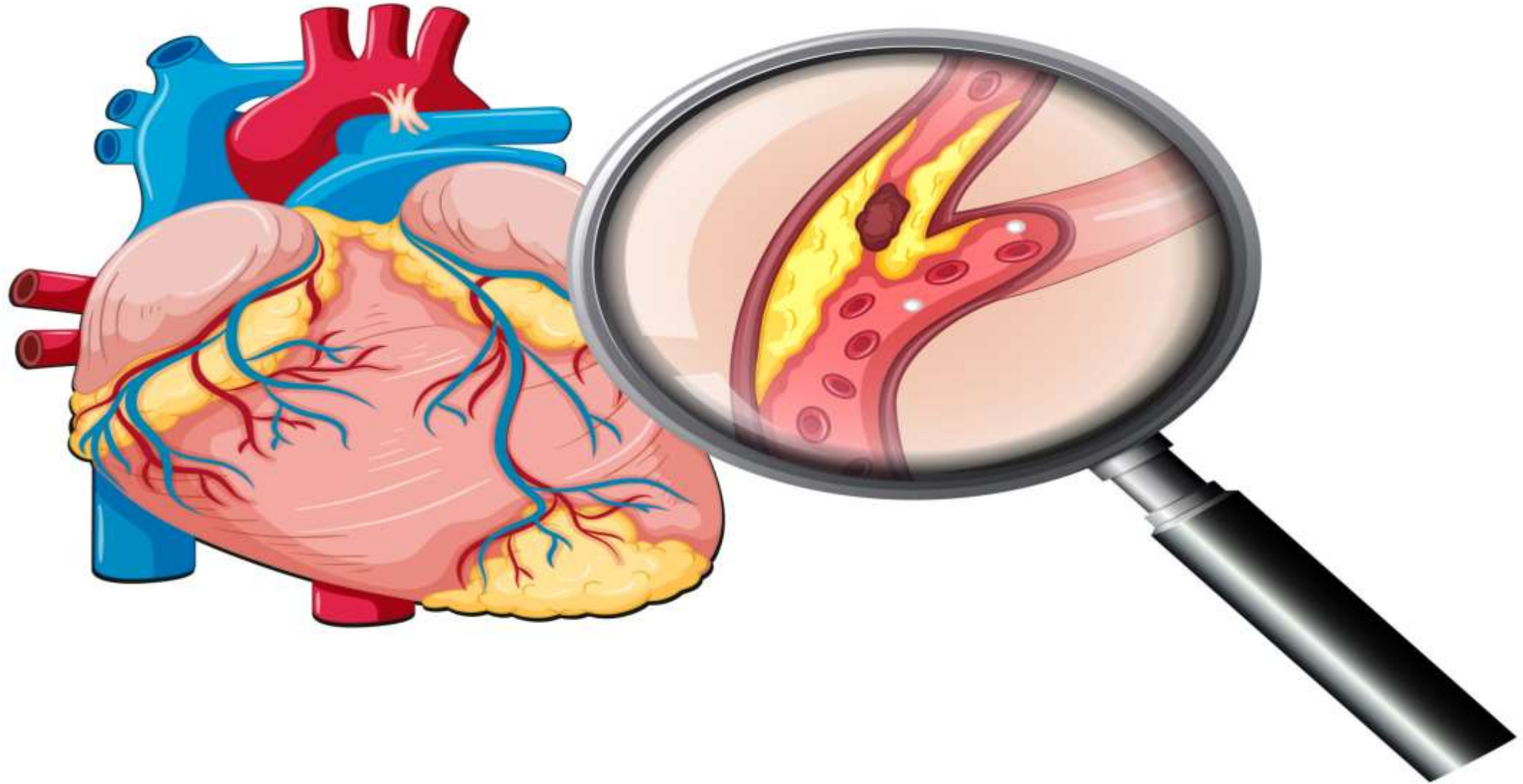


# Arteriosclerosis



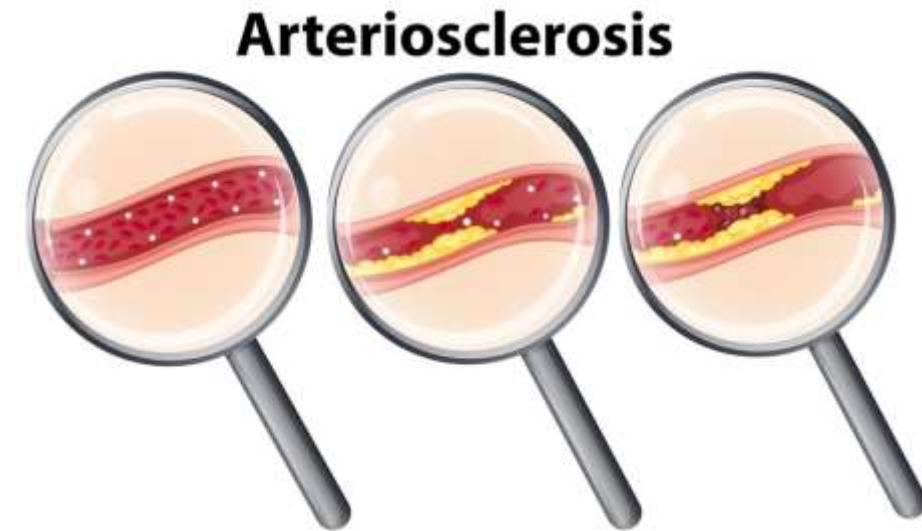
# INTRODUCTION

Arteriosclerosis is a general term used to include all conditions with thickening and hardening of the arterial walls.

The following morphologic entities are included under arteriosclerosis:

- I. Senile arteriosclerosis
- II. Hypertensive arteriolosclerosis
- III. Mönckeberg's arteriosclerosis (Medial calcific sclerosis)
- IV. Atherosclerosis

The last-named, atherosclerosis, is the most common and most important form of arteriosclerosis; if not specified, the two terms are used interchangeably with each other.



# SENILE ARTERIOSCLEROSIS

- Senile arteriosclerosis is the thickening of media and intima of the arteries seen due to aging.
- The changes are nonselective and affect most of the arteries.
- These are possibly induced by stress and strain on vessel wall during life.

# HYPERTENSIVE ARTERIOLOSCLEROSIS

Hypertensive Arteriolosclerosis is the term used to describe 3 morphologic forms of vascular disease affecting arterioles and small muscular arteries. These are:

- Hyaline arteriolosclerosis,
- Hyperplastic arteriolosclerosis and
- Necrotising arteriolitis.

All the three types are common in hypertension but may occur due to other causes as well.

## **Hyaline Arteriolosclerosis**

This is a common arteriolar lesion that may be seen physiologically due to aging, or may occur pathologically in benign nephrosclerosis in hypertensives and as a part of microangiopathy in diabetics

### **Pathogenesis**

The exact pathogenesis is not known.

However, the following hypotheses have been proposed:

i) The lesions result most probably from leakage of components of plasma across the vascular endothelium. This is substantiated by the demonstration of immunoglobulins, complement, fibrin and lipids in the lesions. The permeability of the vessel wall is increased, due to haemodynamic stress in hypertension and metabolic stress in diabetes, so that these plasma components leak out and get deposited in the vessel wall.

ii) An alternate possibility is that the lesions may be due to immunologic reaction.

iii) Some have considered it to be normal aging process that is exaggerated in hypertension and diabetes mellitus.

## **Hyperplastic Arteriolosclerosis**

The hyperplastic or proliferative type of arteriolosclerosis is a characteristic lesion of malignant hypertension. Other causes include haemolytic-uraemic syndrome, scleroderma and toxemia of pregnancy.

### **Pathogenesis**

- The pathogenesis of hyperplastic intimal thickening is unclear.
- Probably, the changes result following endothelial injury from systemic hypertension, hypoxia or immunologic damage leading to increased permeability.
- A healing reaction occurs in the form of proliferation of smooth muscle cells with fibrosis.

## **Necrotising Arteriolitis**

In cases of severe hypertension and malignant hypertension, parts of small arteries and arterioles show changes of hyaline sclerosis and parts of these show necrosis, or necrosis may be superimposed on hyaline sclerosis. However, hyaline sclerosis may not be always present in the vessel wall.

## **Pathogenesis**

Since necrotising arteriolitis occurs in vessels in which there is sudden and great elevation of pressure, the changes are said to result from direct physical injury to the vessel wall.

## **MÖNCKEBERG'S ARTERIOSCLEROSIS (MEDIAL CALCIFIC SCLEROSIS)**

Mönckeberg's arteriosclerosis is calcification of the media of large and medium-sized muscular arteries, especially of the extremities and of the genital tract, in persons past the age of 50.

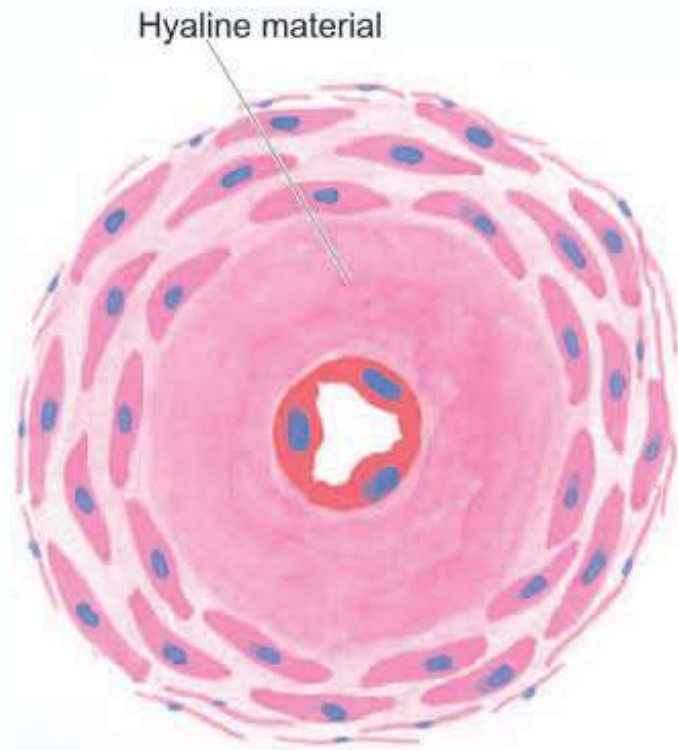
The condition occurs as an age-related degenerative process, and therefore, an example of dystrophic calcification, and has little or no clinical significance.

However, medial calcification also occurs in some pathological states like pseudoxanthoma elasticum and in idiopathic arterial calcification of infancy.

### **Pathogenesis**

Pathogenesis of this condition is not known but it is considered as an age-related physiologic change due to prolonged effect of vasoconstriction

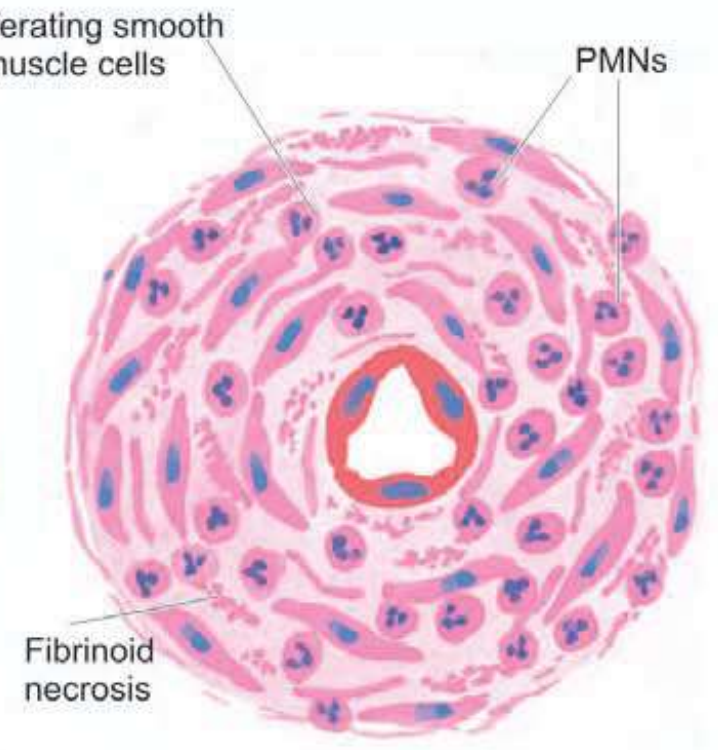




A, HYALINE ARTERIOLOSCLEROSIS



B, HYPERPLASTIC ARTERIOLOSCLEROSIS



C, NECROTISING ARTERIOLITIS

# SYMPTOMS OF ARTERIOSCLEROSIS



## Symptoms of Arteriosclerosis

Usually arteriosclerosis does not show any symptoms. But it is important to have routine checkups because as the condition worsens, it can trigger a heart attack or stroke. Common symptoms include:

- Chest pain and angina
- Numbness in the arms and legs
- Kidney failure
- Fatigue
- Shortness of breath
- Slurred speech
- Brief vision loss

THANK YOU 😊