

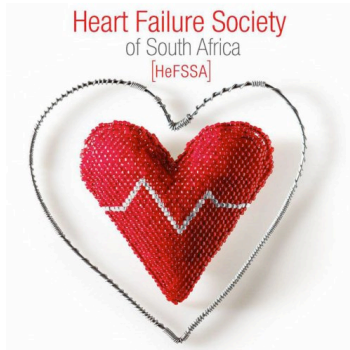
Program:

Module 1:

- Definition
- Epidemiology of Heart Failure
- Pathophysiology of Heart Failure
- **Specific Diseases causing Heart Failure and practical case studies**

Module 2:

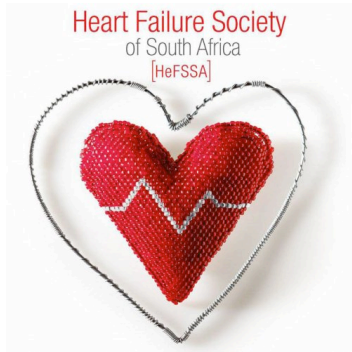
- Diagnosis and Investigation of HF and Practical Case Studies
- Treatment of Heart Failure and Practical Case Studies



Aetiology of Heart Failure

Most common causes of functional deterioration of the heart are, damage or loss of heart muscle, acute or chronic ischaemia, increased vascular resistance with hypertension, or due to tachyarrhythmia as AF

- ❖ Cardiomyopathy (e.g. idiopathic, familial, restrictive (RCM), hypertrophic (HCM), peripartum, viral, infiltrative)**
- ❖ Valvular heart disease**
- ❖ Coronary artery disease**
- ❖ Hypertension - often with LVH and preserved systolic function**
- ❖ Drugs and Toxins (e.g. cytotoxic agents)**
- ❖ Endocrine (e.g. diabetes, hypo/hyperthyroidism)**
- ❖ Nutritional (e.g. Thiamin deficiency, obesity)**
- ❖ Others as Peripartum cardiomyopathy, HIV infection**



Common Causes of Heart Failure

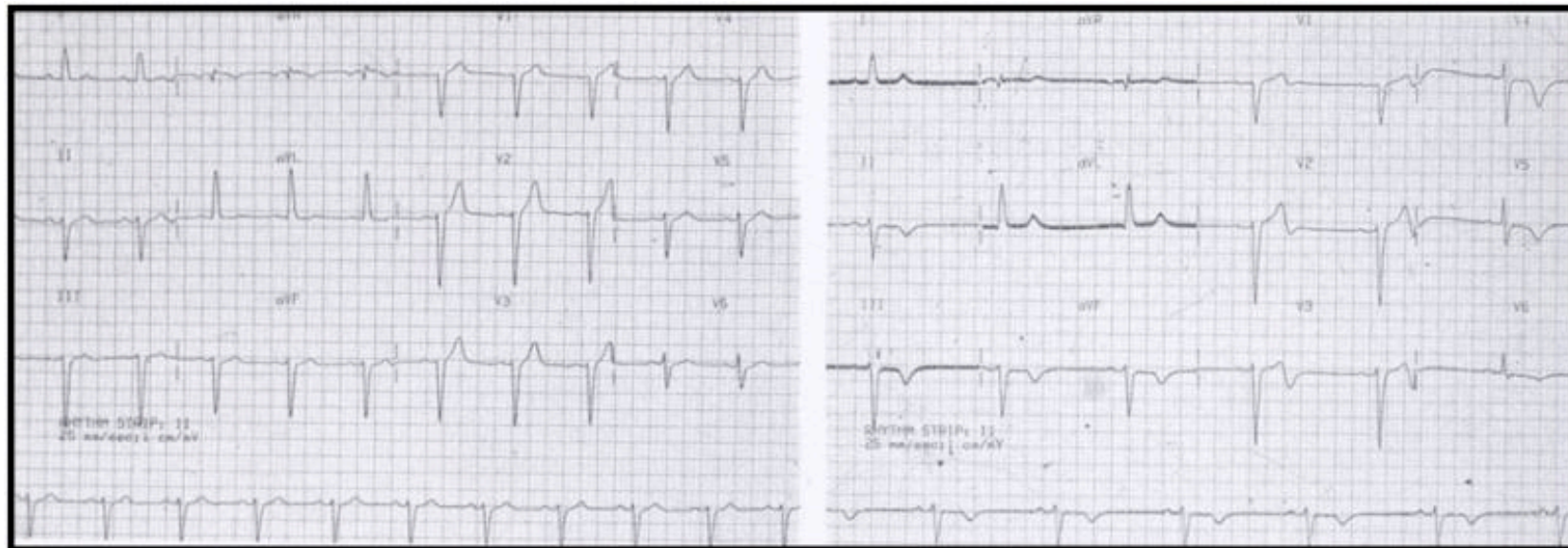
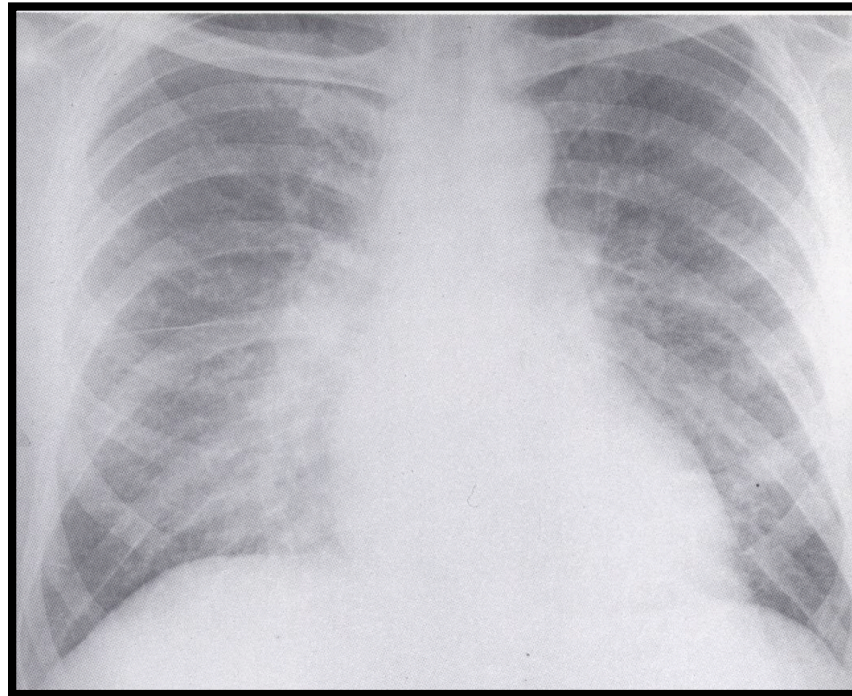
Ischaemic Heart Disease

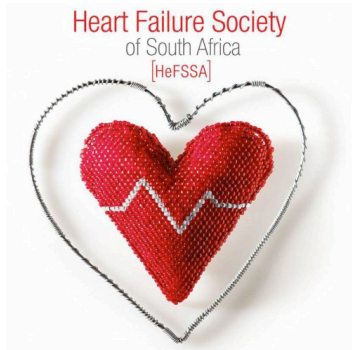
- Angina Pectoris
- Acute Myocardial Infarction
 - Complications of myocardial infarction
 - i. Early - Acute mitral regurgitation
 - VSD
 - ii. Late - LV aneurysm
 - Extensive myocardial drainage

Heart Failure Society
of South Africa
[HeFSSA]

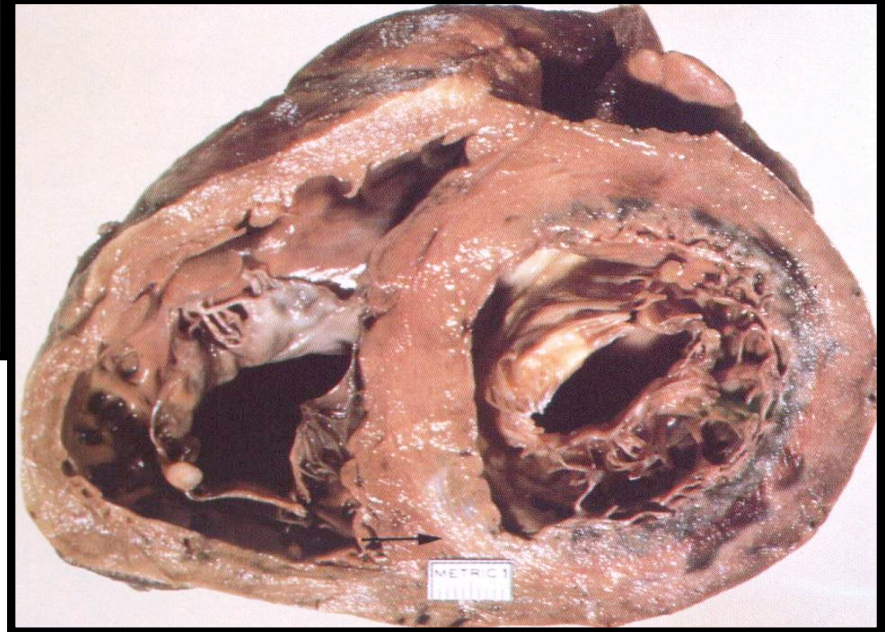
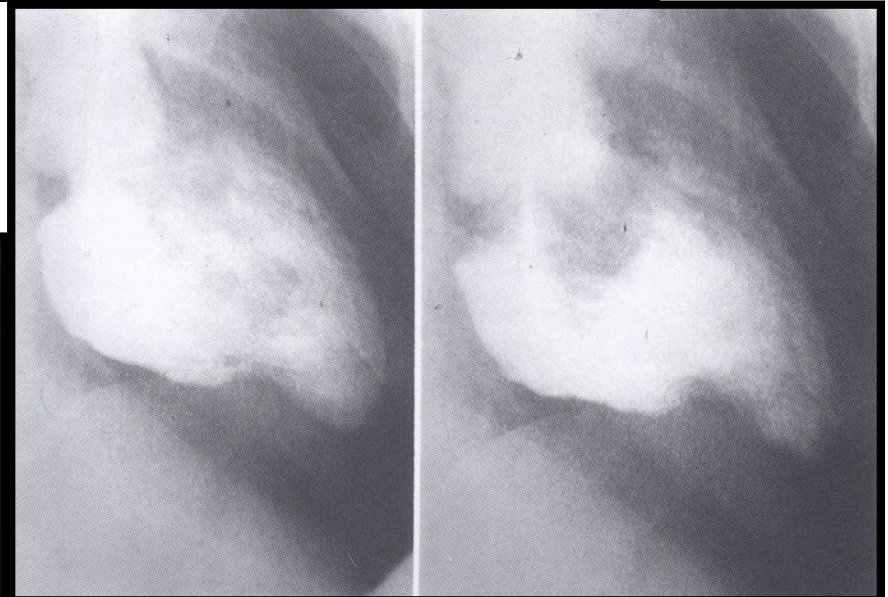
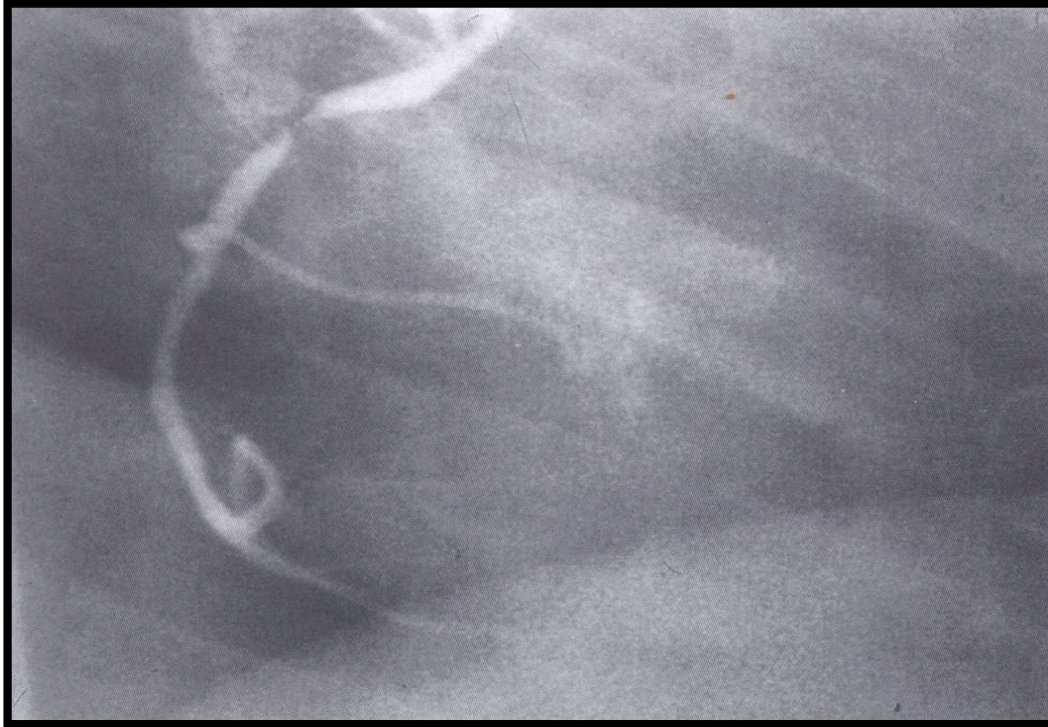


Angina



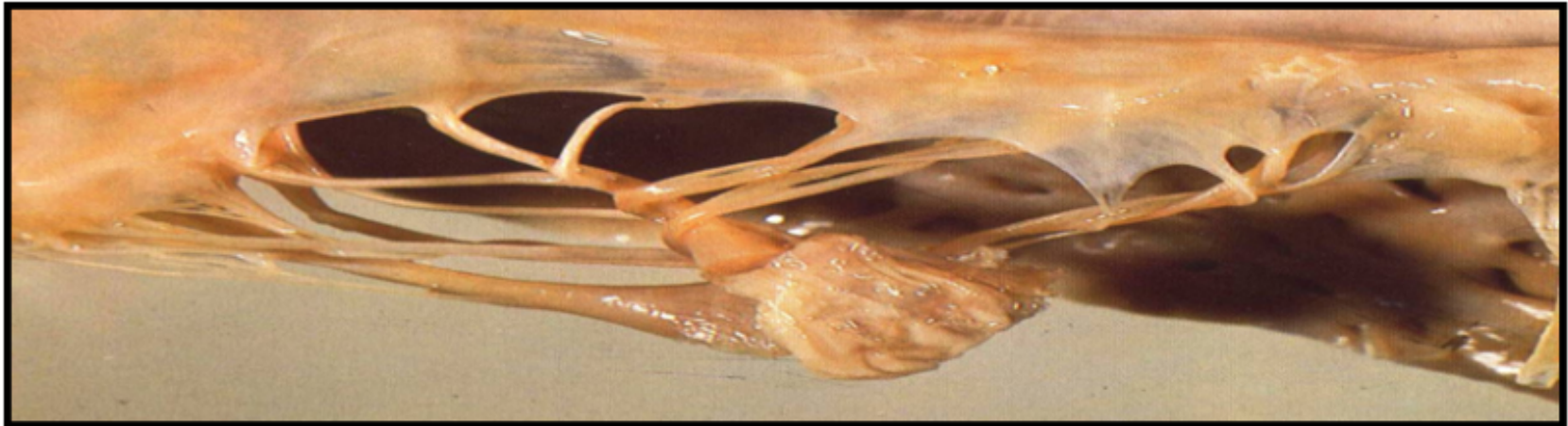
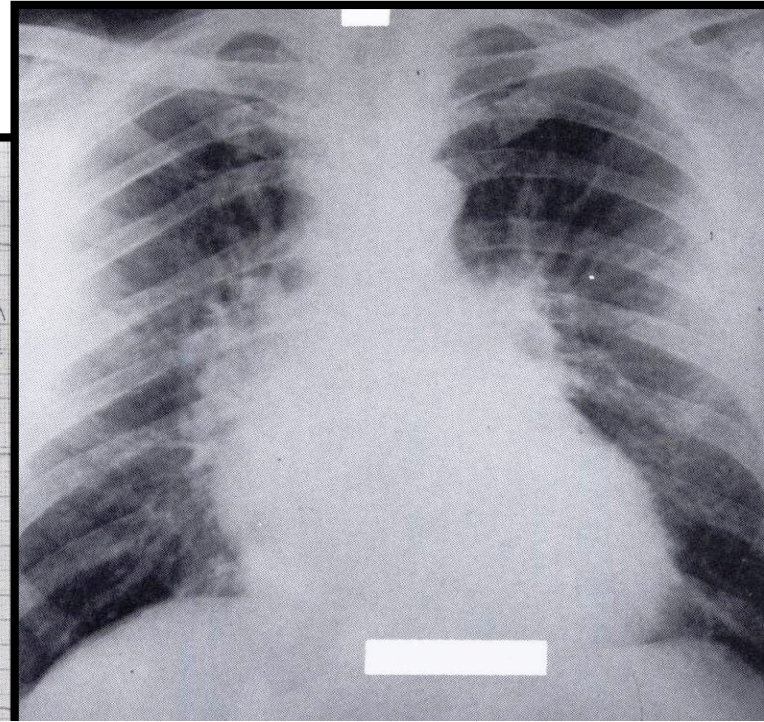
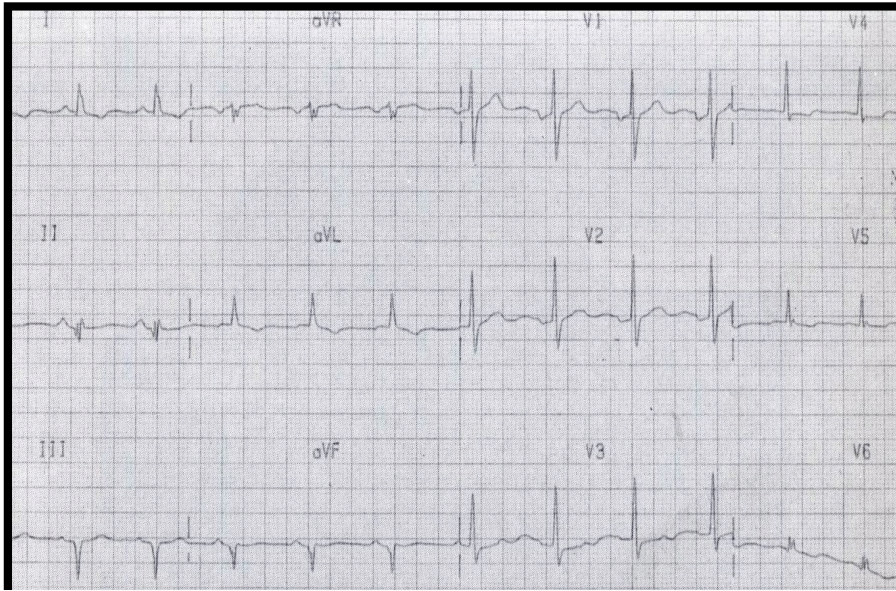


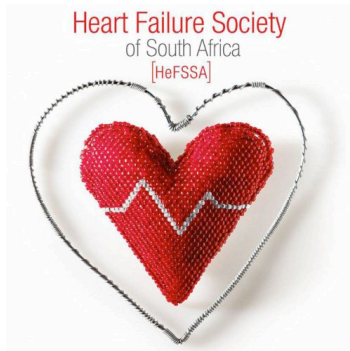
Acute Myocardial Infarction



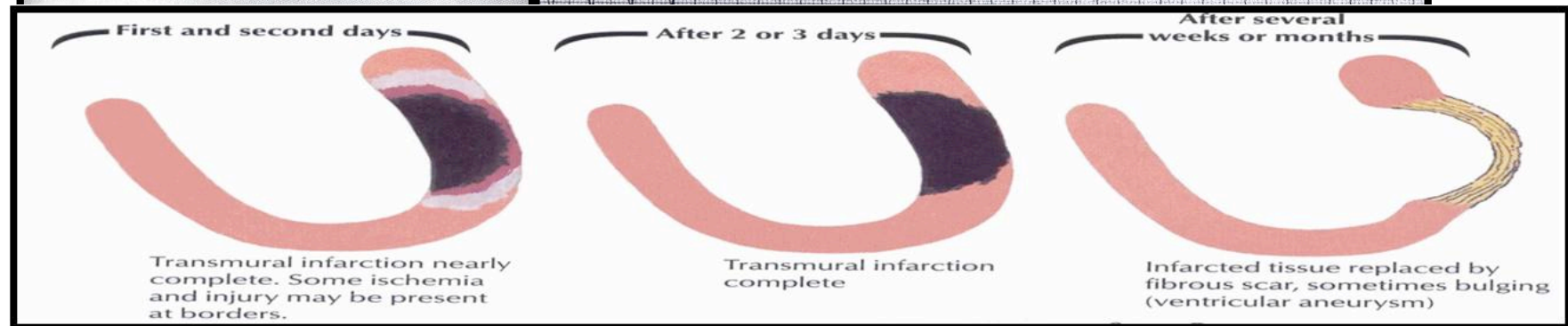
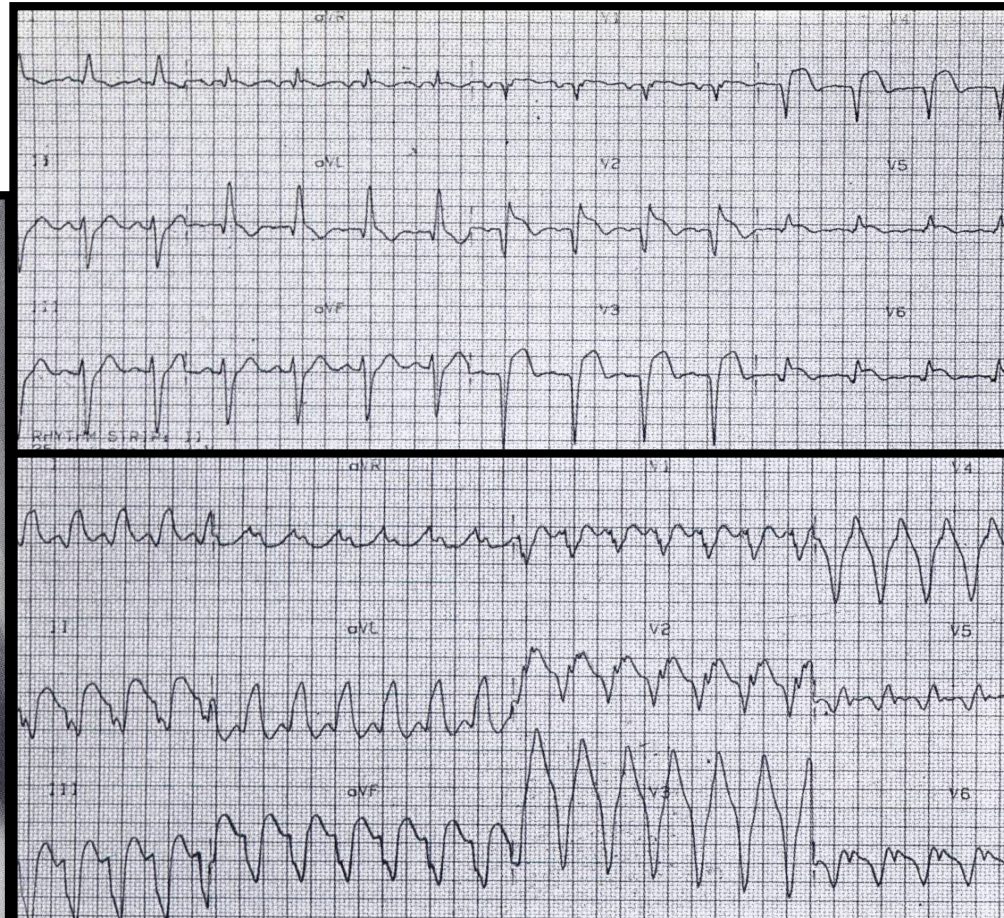
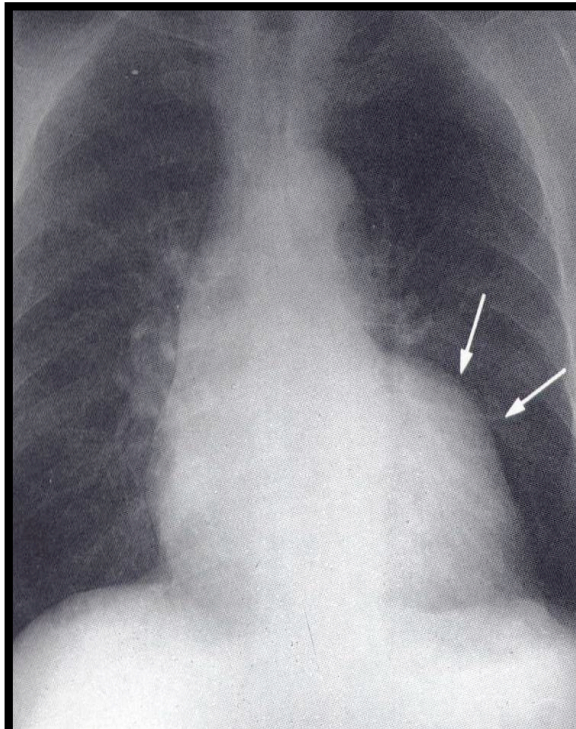


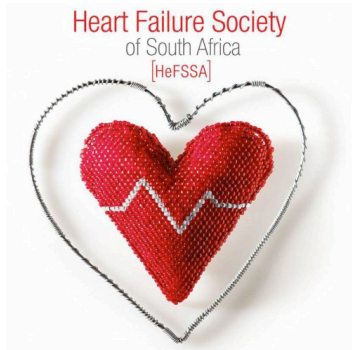
Acute Myocardial Infarction – Mitral Regurgitation





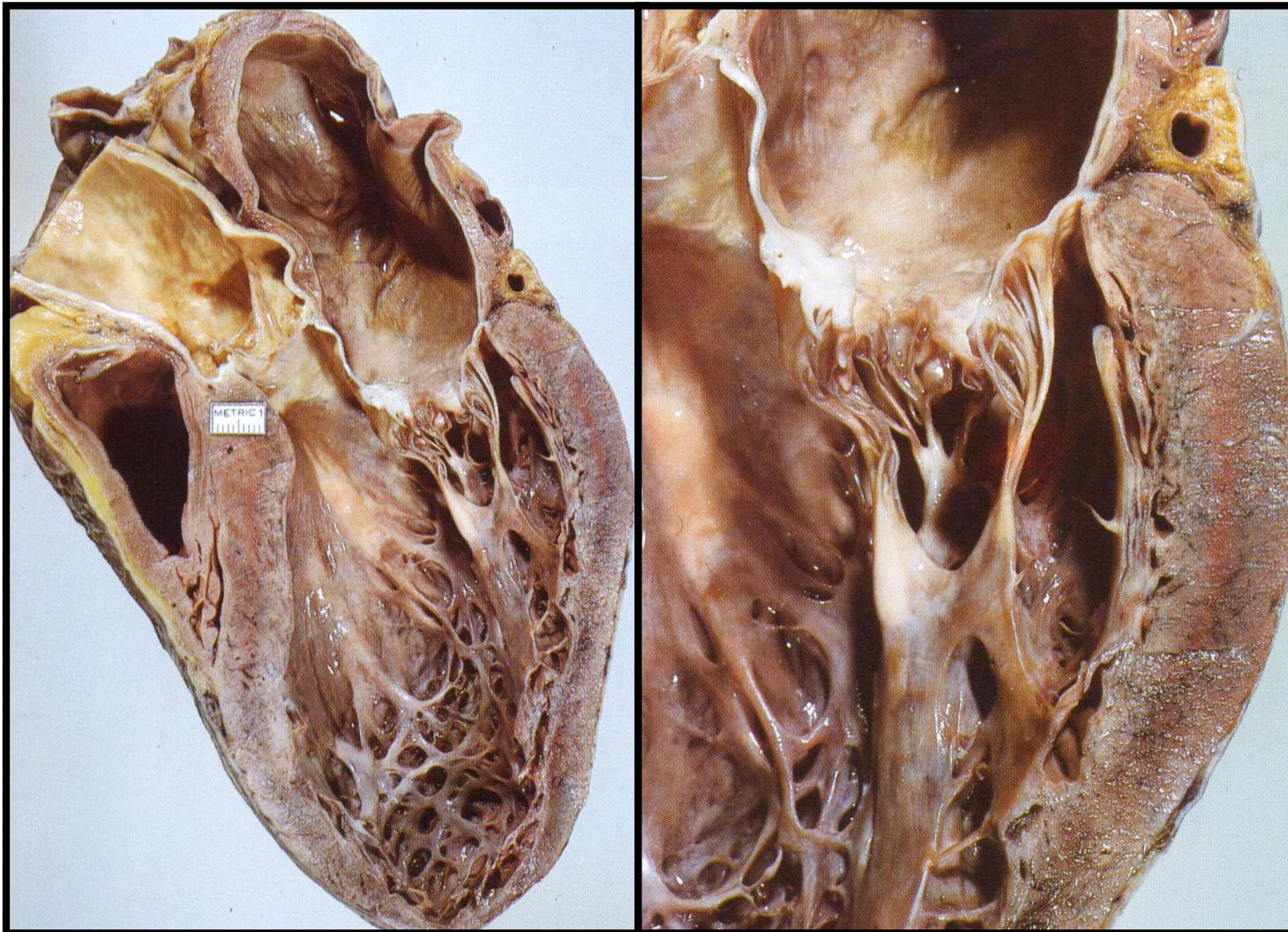
Ventricular Aneurysm





Ischaemic

Cardiomyopathy





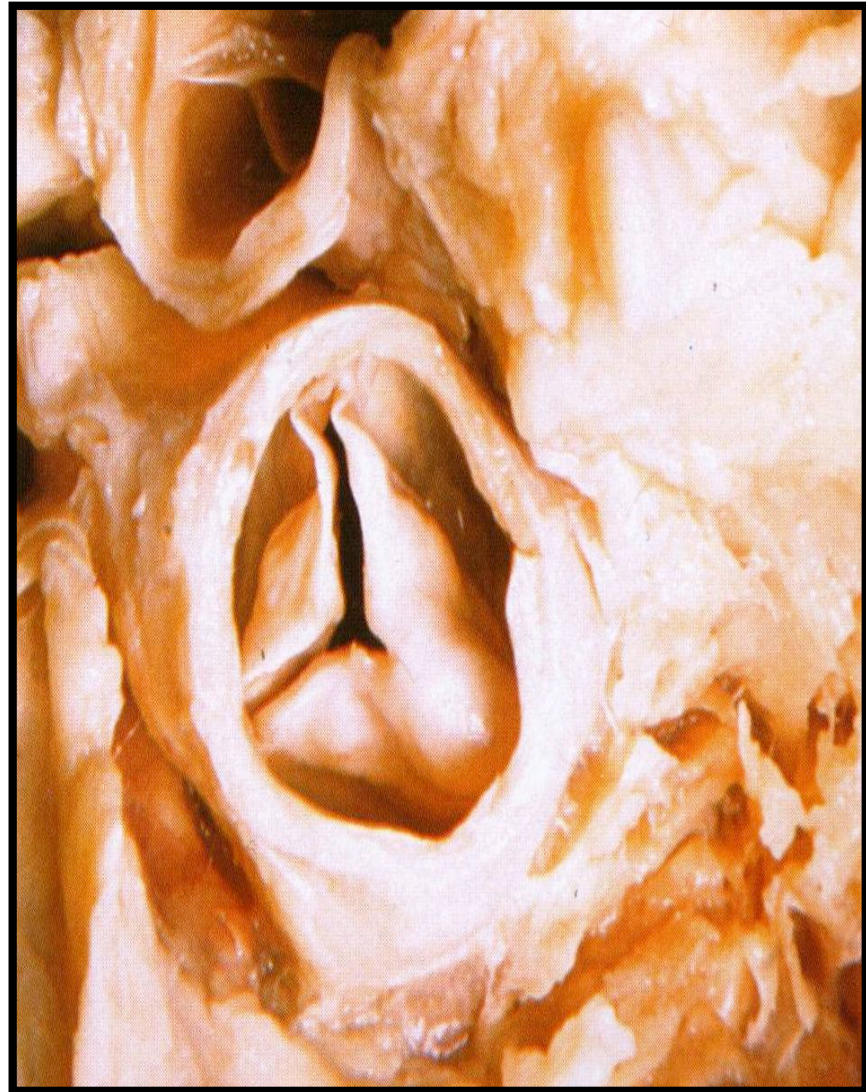
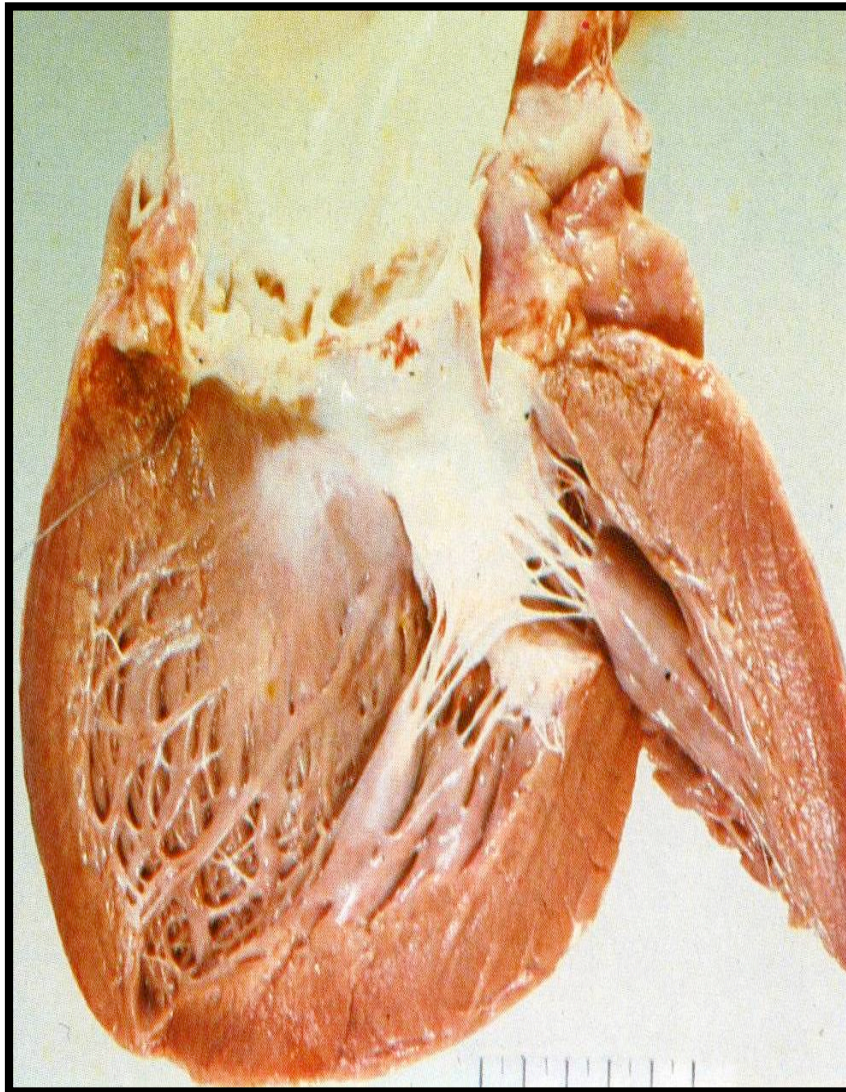
Common Causes of HF

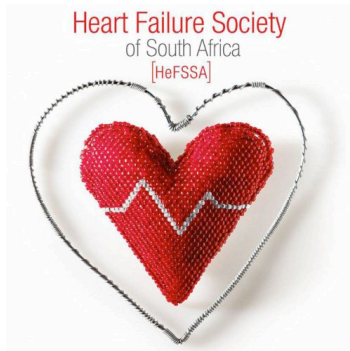
Valvular Heart Disease

- Acute – infective endocarditis
- Acute valvular disease – ruptured chordae, aortic dissection
- Chronic aortic valve disease
- Chronic mitral valve disease
- Chronic tricuspid valve disease

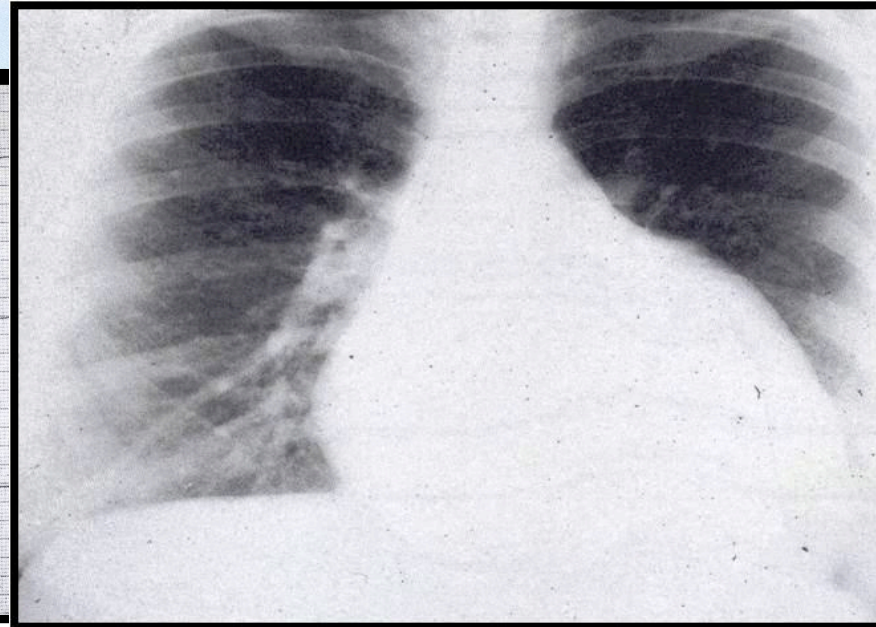
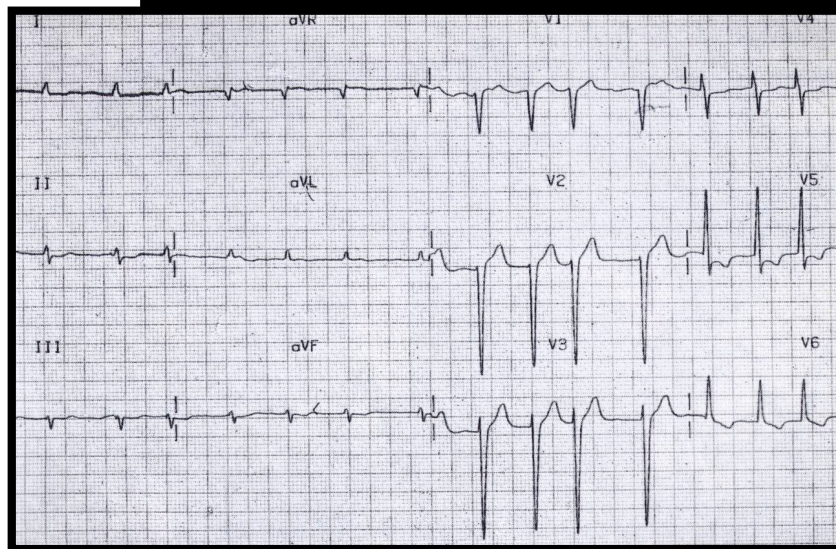
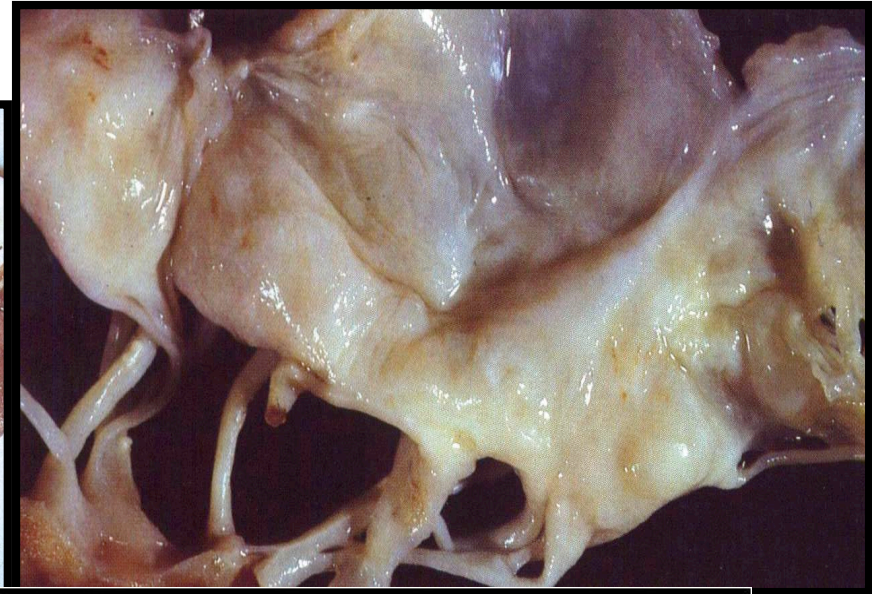


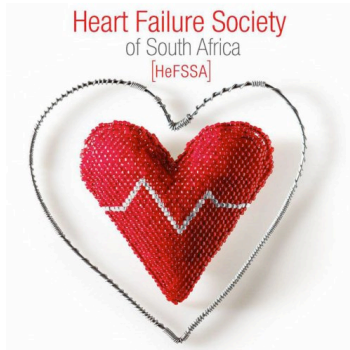
Aortic Stenosis





Mitral Regurgitation - Floppy Mitral Valve





Common Causes of HF

Heart Muscle Disease

- Dilated cardiomyopathy
- Hypertrophic cardiomyopathy
- Restrictive cardiomyopathy
- Acute myocarditis

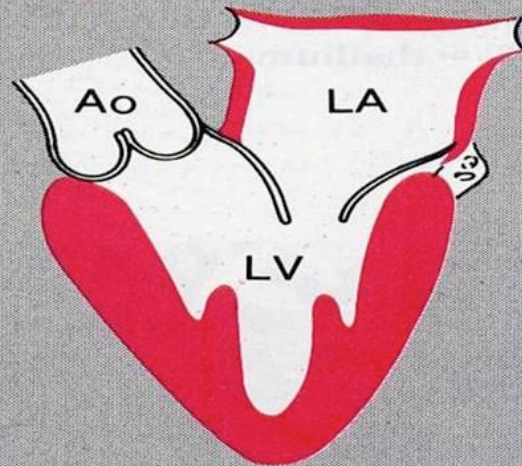
Hypertension

Congenital Heart Disease

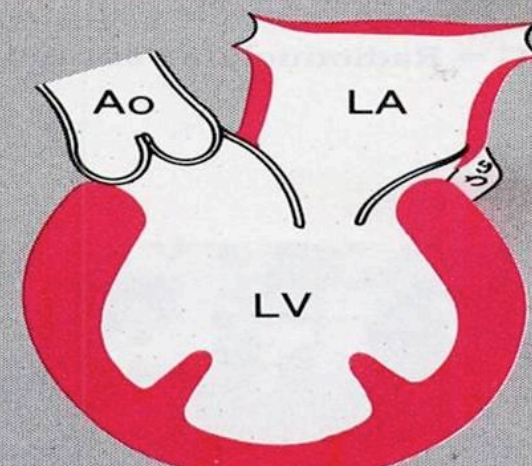
Right Heart failure – acute, chronic



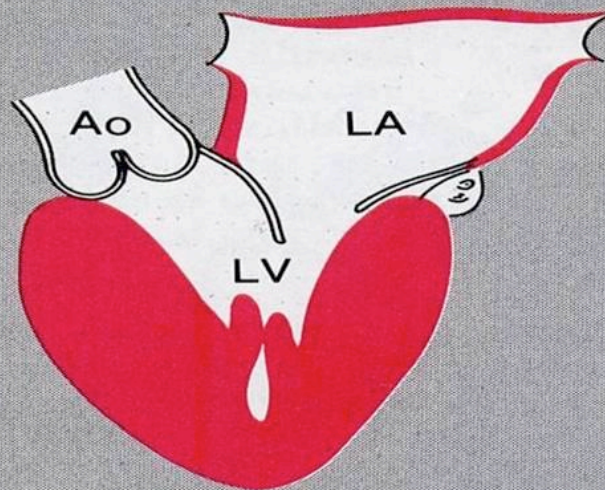
Forms of Cardiomyopathy



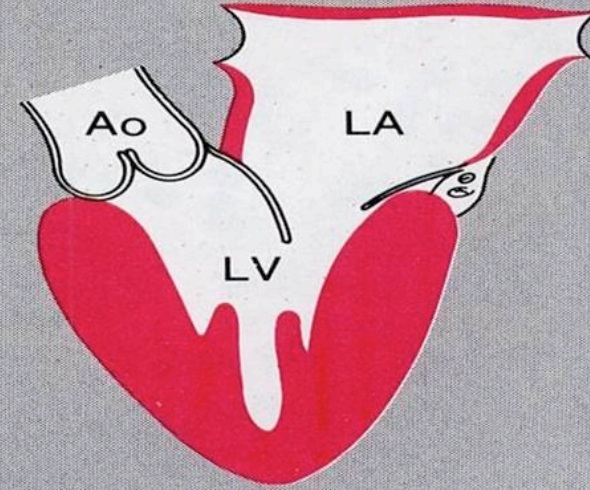
Normal



Dilated cardiomyopathy



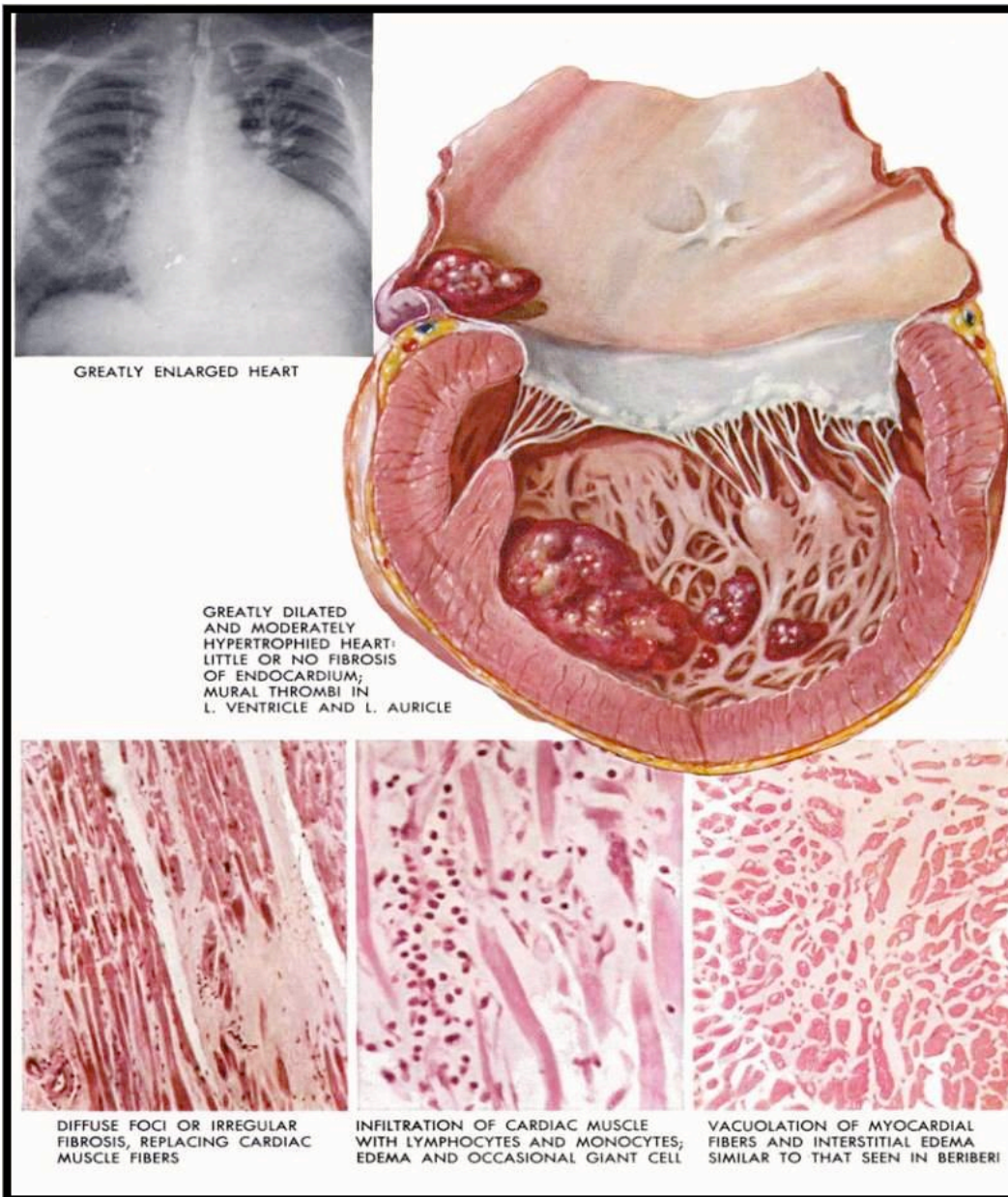
Hypertrophic cardiomyopathy



Restrictive cardiomyopathy

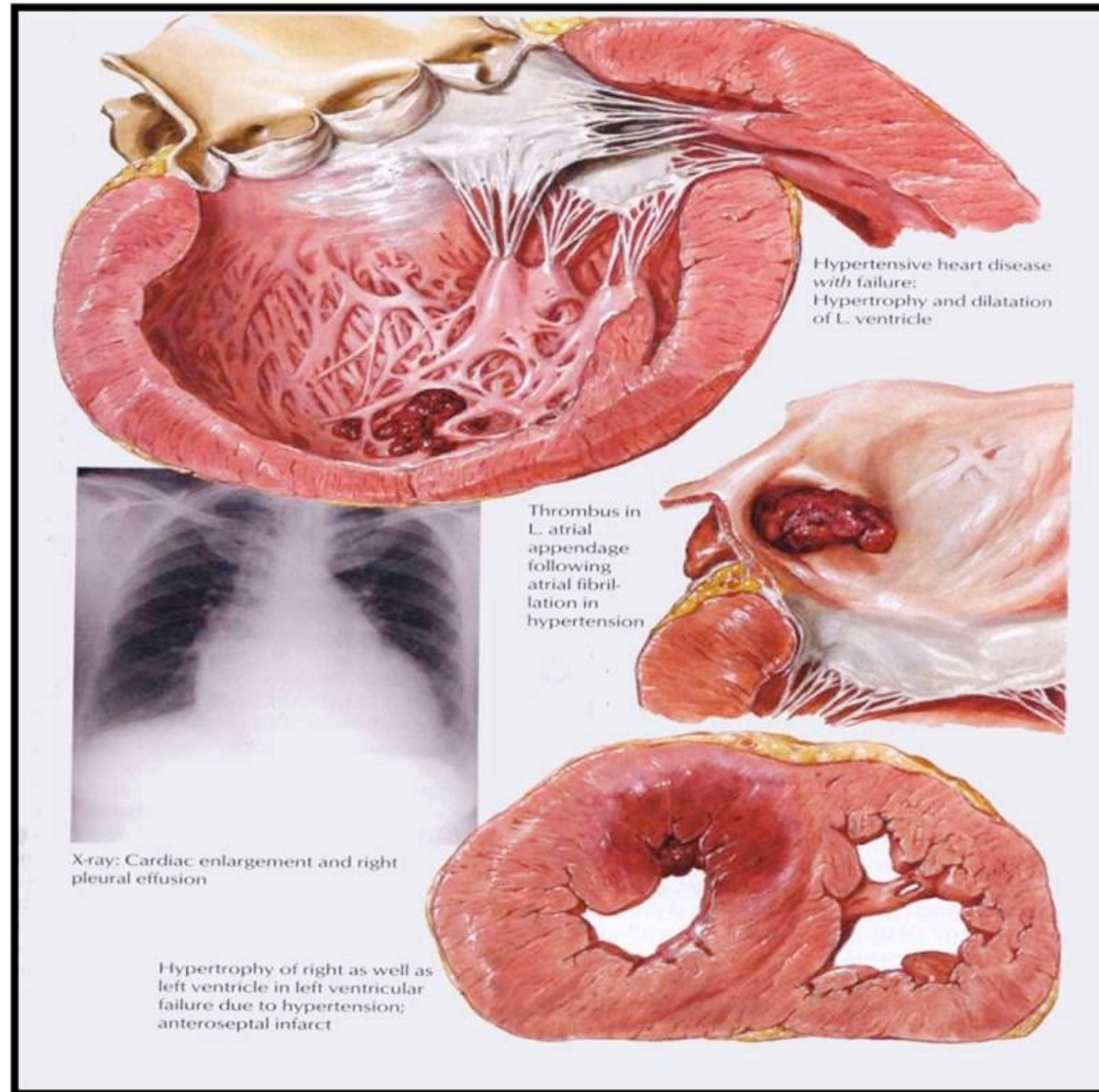


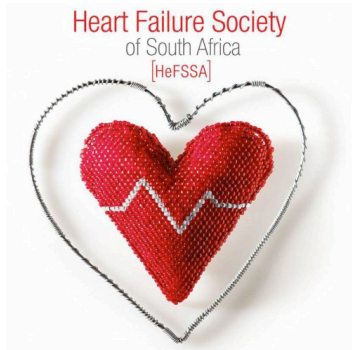
Cardiomyopathy





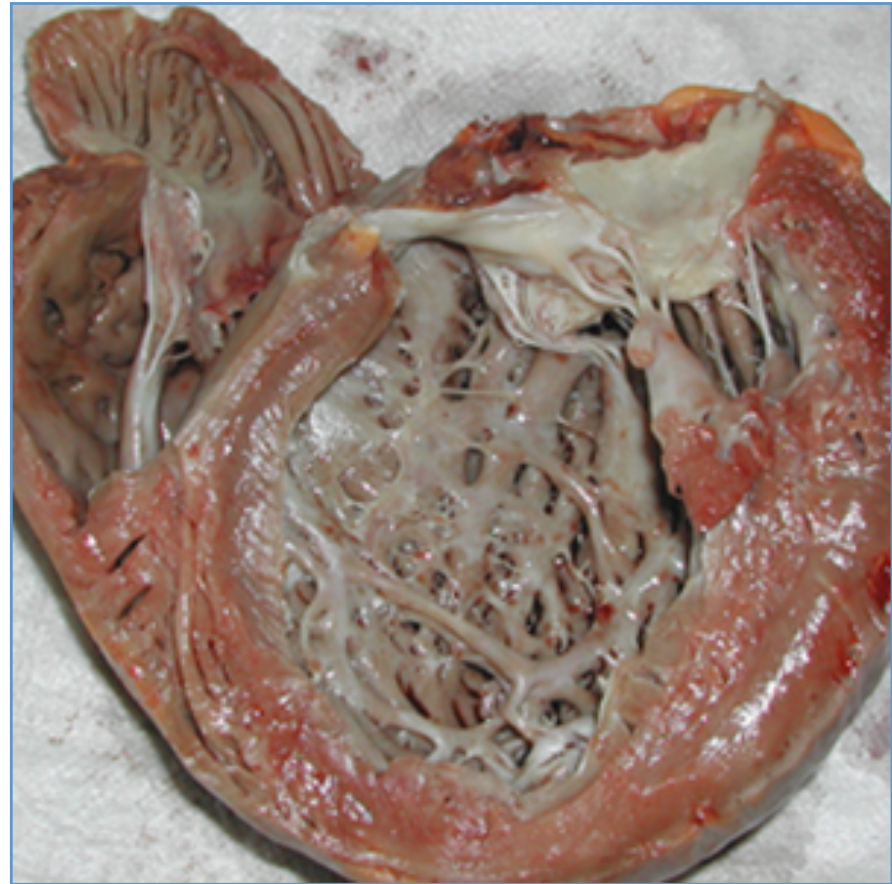
Hypertension and Cardiomyopathy

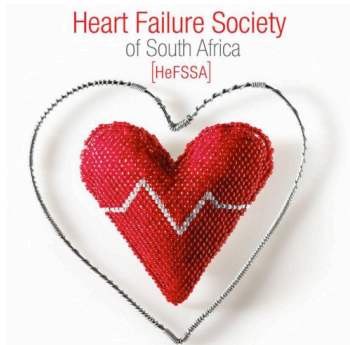




Peripartum

Cardiomyopathy



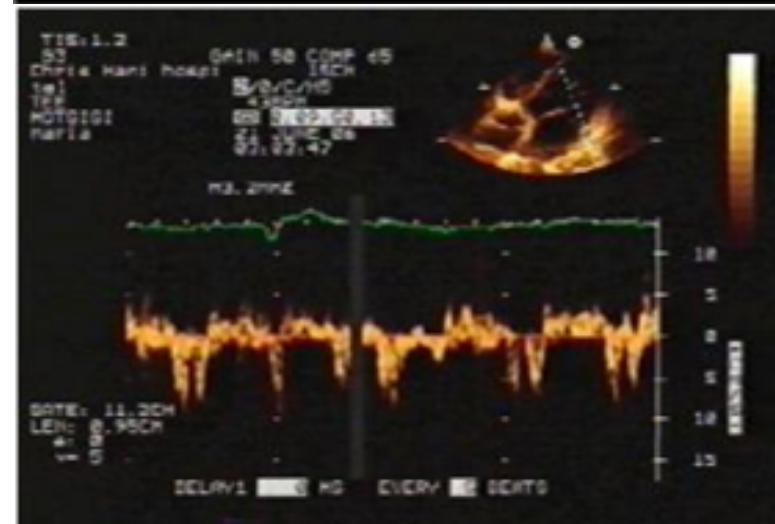
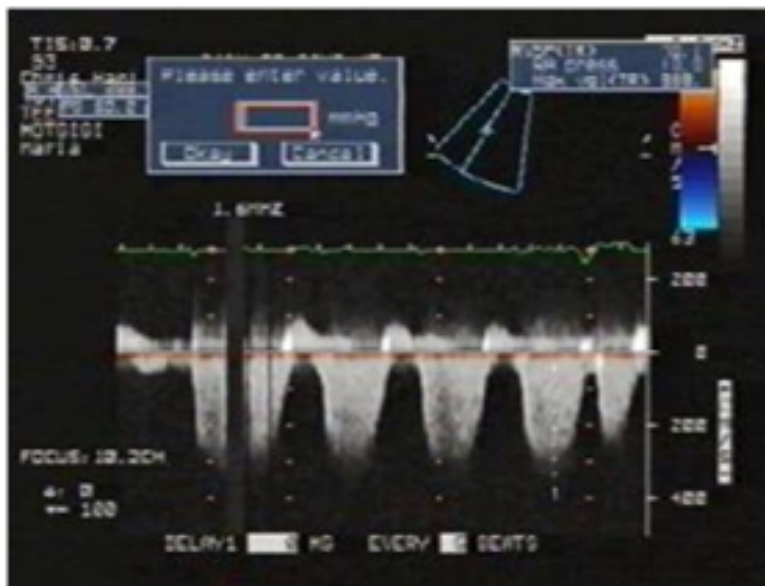
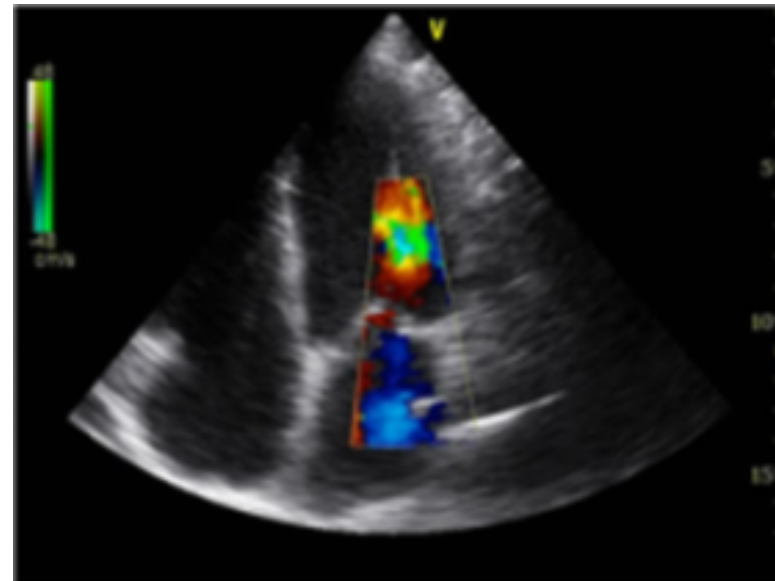
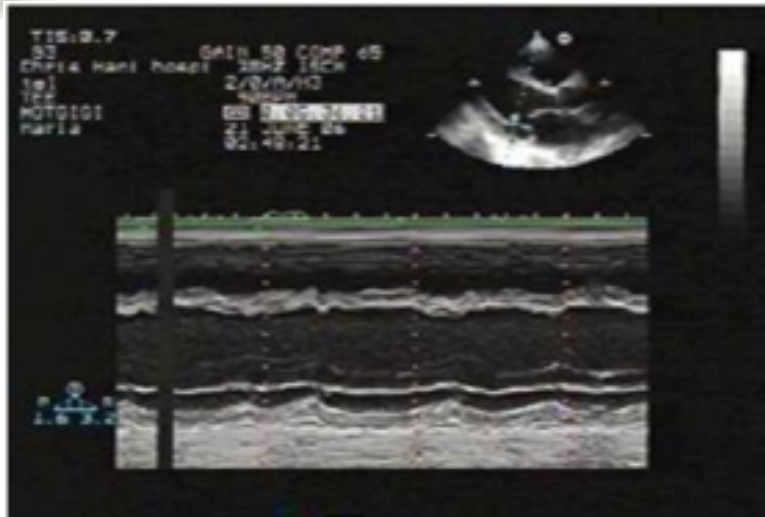


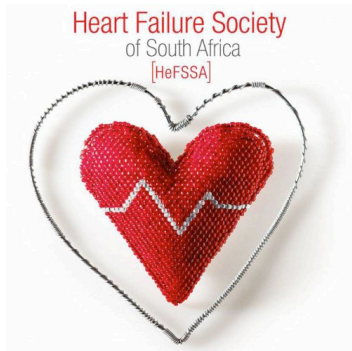
Definition/classification of PPCM

European Society of Cardiology on the classification of cardiomyopathies (<i>Dickstein 2008, Eur J Heart Failure</i>)	A non-familial, non-genetic form of dilated cardiomyopathy associated with pregnancy
AHA Scientific Statement on contemporary definitions and classifications of the cardiomyopathies (<i>Maron 2006, Circulation</i>)	A rare and dilated acquired primary cardiomyopathy associated LV dysfunction and heart failure
Workshop held by the National Heart Lung and Blood Institute and the Office of Rare Diseases (<i>Pearson 2000, JAMA</i>)	<ol style="list-style-type: none"> 1) The development of heart failure in the last month of pregnancy or within 5 months postpartum; 2) The absence of an identifiable cause of heart failure; 3) The absence of recognizable heart disease prior to the last month of pregnancy; LV systolic dysfunction demonstrated by classical echocardiographic criteria. The latter may be characterized as an LV ejection fraction <45%, fractional shortening <30% , or both, with or without an LV end-diastolic dimension >2.7 cm/m² body surface area.
Heart Failure Association of the European Society of Cardiology Working Group on PPCM 2010	PPCM is an idiopathic form of cardiomyopathy presenting with heart failure secondary to left ventricular systolic dysfunction towards the end of pregnancy or in the months following delivery, where no other cases of heart failure is found. It is a diagnosis of exclusion. The left ventricle is not necessarily dilated but the ejection fraction is usually below 45%.

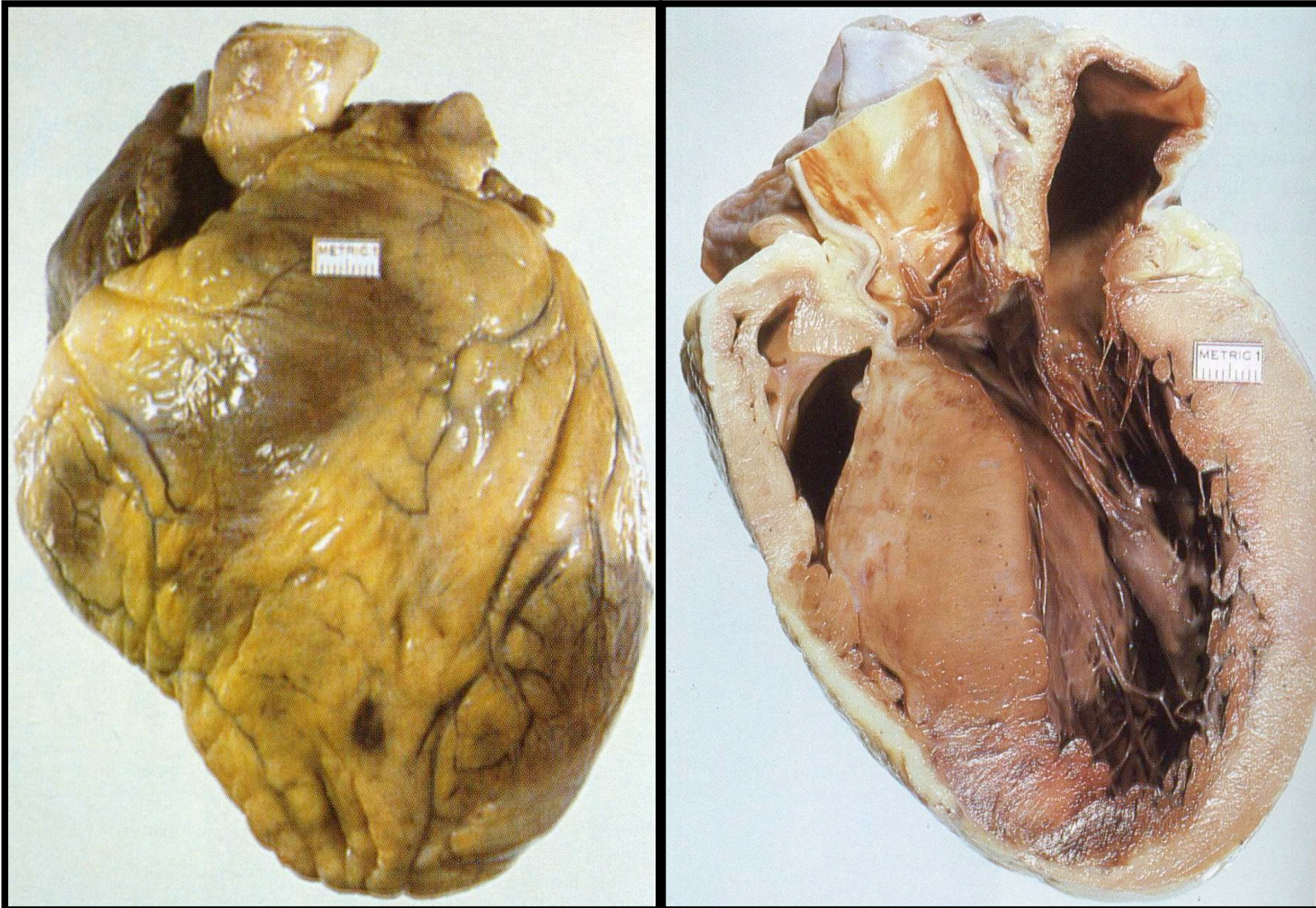


Echocardiography: Left ventricular dysfunction often with mitral regurgitation and pulmonary hypertension



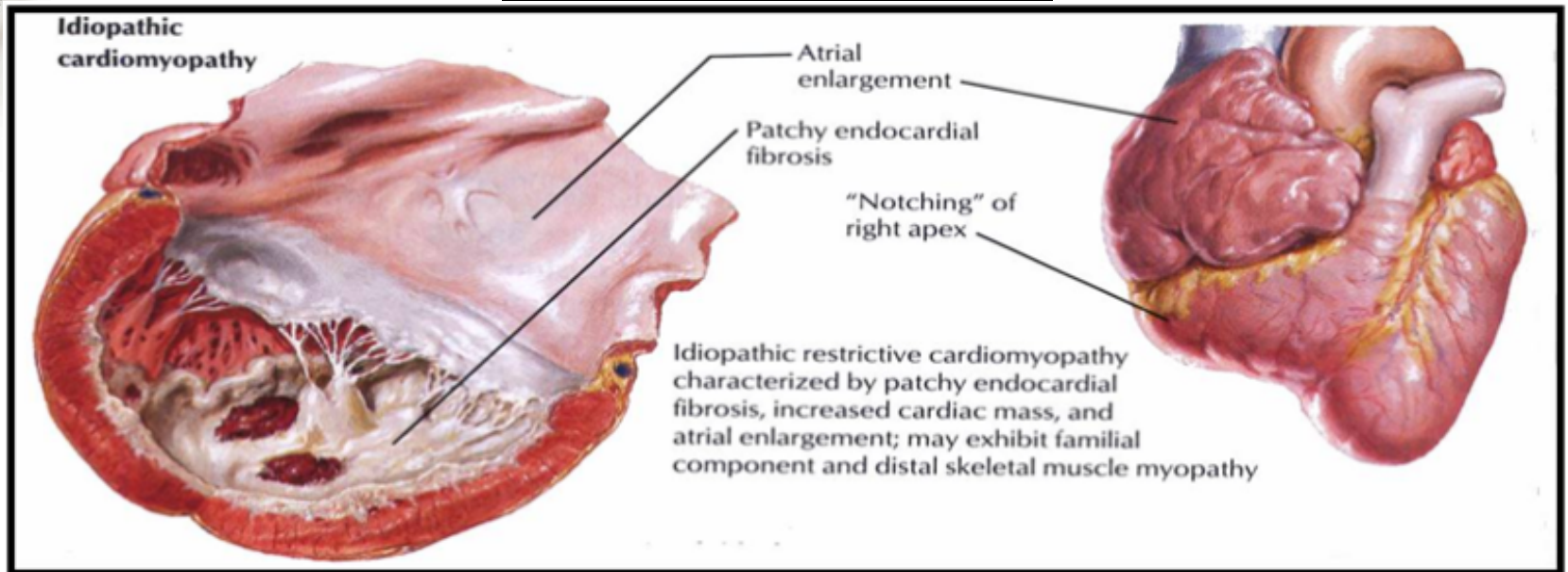


Hypertrophic Cardiomyopathy

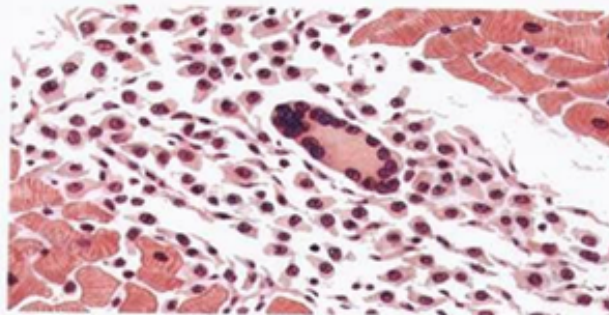
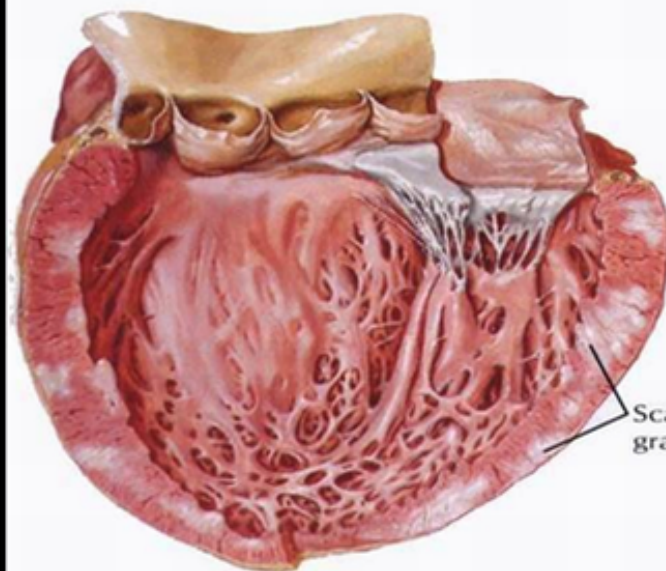




Idiopathic and Infiltrative Causes of Restrictive Cardiomyopathy



Sarcoidosis



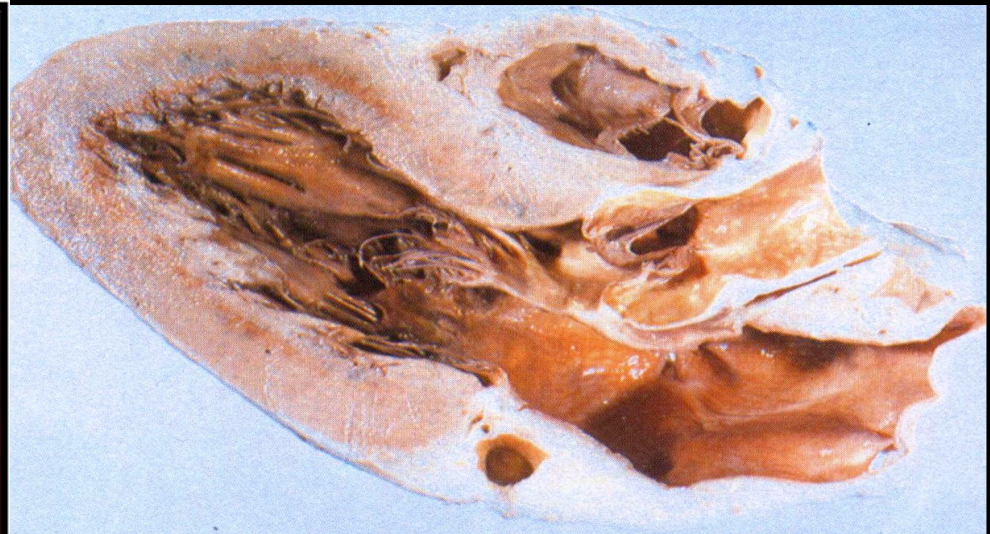
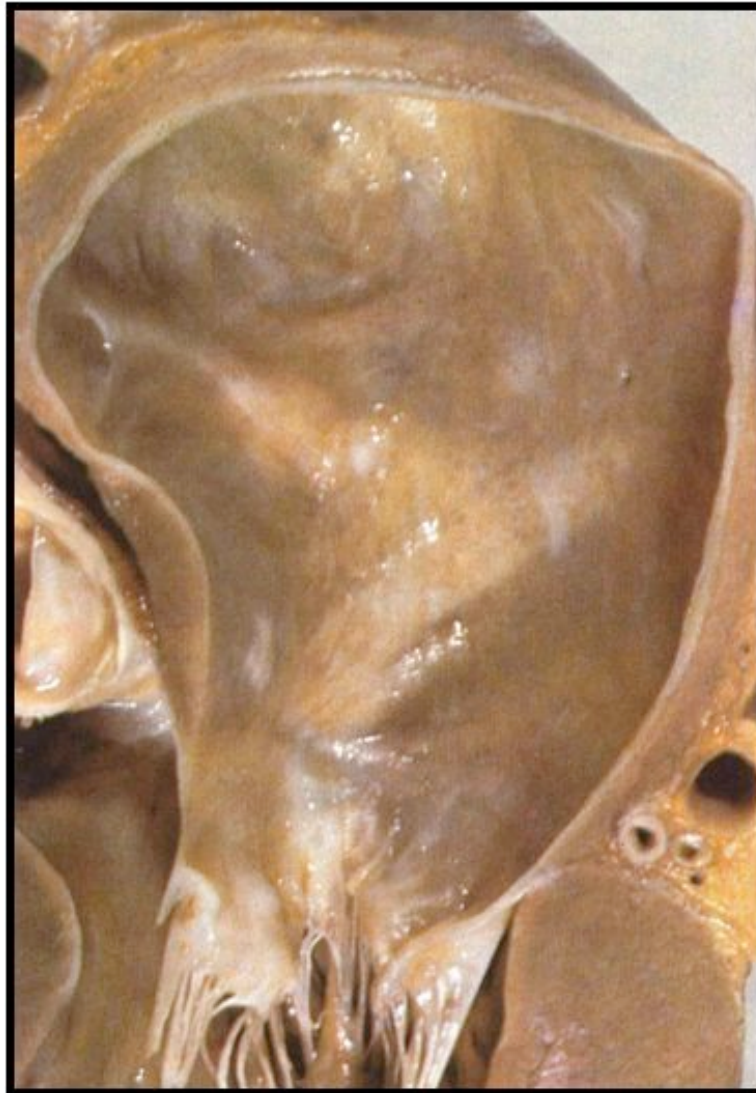
Granuloma with giant cell in heart wall

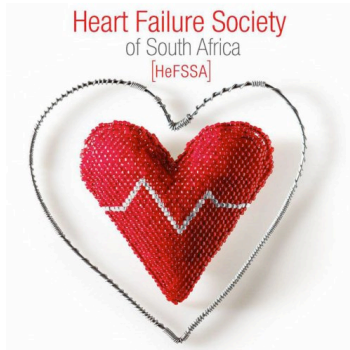
Scattered sarcoid granulomas in myocardium

Sarcoidosis exhibits myocardial involvement in a small percentage of patients with the systemic disease. Granulomas in myocardium lead to diastolic dysfunction, CHF, heart block, ventricular arrhythmias, and sudden cardiac death.



Restrictive Cardiomyopathy – Diastolic (and Systolic) Dysfunction Amyloid





Common Causes of HF

High Output Cardiac Failure

Severe (chronic) anaemia

Thyrotoxicosis

Arterio-venous fistula e.g. Pagets

Beri Beri

Multiple myeloma

Marked obesity, cor pulmonale, polycythaemia,
hypertensive heart disease in pregnancy

Toxic Causes of Heart Failure

Chemotherapeutic agents (anthracyclines)

Alcohol

Tachycardiomyopathy