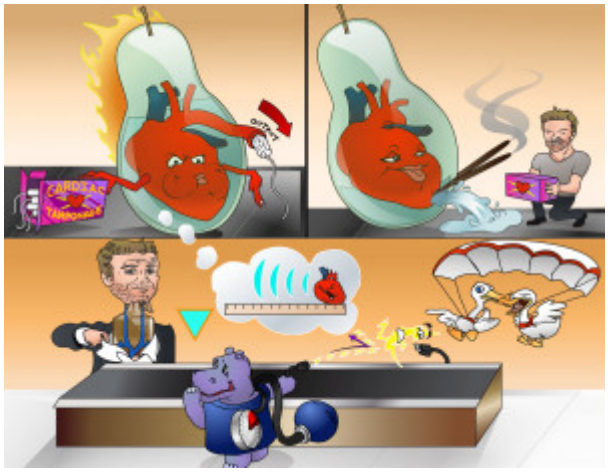
Cardiac Tamponade

Cardiac tamponade is a condition which occurs due to fluid in the pericardial sac. It leads to clinical manifestations of hypotension, jugular venous distention and distant heart sounds. Effective treatment is pericardiocentesis.



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Mechanism

Fluid in the Pericardial Sac
Fluid in Pear-heart Sac
Cardiac tamponade occurs due to fluid in the pericardial sac, and leads to increased intrapericardial pressure. Causes of this include trauma, rupture and iatrogenic etiology.

Pericarditis
Pear-heart-on-fire
This is inflammation of the pericardial sac that is commonly due to viral infection. It can lead to accumulation of fluid and cardiac tamponade. It is one of the most common causes of cardiac tamponade. Other causes include trauma.

Decreased Cardiac Output
Down-arrow Heart Output-measurement
The fluid surrounding the heart compresses it and leads to decreased diastolic filling of the ventricles which leads to decreased cardiac output and hypotension.

Signs/Symptoms

Beck's Triad
Beckham's Triangle
This is the classic triad of hypotension, JVD and distant heart sounds. It occurs in 10-40% of patients.

Hypotension
Hippo-BP
Hypotension occurs due to decreased cardiac output.

Jugular Venous Distention (JVD)
Jug Veins Bulging
Increased intrapericardial pressure leads to increased central venous pressure. Thus, increased JVD can be seen because of decreased diastolic filling capability.

Distant Heart Sounds
Distant Heart Soundwaves
Fluid in the pericardial space muffles heart sounds, leading to decreased heart sounds.

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Pulsus Paradoxus

Parachuting Pair-of-ducks

This is a drop of >10mmHg in systolic blood pressure on inspiration. It occurs due to decreased diastolic filling and bulging of the inter ventricular septum into the left ventricle.

Electrical Alternans

Electricity Alters-direction

This is seen on EKG and as alternating amplitudes of QRS complexes. It is possibly due to movement of the heart within the pericardial fluid.

Treatment

Pericardiocentesis

Puncturing Pear-heart-with-incense

Evacuating the fluid in the pericardial space is done via needle drainage. This is called pericardiocentesis.

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