

# HYPERTROPHIC CARDIOMYOPATHY

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# Plan:

- Classification
- Definition of disease
- Etiology
- Morphology:
  - macro image;
  - micro image.
- Complications
- Conclusion
- Reference

# Cardiomyopathies

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graph TD; A[Cardiomyopathies] --> B[PRIMARY]; A --> C[SECONDARY]; B --> D[Dilated cardiomyopathy]; B --> E[Hypertrophic cardiomyopathy]; B --> F[Restrictive cardiomyopathy]; C --> G["found at:  
-intoxication;  
-infections;  
- Hereditary and acquired metabolic diseases;  
- GIT diseases; etc."];
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The diagram is a hierarchical flowchart. At the top is a box labeled 'Cardiomyopathies'. A line from this box branches into two boxes: 'PRIMARY' on the left and 'SECONDARY' on the right. From the 'PRIMARY' box, a line branches into three boxes: 'Dilated cardiomyopathy', 'Hypertrophic cardiomyopathy', and 'Restrictive cardiomyopathy'. From the 'SECONDARY' box, a line leads to a larger box containing a list of conditions: 'found at: -intoxication; -infections; - Hereditary and acquired metabolic diseases; - GIT diseases; etc.'

PRIMARY

SECONDARY

Dilated  
cardiomyopathy

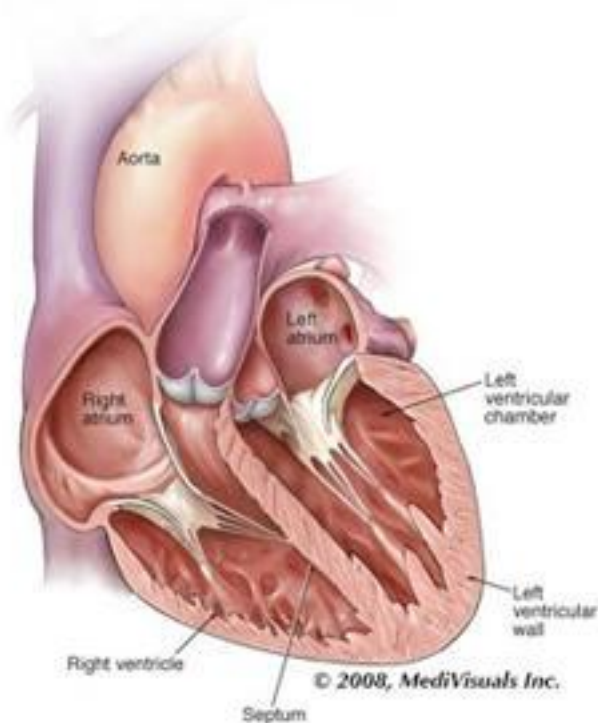
Hypertrophic  
cardiomyopathy

Restrictive  
cardiomyopathy

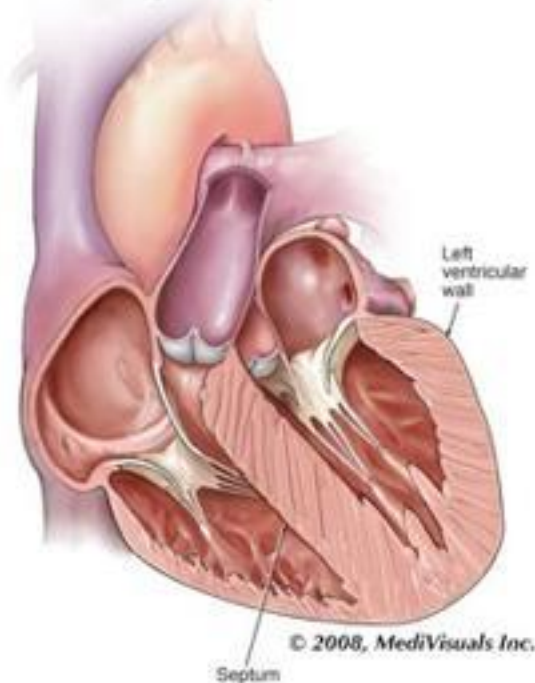
found at:  
-intoxication;  
-infections;  
- Hereditary and  
acquired metabolic  
diseases;  
- GIT diseases; etc.

- **Hypertrophic cardiomyopathy** – is a primary myocardial disease, characterized by local or symmetrical ventricular hypertrophy, diastolic dysfunction, arrhythmias and high risk of sudden death.

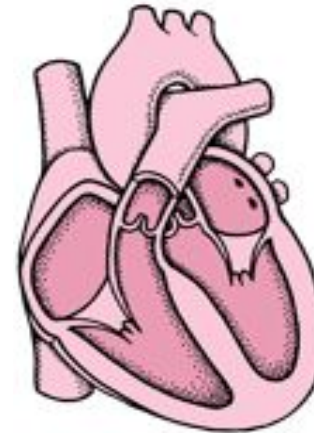
Normal Heart



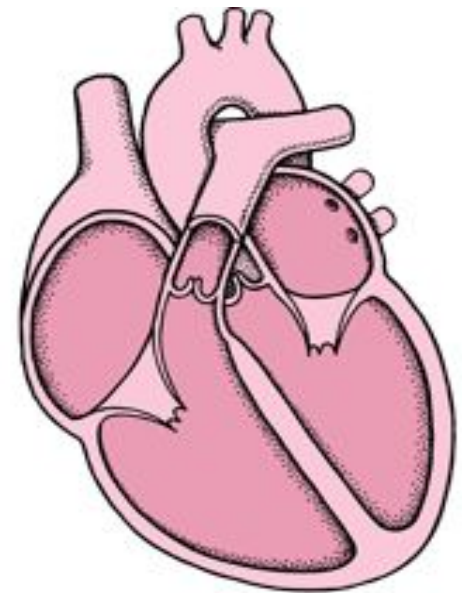
Hypertrophic  
Cardiomyopathy



*It is characterized by myocardial hypertrophy, abnormal diastolic filling, and in about one third of cases, intermittent ventricular outflow obstruction.*

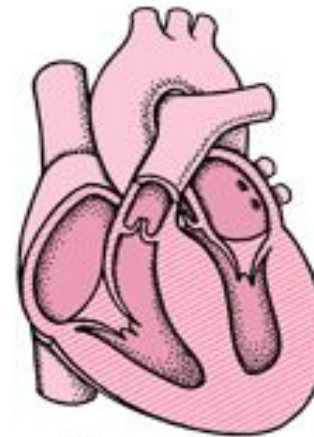


**Normal**



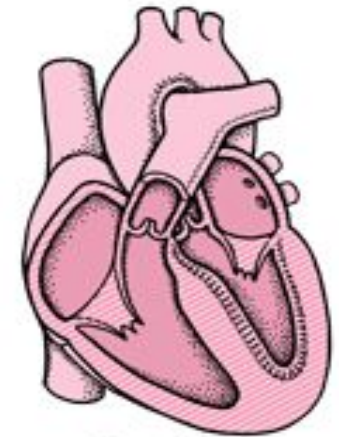
**Dilated  
Cardiomyopathy**

The ventricles enlarge.



**Hypertrophic  
Cardiomyopathy**

The walls of the ventricles thicken and become stiff.



**Restrictive  
Cardiomyopathy**

The walls of the ventricles become stiff, but not necessarily thickened.

# Etiology

**Hypertrophic  
cardiomyopat  
hy**

Inherited

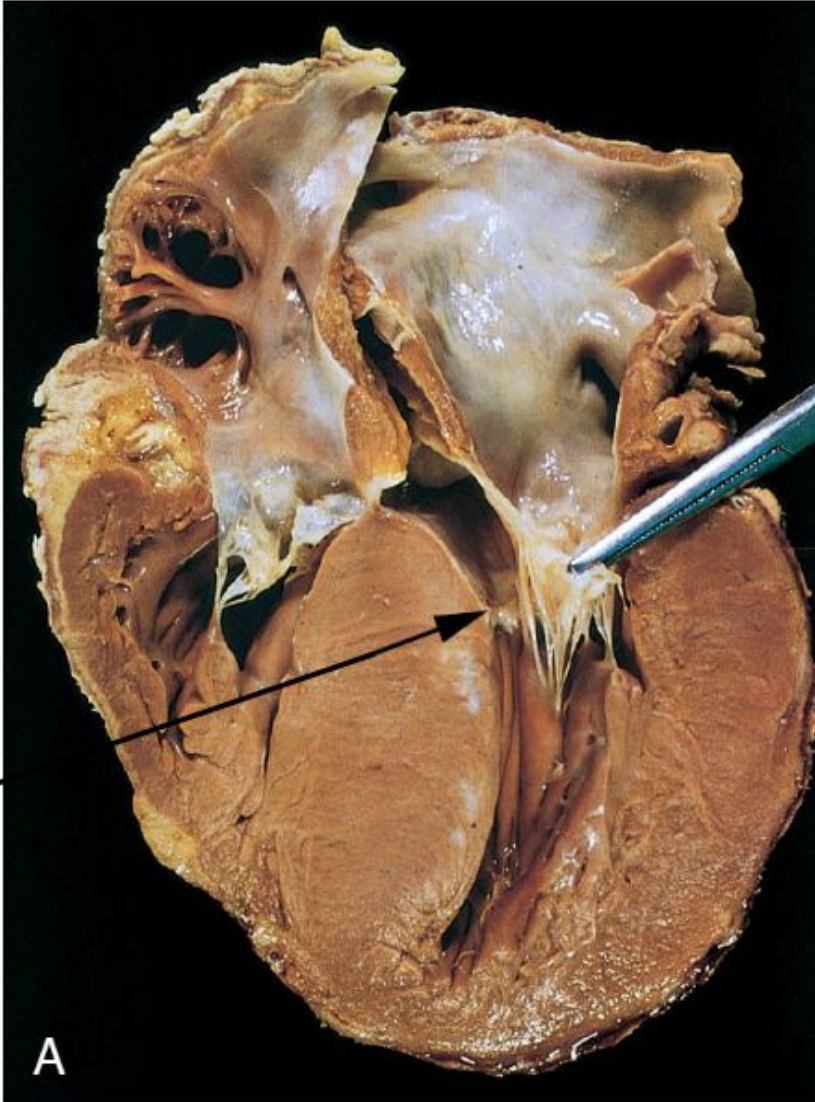
by abnormal genes  
(gene mutations) that  
cause the heart  
muscle to grow  
abnormally thick

**Obstructi  
ve**

have a form of the disease in which  
the wall (septum) between the two  
bottom chambers of the heart  
(ventricles) becomes enlarged and  
impedes blood flow out of the  
heart.

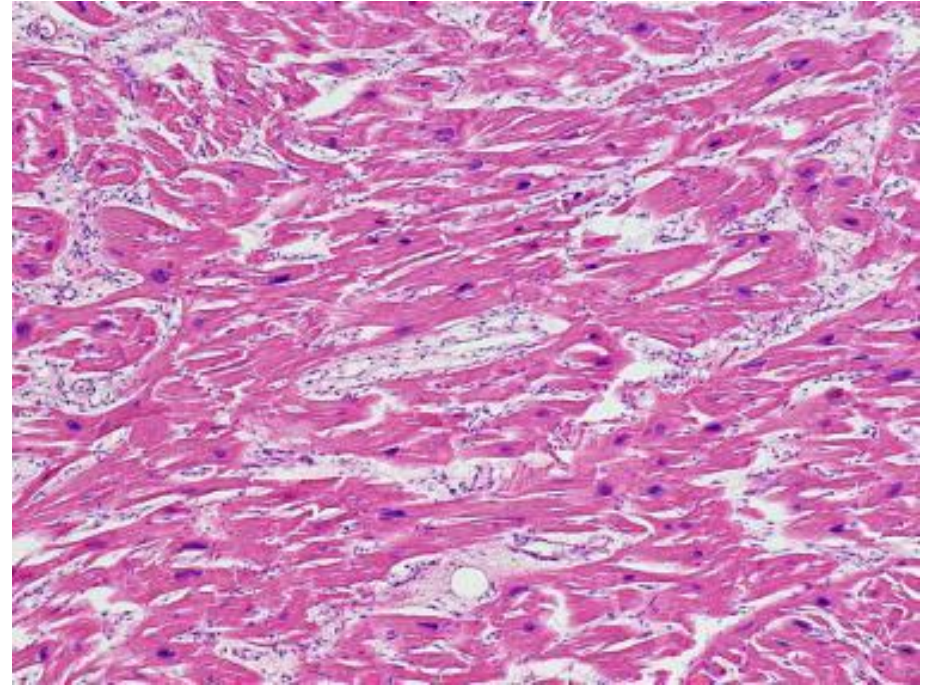
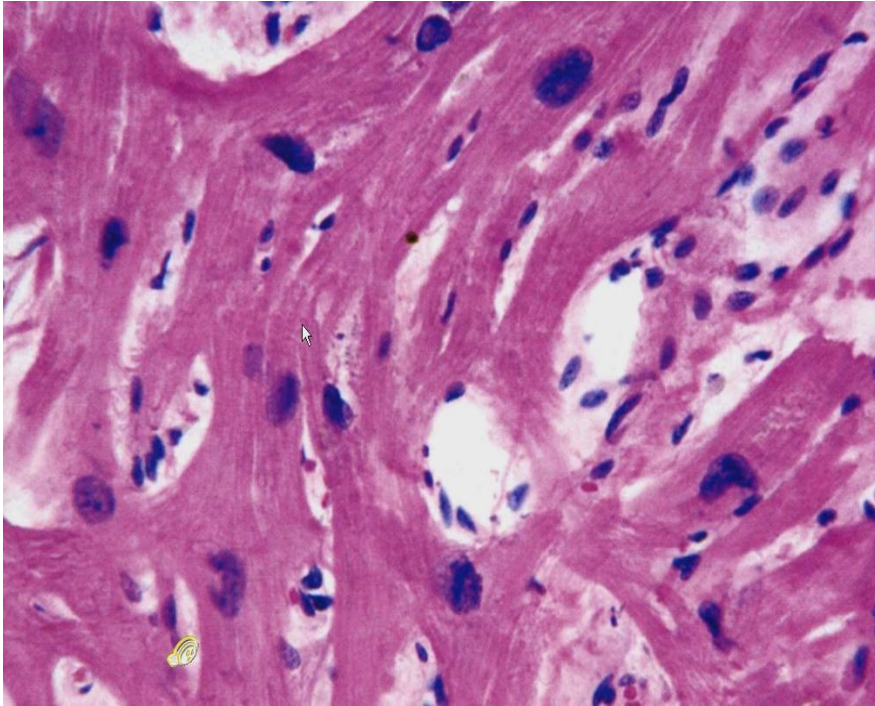
**Non-obst  
ructive**

significant blocking of blood flow.  
However, the heart's main pumping  
chamber (left ventricle) may  
become stiff, reducing the amount  
of blood the ventricle can hold and  
the amount pumped out to the  
body with each heartbeat



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- The ventricular cavity loses its usual round-to-ovoid shape and may be compressed into a ‘banana-like’ configuration by bulging of the ventricular septum into the lumen.
- Often present are endocardial thickening or mural plaque formation in the left ventricular outflow tract and thickening of the anterior mitral



- Extensive myocyte hypertrophy with transverse myocyte diameters frequently greater than  $40\ \mu\text{m}$  (n:  $\sim 15\ \mu\text{m}$ )
- Haphazard disarray of bundles of myocytes, individual myocytes, and contractile elements in sarcomeres within cells
- Interstitial and replacement fibrosis



# Literature:

- V.Kumar, A.K. Abbas, S.N. Fauso. Pathologic Basis of Disease, 7<sup>th</sup> edition, 2008 – 1525 p.
- V.V.Serov, V.S.Paukov. Pathological anatomy, 2010 – 800 p.
- R.A.Cooke, B.Stewart. Colour Atlas of Anatomical Pathology, 3<sup>rd</sup> edition, 2004 – 300 p.



Thank you for  
attention!