Acute Myocarditis

- This is an acute inflammatory & potentially reversible condition that may complicate a wide variety of infective, inflammatory and toxic agents. Viral infection is the most common, especially Coxackie and Influenza A & B.
- Susceptibility increased by steroid treatment, immunosuppressive, radiation, previous myocardial damage & exercise.

Clinical features

1. Asymptomatic
2. Tachycardia & abnormal ECG(common but nonspecific)
3. Fulminant heart failure.

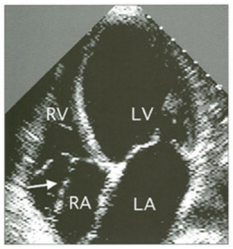
- Plasma troponin and cardiac enzyme elevated & is proportional to the extent of the disease.
- Echo; may reveal left ventricular dysfunction.
- If necessary endomyocardial biopsy.

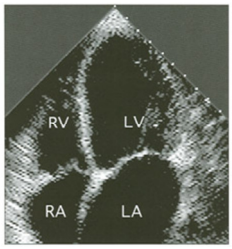
Treatment

- In most patients the disease is self-limited and immediate prognosis is excellent.
- However death may occur due to ventricular arrhythmias or heart failure.
- May be a cause of sudden death in athletes.
- The treatment is supportive and there is no specific anti-microbial agent in majority of case.

Giant cell Myocarditis

- Is a rare disease characterized by the presence of multinucleated giant cell in the myocardium, the etiology is not known. The prognosis is poor with early implantation is indicated.





Cardiomyopathy

Dilated Cardiomyopathy:

- Characterized by dilatation and impaired contraction of the left ventricle.
- The most important differential diagnosis is IHD and alcoholic cardiomyopathy.
- In 25 % of cases inherited as autosomal dominant trait.
- In others an autoimmune reaction to viral myocarditis is thought to be the main etiological factor in a substantial subgroup of patient.
- A similar mechanism is thought to be responsible in patients with advanced HIV infection.
- Most patients present with heart failure, arrhythmia, thromboembolism and sudden death are common.
- Chest pain frequent.
- ECG show non-specific change. Echo useful for diagnosis. Treatment aimed to control heart failure, in late stage cardiac transplant.
- Prognosis variable.

Hypertrophic Cardiomyopathy

- This is the commonest form, characterized by inappropriate myocardial hypertrophy with mal-alignment of the myocardial fibers.
- The hypertrophy may be generalized, localized or apical.
- Heart failure may develop as a result of stiff non complaint chambers impeding diastolic filling, dynamic out flow obstruction, exertional angina & shortness of breath, arrhythmias and sudden death. The condition is inherited as autosomal dominant.

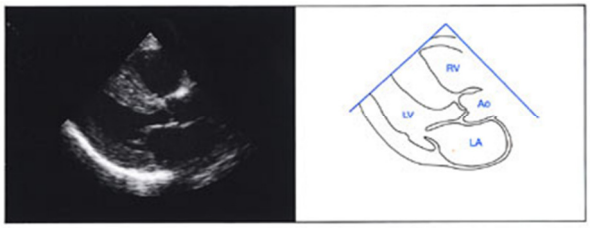
Clinical features

The *symptoms* and signs are similar to those of aortic stenosis:

1. Angina on effort 2. Dyspnea on effort 3. Syncope on effort 4. Sudden death

Signs:

1. Jerky pulse.
2. Double apical beat.
3. Mid systolic murmur at aortic area (augmented by standing up, inotropes and vasodilator).
4. Pansystolic murmur at apex.
   - ECG show evidence of left ventricular hypertrophy .Echo is usually diagnostic .The natural history is variable but clinical deterioration is often slow. Sudden death occurs in 2-4 % yearly and typically occurs during or just after physical activity. Ventricular arrhythmias are thought to be responsible for these deaths.



Risk Factors for Sudden Death

1. Family history of sudden death.
2. Recurrent syncope.
3. Previous history of cardiac arrest.
4. Exercise induced hypotension.
5. Marked increase in left ventricular wall thickness.

- Beta-blocker and rate lowering calcium channel blocker can help to relieve angina and sometimes prevent syncope but not the prognosis.
- Arrhythmias are common and often respond to amiodarone.
- Dual-chamber pacing and surgery are useful in selected group of patient to relieve outflow obstruction.
- ICD for those with high risk for sudden death.

Arrhythmogenic RV Dysplasia

- This disease inherited as autosomal dominant trait, characterized by fibro fatty infiltration of RV.
- It characterized by ventricular arrhythmias and sudden death.
- The ECG typically shows inverted T waves in the right pericardial leads.
- MRI is useful diagnostic tool and is used to screen the first degree relatives of patients.
- Patients with high risk of sudden death should get ICD.

Restrictive Cardiomyopathy

- Characterized by increased ventricular stiffness, impaired ventricular filling, left atrial hypertrophy, dilatation & AF.
- Amyloidosis one of the most common causes in UK, other causes include amyloidosis, glycogen storage disease & idiopathic form.
- Diagnosis may be very difficult, diagnostic tools include Doppler echo, CT or MRI and endomyocardial biopsy.
- Treatment is symptomatic but the prognosis is usually poor and cardiac transplantation may be indicated.