Pre-reading: *match the terms with their definitions*

1 etiological	a) retention of waste products in the blood
2 clinical	b) decrease in blood supply
3 friction rub	c) dealing with causes of disease
4 effusion	d) decrease in systolic BP
5 tamponade	e) sound caused by the rubbing together of two serous membranes
6 paradoxic pulse	f) an abnormal deposit of fat or lipids, e.g. in an arterial wall
7 neoplasm	g) relating to the bedside treatment
8 uremia	h) condition in which the heart is squeezed by fluid
9 ischemia	i) abnormal growth of tissue
10 atheroma	j) escape of blood into a part of the body

ANGINA PECTORIS

Angina pectoris is the term used to describe discomfort due to transient myocardial ischaemia and constitutes a clinical syndrome rather than a disease; it may occur whenever there is an imbalance between myocardial oxygen supply and demand.

FACTORS INFLUENCING MYOCARDIAL OXYGEN SUPPLY AND DEMAND

Oxygen demand
Cardiac work
- Heart rate
- Blood pressure
- Myocardial contractility

Oxygen supply
*Coronary blood flow**
- Duration of diastole
- Coronary perfusion pressure (aortic diastolic-right atrial diastolic pressure)
- Coronary vasomotor tone

Oxygenation
- Haemoglobin
- Oxygen saturation

*N.B. coronary blood flow is confined to diastole

Coronary atheroma is by far the most common cause but angina is also a feature of aortic valve disease, hypertrophic cardiomyopathy and some other forms of heart disease.

Clinical features

The history is by far the most important factor in making the diagnosis. Stable angina is characterised by left-sided or central chest pain that is precipitated by exertion and promptly relieved by rest.

Most patients describe a sense of oppression or tightness in the chest – 'like a band round the chest'; 'pain' may be denied. When describing angina the victim often closes a hand around the throat, puts a hand or clenched fist on the sternum, or places both hands across the lower chest. The term 'angina' is derived from the Greek word for strangulation and many patients report a 'choking' sensation. Breathlessness is sometimes a prominent feature.

The pain may radiate to the neck or jaw and is often accompanied by discomfort in the arms, particularly the left, the wrists and sometimes the hands; the patient may also describe a feeling of heaviness or uselessness in the arms. Occasionally the pain is epigastric or interscapular. Angina may occur at any of these places of reference without *chest* discomfort but a history of precipitation by effort, and relief by rest or sublingual nitrate, should still allow the condition to be recognised.

Symptoms tend to be worse after a meal, in the cold, and when walking uphill or into a strong wind. Some patients find that the pain comes when they start walking and that later it does not return despite greater effort ('start-up angina'). Some experience the pain when lying flat (decubitus angina), and some are awakened by it (nocturnal angina).

Angina may also occur capriciously as a result of coronary arterial spasm; occasionally this is accompanied by transient ST elevation on the ECG (Prinzmetal's or variant angina).

ACUTE PERICARDITIS

It is useful to classify the types of pericarditis both clinically and etiologically, since this disorder is by far the most common pathologic process involving the pericardium. Pain of a pericardial friction rub, electrocardiographic changes, and pericardial effusion with cardiac tamponade and paradoxic pulse are cardinal manifestations of many forms of acute pericarditis and will be considered prior to a discussion of the most common forms of the disorder.

Chest pain is an important but not invariable symptom in various forms of acute pericarditis; it is usually present in the acute infectious types and in many of the forms presumed to be related to hypersensitivity or autoimmunity. Pain is often absent in a slowly developing tuberculous postirradiation, neoplastic, or uremic pericarditis. The pain of pericarditis is often severe. It is characteristically retrosternal and left precordial referred to the back and the trapezius ridge. Often the pain is pleuritic consequent to accompanying pleural inflammation, i.e. sharp and aggravated by inspiration, coughing and changes in body position, but sometimes it is a steady, constrictive pain which radiates into either arm or both arms and resembles that of myocardial ischemia; therefore, confusion with myocardial infarction is common. Characteristically, however, the pericardial pain may be relieved by sitting up and leaning forward. The differentiation of acute myocardial infarction from acute pericarditis becomes even more perplexing when with acute pericarditis, the serum transaminase and creatine kinase levels rise, presumably because of concomitant involvement of the epicardium. However, these enzyme elevations, if they occur, are quite modest, given the extensive electrocardiographic ST-segment elevation in pericarditis.

The *pericardial friction rub* is the most important physical sign; it may have up to three components per cardiac cycle and is high-pitched, scratching, and grating; it can sometimes be elicited only when firm pressure with the diaphragm of the stethoscope is applied to the chest wall at the left lower sternal border. It is heard most frequently during expiration with the patient in the sitting position, but an independent pleural friction rub may be audible during inspiration with the patient leaning forward or in the left lateral decubitus position. The rub is often inconstant and transitory, and a loud to-and-fro leathery sound may disappear within a few hours, possibly to reappear the following day.

Moderate elevations of the MB fraction of creatine phosphokinase may occur and reflect accompanying epimyocarditis.