

## Batch 26 - Cardio respiratory Module - Tutorial

### Case studies in Cardiac Pathology

Date	Time	Group	Venue
13.06.2018	2.15 – 3.15 pm	Group A	Tute room A20-003
	3.15 – 4.15 pm	Group B	Tute room A20-003
14.06.2018	2.15 – 3.15 pm	Group C	Tute room A20-003
	3.15 – 4.15 pm	Group D	Tute room A20-003

**Please note when attending the class, each student should bring the written answers to all four questions.**

1. A 45 -year- old male was awakened from sleep at 3 am with crushing retrosternal chest pain radiating to his left arm and shortness of breath. He had diabetes mellitus and hyperlipidaemia and he was a known hypertensive. He was obese and also a smoker having a family history of coronary artery disease. He was admitted to the primary care unit. He was in considerable distress and on examination was bradycardic and hypotensive and had cold clammy extremities. There were bi-basal crepitations on auscultation of the lungs.

Investigations performed at 4 am revealed,

White blood cell count 7,900/ mm<sup>3</sup> (4 000 – 11 000 /cu mm)

Haematocrit 45.8%                                      Platelets 246 000/ mm<sup>3</sup> (150 000 – 450 000/ cu mm)

Troponin I - Negative

Electrocardiogram (ECG) showed ST elevation in leads I, AVL, V2-V6. The chest X-ray showed cardiomegaly with hilar prominence.

He was immediately transferred to the coronary care unit. In spite of aggressive treatment, he died one day later.

- What is the most likely cause of death?
- What are the other possible causes of death?
- Identify the risk factors that would have contributed to his death.
- Discuss the possible pathogenic process for his death.
- Discuss the diagnostic value of Troponin I in this patient.
- Describe the expected macroscopic changes of the heart at the post mortem.

2. A 17- year- old boy participated in 5000m race at the school sports meet. Halfway through the race he collapsed and was found to be dead.

- i. What are the possible cardiac causes for his death?
- ii. What pathological changes would you expect to see in his heart?

3. A 40- year- old male presented with fever for 3 weeks. On questioning, he gave a history of rheumatic heart disease with defaulted follow up. He had undergone a tooth extraction one month back. He was suspected to have infective endocarditis.

- i. What are the investigations that would help to arrive at a diagnosis?
- ii. Describe the aetiopathogenesis of this condition?
- iii. Describe the expected pathological changes in this patient's heart.
- iv. Describe how you would differentiate cardiac vegetations of infective endocarditis from other cardiac vegetations.

4. A 65- year- old hypertensive patient attends the medical clinic after four years of not taking regular treatment. He is a heavy smoker. He complains of shortness of breath on exertion.

- i. Explain the pathophysiological basis of the evolution of the patient's disease process.
- ii. Describe the macroscopic changes that you expect to see in the heart of this patient.
- iii. List the other organs that are likely to get affected due to long term hypertension.

He has continued to smoke in spite of medical advice and had defaulted treatment. He was admitted to the emergency medical unit when he collapsed at work. He had complained severe inter-scapulae back pain prior to collapse. Within two hours of admission he developed a cardiac arrest and died despite of attempt at resuscitation. At post mortem, a ruptured thoracic aneurysm was identified.

- iv. Define an aneurysm.
- v. State the most likely cause of his aneurysm and indicate the risk factors in this patient.
- vi. Describe the aneurysm formation in this patient.