

# **CARDINAL SYMPTOMS AND SIGNS IN CLINICAL MEDICINE**

# Chest Pain

One of the most important complaint for which patient seeks medical attention.

Important point here is to distinguish trivial disorders like muscle spasm from coronary artery disease and other serious disorders.

## Chest Pain

Myocardial  
Ischemia


Irritation of  
Serous  
Membranes or  
Joints

Tissue Disruption

Esophageal Pain

Gastric And  
Duodenal Ulcer  
Tracheobronchiti  
s

# 1) Due to myocardial ischemia (Angina, MI)

- Imbalance between O<sub>2</sub> Supply and demand of the heart.
- Oxygen consumption depends on three factors:
  - Myocardial tension. 
  - Contractility of heart.
  - Heart rate.

**Any condition in which there is increase in heart rate, arterial pressure, or myocardial contractility in the presence of Coronary Artery Narrowing → Precipitate Anginal attacks by increasing myocardial O<sub>2</sub> needs.**

- **Causes of myocardial ischemia:**
  - **Organic narrowing of the coronary artery → Coronary atherosclerosis**
  - **Spasm of major epicardial vessels**
  - **Aortic stenosis**

# Effects of Myocardial Ischemia

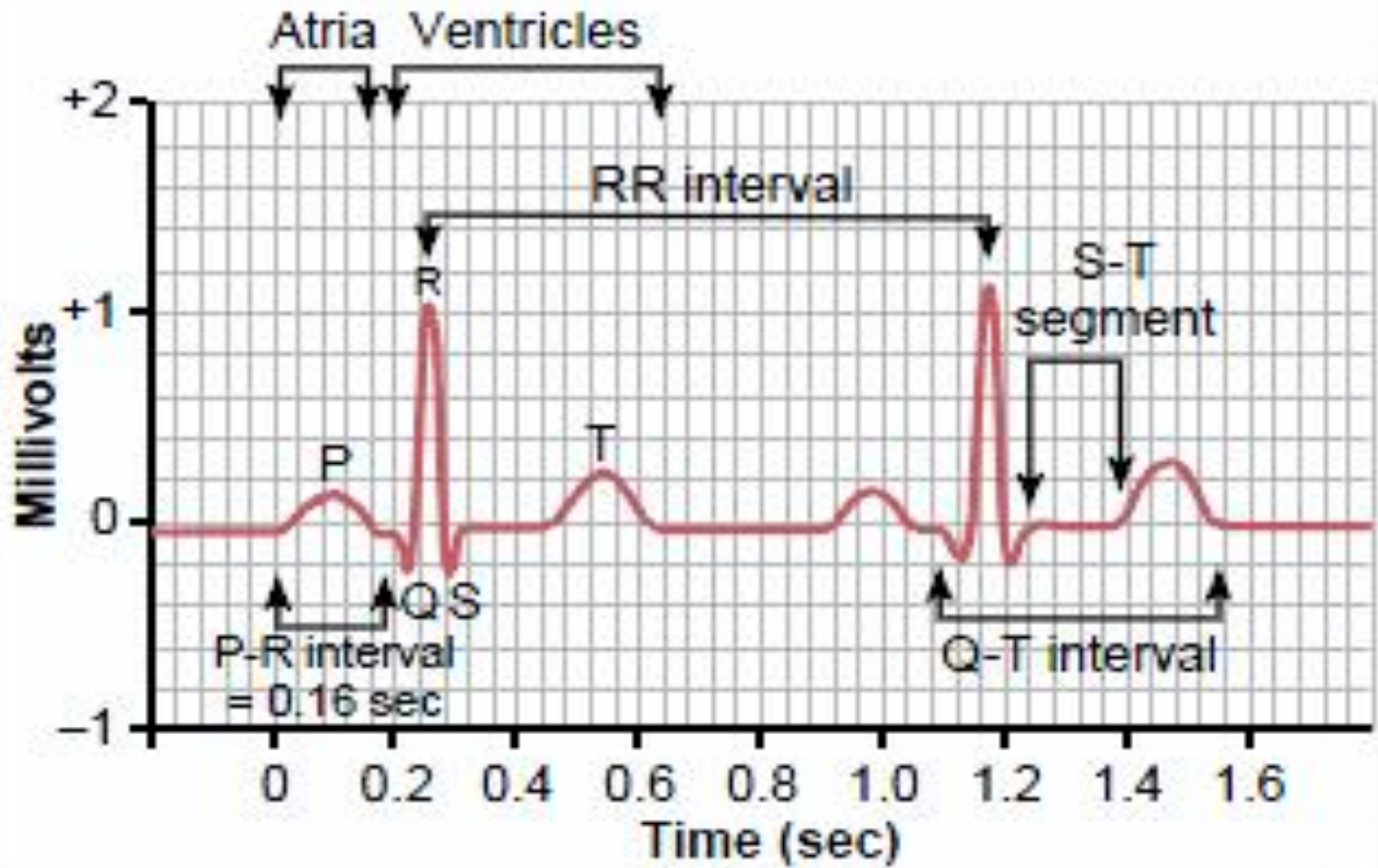
## Symptoms

- **Anginal Pain:** Heavy pressure or squeezing, sometimes choking sensation, burning pain, the pain aggravated by walking especially after meal, on cold days, against wind or uphill, anger, excitement, not related to cough or respiratory movements, the pain relieved by rest and sublingual nitroglycerine.
- **Substernal in position, radiation** → interscapular area, arms, shoulder, lower jaws and abdomen.
- **Lasts between 2-10 min.**

# (Myocardial Infarction (M.I

Pain similar to that of angina, but:

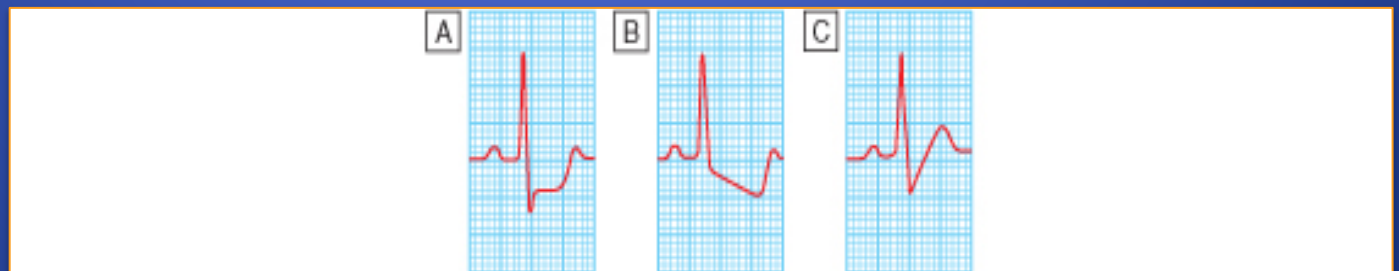
- Longer duration > 30 min.
- More severe in intensity
- Not relieved by rest or Nitroglycerine, require large doses of Narcotics, and associated with sweating, hypotension, apprehension and feeling of death.





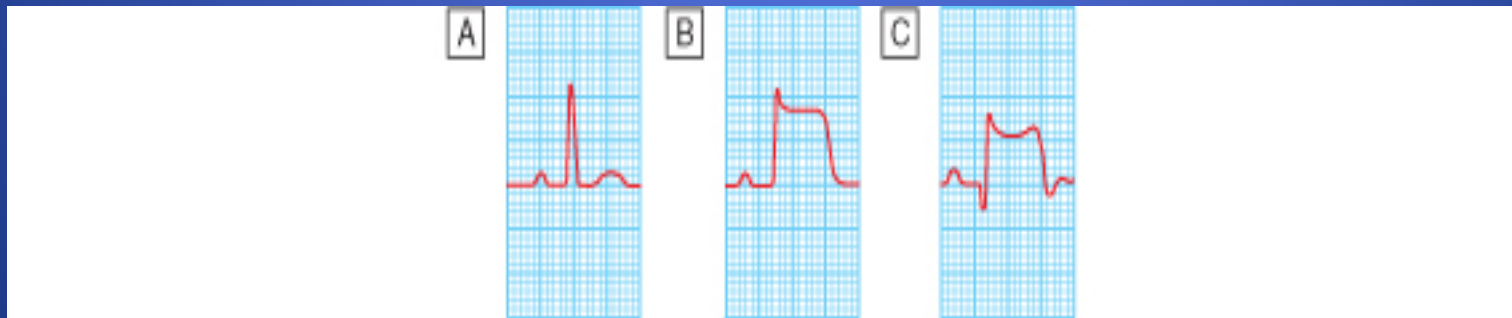
# ECG

- ST segment → depression, though ECG could be normal between attacks and even during them.
- A flat or down sloping ST segment depression of 1 mm or greater during on attack of pain, with a return to baseline after subsidence of pain, strongly suggests that the pain is Anginal.



# In M.I

- ST segment → Elevation
- T-wave → Inversion and Q wave



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## 2- Irritation of serous membranes or joints

### □ A) Pericarditis

- Causes two types of Chest Pain:
  - Pleuritic Pain related to respiratory movements aggravated by cough and deep inspiration, and related to position (more at supine position), and relieved by sitting and leaning forward. Lasts longer than Anginal Pain.
  - Steady, crushing, substernal pain, which is almost similar to that of M.I.

**Irritation of  
Serous  
Membrane or  
Joints**

**Pericarditis**

**Pleural Pain**

**Mediastinal  
Emphysema**

**Mediastinitis  
& Mediastinal  
Tumor**

**Acute  
Dissection of  
Aorta**

**Costochondral  
&  
Chondrosterna  
l Articulation**

- **Caused by:**
  - **Infection( Viral, Bacterial, Tuberculous)**
  - **Rheumatic fever**
  - **Trauma**
  - **Surgery & Myocardial Infarction**

- On auscultation → Pericardial friction rub.
- ECG → ST segment elevation which is concave upwards.



## □ **B) Pleural Pain**

- **Results from stretching of inflamed parietal pleura: pleurisy, pneumonia, pneumothorax and pleural tumors.**
- **Causes sharp knife-like superficial pain, aggravated by cough and inspiration, associated with pleural rub on auscultation.**

## □ C) Pulmonary Embolism

- Substernal pain and just like M.I or pleuritic with haemoptysis (coughing up of blood), if embolism caused pulmonary infarction.

## □ D) Mediastinal Emphysema

- Intense and sharp pain, may radiate to the shoulder.



## □ E) Mediastinitis and Mediastinal Tumors

- Cause pain similar to pleurisy.

## □ F) Acute dissection of Aorta

- Extremely severe pain, at center of chest, lasts for hours, associated with absent radial pulse.

## □ **G) Costochondral and Chondrosternal Articulation**

- Anterior chest pain associated with swelling, redness, localized tenderness, and feeling of tightness due to muscle spasm. This pain is associated with history of trauma to the chest and is confirmed by pressure on the joint which causes pain.