SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE TECHNOLOGY

COURSE NAME: PATHOLOGY II

II YEAR

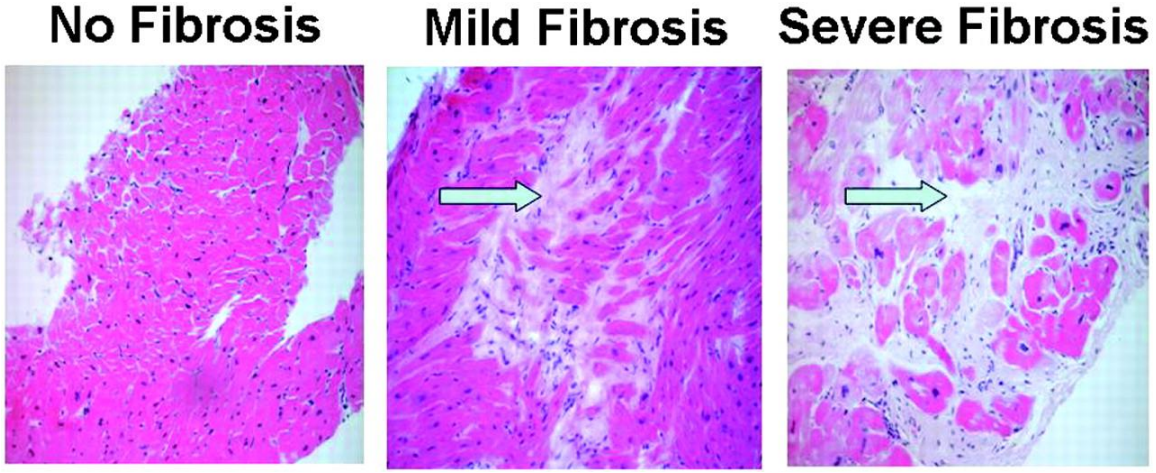
UNIT I: PATHOLOGY OF HEART

TOPIC : CHRONIC ISCHEMIC HEART DISEASES & SUDDEN CARDIAC DEATH

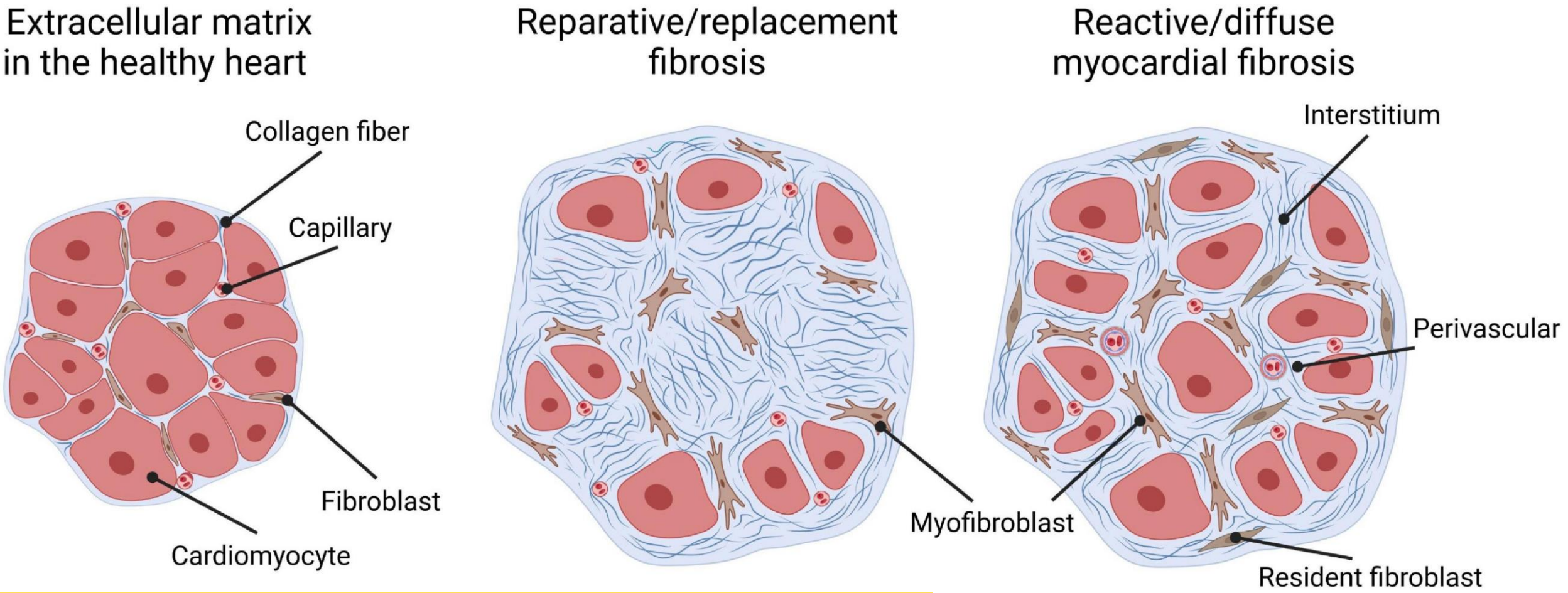
Definition

- Chronic ischemic heart disease , Ischemic cardiomyopathy or myocardial fibrosis are the terms used for focal or diffuse fibrosis in the myocardium characteristically found in elderly patients

- Occasionally, serious cardiac arrhythmias or infarction may supervene and cause death.



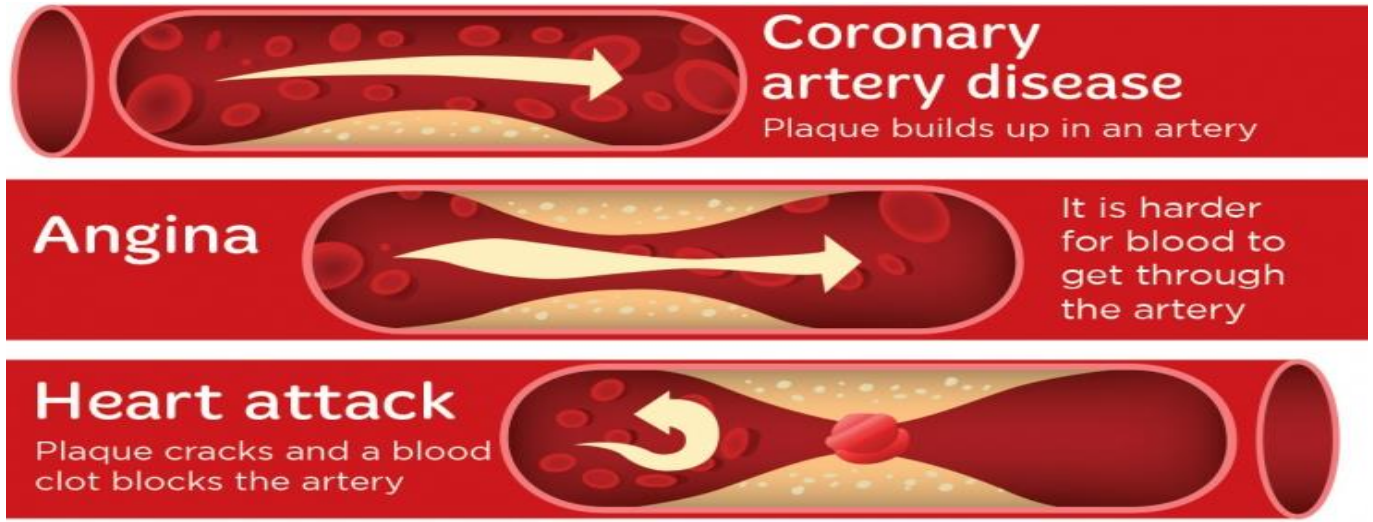
myocardial fibrosis



Causes

Small areas of fibrous scarring are commonly found in the heart of patients who have history of episodes of **angina and attacks of MI** some years back.

The patients generally have gradually developing CHF due to de-compensation over a period of years



Etiopathogenesis

Coronary atherosclerosis

progressive ischaemic myocardial damage

replacement by myocardial fibrosis.

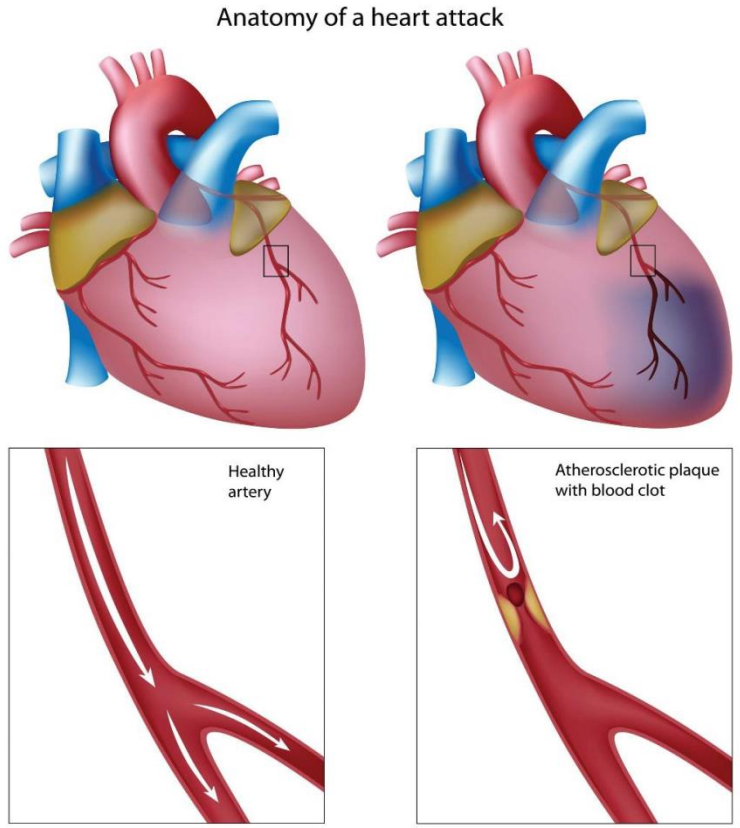
Development of fibrosis

- Myocardial fibrosis represents healing of **minute infarcts** involving small scattered groups of myocardial fibres.

- Healing of minute areas of

focal **myocytolysis**.

(Myocytolysis refers to a state of significant damage to cardiac myocytes, muscle cells of the heart, caused by myocardial strain)



Development of fibrosis

Degeneration due to myocardial ischemia

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Loss of myofibrils but nuclei remain intact

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Fibroblasts and collagens are formed

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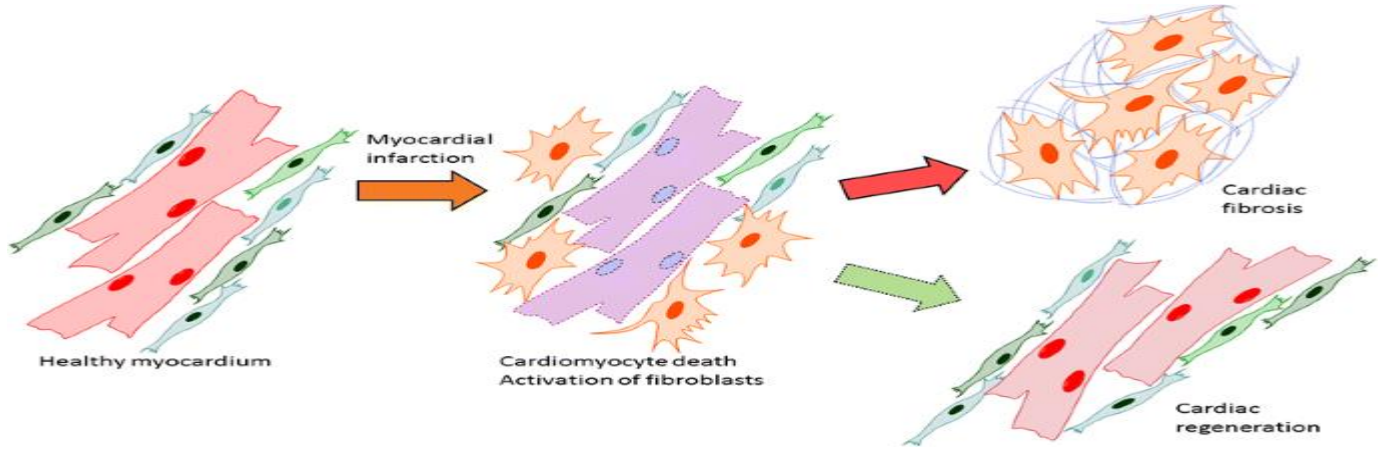
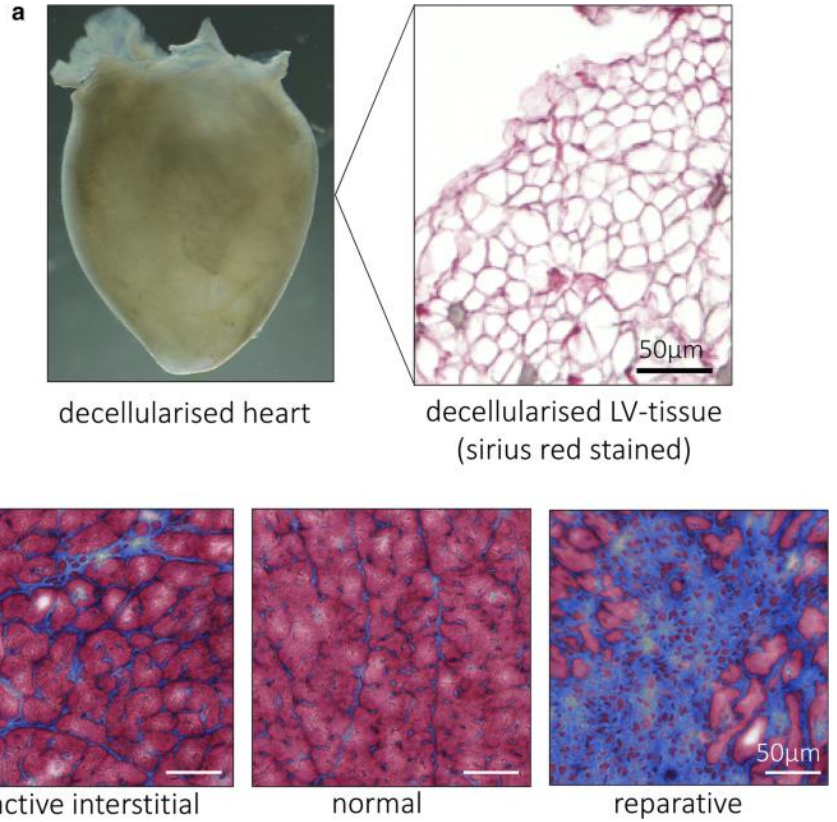
Myocardial fibrosis



Morphological features

- The left ventricular wall generally shows foci of **grey-white fibrosis** in brown myocardium.
- **Healed scars** of previous MI may be present.
- Valves of the left heart may be distorted, thickened and show **calcification**.
- Coronary arteries invariably show moderate to **severe atherosclerosis.**



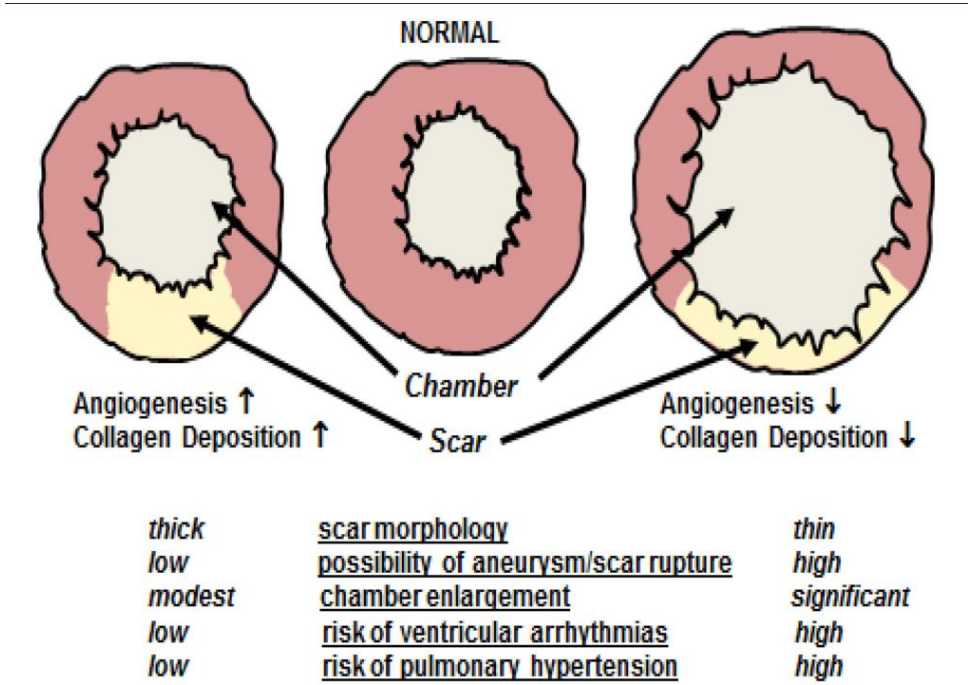
Morphological features

- **Diffuse myocardial fibrosis**

around the small blood vessels

in the interstitial tissue of the myocardium

- Areas of **brown atrophy** of the myocardium may also be present



Definition

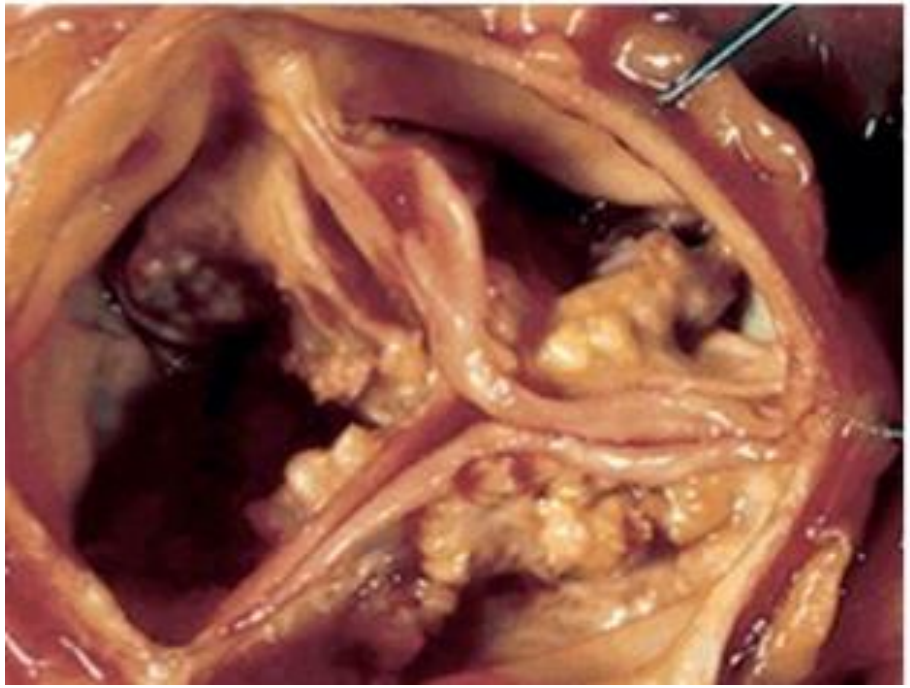
Sudden cardiac death is defined as sudden death within 24 hours of the onset of cardiac symptoms.

The most important cause is coronary atherosclerosis

Other causes

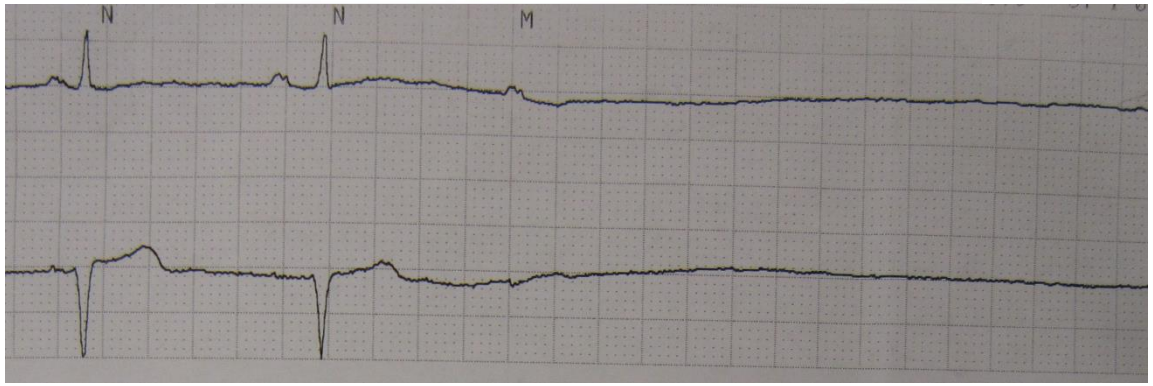
Non – ischemic causes

- Calcific aortic stenosis
- Myocarditis
- Hypertrophic cardiomyopathy
- Mitral valve prolapse,
- Endocarditis
- Hereditary and acquired defects of the conduction system



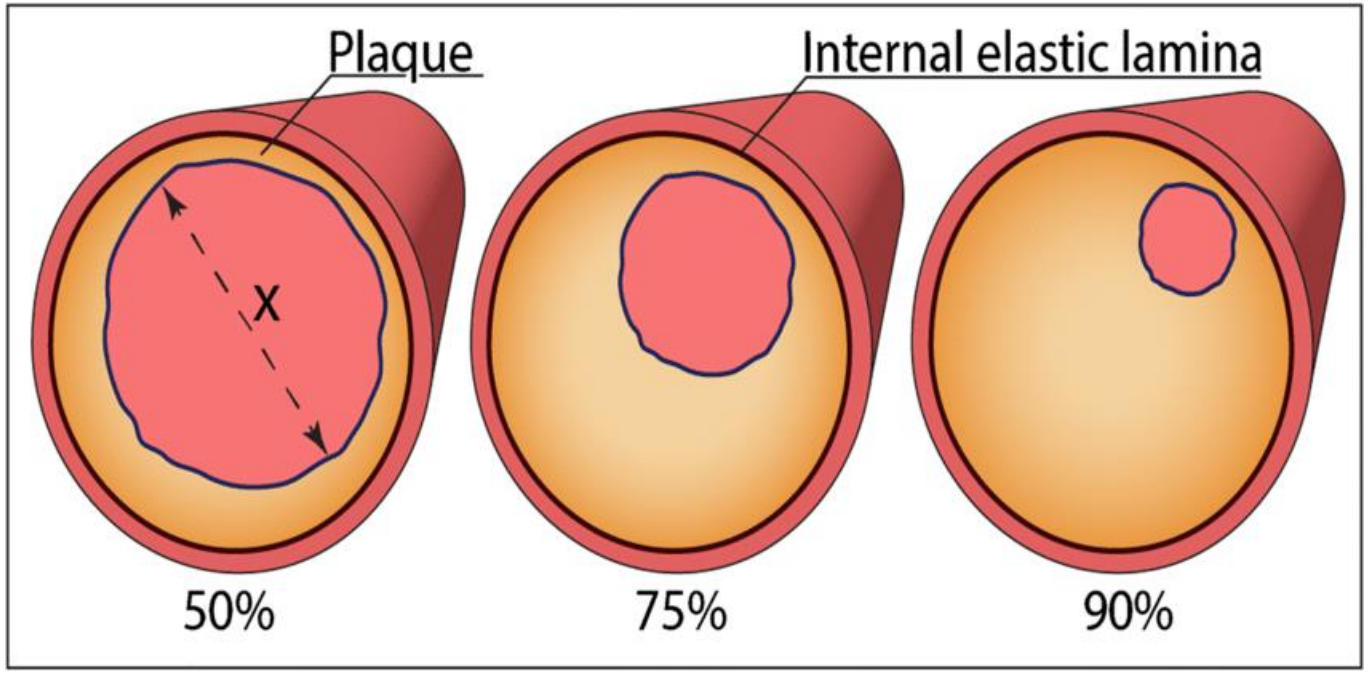
The mechanism of sudden death by myocardial ischaemia is almost always by,

- fatal arrhythmias,
- chiefly ventricular asystole or fibrillation.



Morphological features

At autopsy, such cases reveal most commonly **critical atherosclerotic coronary** narrowing (more than 75% compromised lumen) in one or more of the three major coronary arterial trunks with superimposed thrombosis or plaque-haemorrhage.



Summary

Types of IHD	Coronary Lesion
Stable angina	Critical coronary narrowing (3/4th)
Chronic IHD	Chronic progressive coronary atherosclerosis
Unstable (pre-infarction) angina	Plaque rupture, Haemorrhage, Ulceration, Mural thrombosis with thromboembolism
Myocardial infarction	Plaque haemorrhage Fissuring and ulceration Complete mural thrombosis
Sudden ischaemic death	Severe multi-vessel disease Acute changes in plaque Thrombosis with thromboembolism

Thank you

Reference:

Text book of Pathology, Harsh Mohan