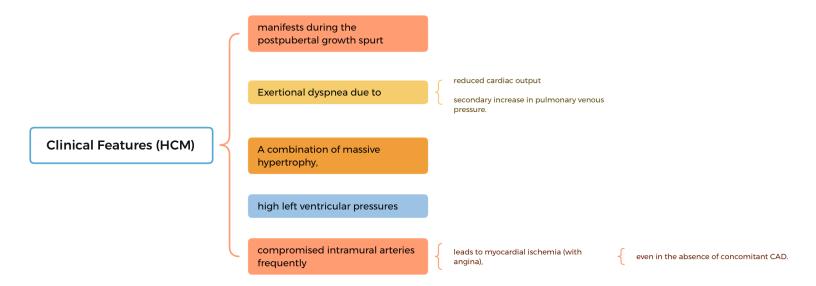
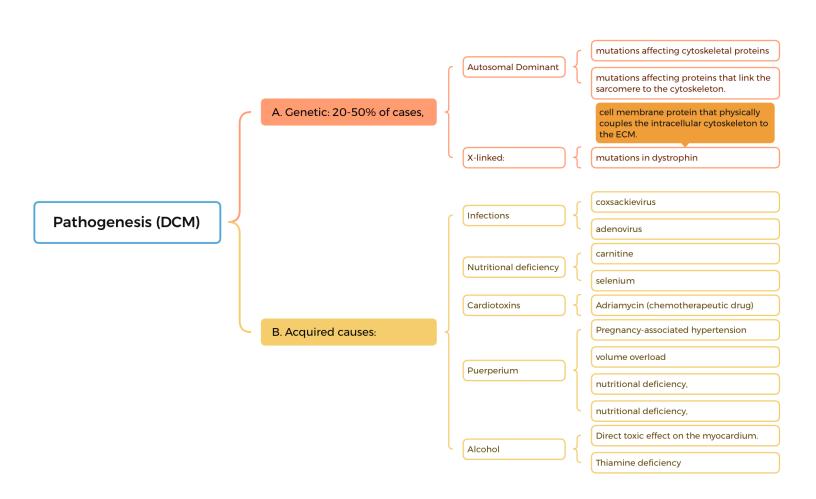
### Cardiomyopathies

Cardiomyopatnies					
	Characterized	Information	Pathogenesis		
Dilated cardiomyopathy (DCM) (90% of cases)	1- poorly contracting 2-dilated left ventricle 3-normal or reduced left ventricular wall thickness	1-most common cause of Congestive Cardiac Failure (CCF) 2-Occurs more frequently(men+ages 20-60 years) 3-Valvular and vascular lesions that can cause cardiac dilation secondarily are absent.( (e.g. atherosclerotic coronary artery disease) 4-Cardiac transplantation is the only definitive treatment.	1- Genetic causes: a.Autosomal Dominant 2-Acquired causes		
Hypertrophic cardiomyopathy (HCM)	1-Characterized by massive left ventricular hypertrophy associated with reduced stroke volume due to a) impaired diastolic filling b) overall smaller chamber size	<ul> <li>1- In almost one third of cases of sudden cardiac death in athletes younger than 35 years of age, the underlying cause is HCM.</li> <li>2-increased left ventricular (LV) wall thickness (in a non-dilated chamber) that is not explained by abnormal loading conditions</li> <li>3Typically associated with a)defective diastolic filling, b)ventricular outflow obstruction</li> <li>4-Systolic function usually is preserved in HCM</li> <li>5-the myocardium does not relax and therefore exhibits primary diastolic dysfunction</li> </ul>	1-Marked by massive myocardial hypertrophy without ventricular dilation 2-		
Restrictive cardiomyopathy(RCM)	1-primary decrease in ventricular compliance, resulting in impaired ventricular filling during diastole.  2-	Commonest forms of restrictive cardiomyopathy include:  1.Cardiac Amyloidosis a) Caused by the deposition of extracellular proteins (amyloid) b) Can occur in the setting of: 1-Systemic Amyloidosis (e.g., Multiple Myeloma). 2-Restricted to the heart (e.g., Senile Cardiac Amyloidosis)  2. Endomyocardial fibrosis: A)Causes 1-Nutritional deficiencies. 2-Inflammation (helminthic infections with hypereosinophilia) B)Characterized 1-dense diffuse fibrosis of the ventricular endocardium and subendocardium, often involving the tricuspid and mitral valves 2-It's principally a disease of children and young adults. 3-The fibrous tissue markedly diminishes the volume and compliance of affected chambers, resulting in a restrictive physiology.	1-Idiopathic 2-Associated with systemic diseases that affect the myocardium, e.g.: A) radiation fibrosis B) amyloidosis C) sarcoidosis D) products of inborn errors of metabolism.		

Cardiomyopathies					
	Histological features	Gross Morphology	Clinical features		
Dilated cardiomyopathy (DCM) (90% of cases)	1-Myocytes exhibit hypertrophy with enlarged nuclei.  2-Interstitial and endocardial fibrosis	1-The heart assumes a globular shape 2-Ventricular chamber dilatation 3-Atrial enlargement 4-Mural thrombi are often present and may be a source of thromboemboli	1-The fundamental defect in DCM is ineffective contraction. 2-It typically manifests with signs of slowly progressive CHF, including; A)Dyspnea, easy fatigability, and poor exertional capacity. B)Secondary mitral regurgitation C)Abnormal cardiac rhythms. D)Embolism from intracardiac (mural) thrombi		
Hypertrophic cardiomyopathy (HCM)	A) Myocyte hypertrophy.     B) Myocyte disarray. (haphazard)     C) Interstitial (pericellular-type) fibrosis (asterisk).     D) Endocardial fibrosis (double-headed arrow)		Major clinical problems include 1-Atrial fibrillation with mural thrombus formation. 2-Ventricular fibrillation leading to sudden cardiac death. 3-CHF		
Restrictive cardiomyopathy(RCM)					



Presented with xmind



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Myocarditis				
Definition	an inflammatory disease of the myocardium caused by different infectious and noninfectious triggers.			
Classified according to the cause into:	<ul> <li>A. Infectious: Viral infections: coxsackie viruses A and B, enteroviruses, Cytomegalovirus (CMV), human immunodeficiency virus (HIV).</li> <li>B. Noninfectious: <ol> <li>Systemic diseases of immune origin, such as systemic lupus erythematosus and polymyositis.</li> </ol> </li> <li>Drug hypersensitivity reactions (hypersensitivity myocarditis)</li> </ul>			
Gross Morphology	1- Acute myocarditis: the heart may appear normal or dilated. 2- Advanced stages: the myocardium typically is flabby and pale and hemorrhagic areas. 3- Mural thrombi may be present.			
Histological features	1-Edema and myocyte injury. 2- Interstitial inflammatory infiltrates: A) Lymphocytic type: numerous lymphocytes. B) Hypersensitivity myocarditis: abundant eosinophils. C) Giant cell myocarditis: multinucleate giant cells			

# **Cardiac Tumors**

Primary tumors:	Secondary Cardiac Tumors
<ul> <li>1-Uncommon; and usually benign.</li> <li>2-In descending order of frequency, the most common tumors are:</li> <li>A) Myxomas (most common).</li> <li>B) Fibromas</li> <li>C) Lipomas</li> <li>D) Papillary fibroelastomas.</li> <li>E) Rhabdomyomas (most frequent in infants and children, often regress spontaneously).</li> <li>F) Angiosarcomas (most common primary malignant tumor of the heart).</li> </ul>	1-The most frequent metastatic tumors involving the heart are:  A) Lung Carcinomas.  B) Brest Carcinoma.  C) Melanomas  D) Leukemia  E) Lymphoma  2- Metastases can reach the heart and pericardium by:  A) Lymphatic extension.  B) Hematogenous seeding  C) Direct contiguous extension.  D) Venous extension

## **Cardiac Tumors**

### Myxoma;

- 1-Most common primary tumors of the heart.
- 2-Usually single in sporadic forms and mainly located in the left atrium.
- 3- May cause sudden death, usually due to mitral valveobstruction.
- 4- Echocardiography is the diagnostic modality of choice.
- 5- Surgical resection is almost uniformly curative.
- 6-Morphology:
- A) Grossly: appear as sessile or pedunculated mass.
- B) Microscopic: neoplastic cells within myxoid stroma
- 7-Clinical Manifestations:
- A) Valvular "ball-valve" obstruction
- B) Embolization
- C) Fever and malaise

#### Carcinoid Heart Disease:

- 1- Results from bioactive compounds such as serotonin released by carcinoid tumors (tumor arising from Neuroendocrine cells).
- 2- Cardiac lesions typically do not occur until there is a massive hepatic metastasis (the liver normally inactivates circulating mediators before they can affect the heart).
- 3- Classically, the endocardium and valves of the right heart are primarily affected (they are the first cardiac tissues bathed by the mediators).
- 4- The mediators elaborated by carcinoid tumors include:
- A) serotonin (5-hydroxytryptamine)
- B) kallikrein
- C) bradykinin
- D) histamine
- E) prostaglandins
- F) tachykinins
- 5-Systemic manifestations include:
- A) Flushing
- B) Diarrhea
- C) Dermatitis
- D) Bronchoconstriction