓ Ulceration
- ✓ Thrombosis
- ✓ Haemorrhage
- ✓ Aneurysm formation

- summary