

4. Complications of Acute MI

Mechanical Complications:

A. Papillary Muscle Rupture

- Posteromedial papillary muscle most likely to rupture or dysfunction secondary to a single blood supply from the PDA. 90% of all pap muscle ruptures are of this type. (The ant/lat pap muscle gets dual supply from the LAD and CX arteries)
- Therefore, it is the posteromedial papillary muscle that ruptures with IWMI'S
- Can occur with single vessel disease, and small MI's (presumably because there is increased shearing force on affected muscle if the remainder of LV function is normal).
- Balloon pump and surgery is the best way to acutely treat these patients

B. LV Free Wall Rupture

- The most common cause of in-hospital death post MI.
- Predisposing factors are those that would otherwise suggest good prognosis such as single vessel disease and good LV function (as above with pap muscle rupture).
- Usually occurs within 2 weeks of MI.
- Operative repair is the only way to treat, but they usually don't survive long enough.

C. Septal Rupture

- Postero-septal rupture worse prognosis than antero-septal. Occurs within 2 wks of MI.
- Balloon pump and acute surgical repair is best treatment.

RV Infarction:

- Hallmarks are hypotension, clear lungs, and elevated JVP.
- Rarely occurs without evidence of an acute IWMI.
- Diagnosis is made with EKG 1 mm or more of ST elevation in right-sided R-V4 lead.
- Treatment is with VOLUME and rarely with pressor support.
- Usually will improve within about 72 hours.

Heart Block:

A. Anterior MI's

- Usually causes block secondary to septal injury, resulting in an infra-nodal block.
- This usually manifests in 2nd degree type 2, or 3rd degree heart block.
- Therefore, should treat with electronic pacemaker

B. IWMI (Bezold-Jarisch Reflex)

- Block secondary to activation of abnormal cardiovascular reflexes or ischemia of the AV node, causing bradycardia and high degree block
- Usually 1st degree, or 2nd degree type 1 heart block, occasional complete heart block
- Conservative approach to heart block from IWMI (Atropine), because the conduction system will often repair itself within a few days.

Arrhythmias:

A. PSVT- occurs in 2-11% of acute MI's, aggressive to decrease demand on myocardium

B. A-fib/flutter- occurs 1-3% of time with acute MI's. Unless unstable just rate control.

C. Junctional Rhythms- accelerated junctional rhythm are often transient, and usually occur within the 1st 48 hours of the MI. The prognostic implication of these rhythms is unknown.

D. Ventricular rhythms

- PVC's- little prognostic significance, treatment does not change mortality.
- Accelerated Idioventricular rhythm- same as PVC's
- VT- if sustained, then needs treat acutely. *Poor prognosis if occurs late in hosp course*.

Post Angiography: Late Complications

A. Renal Dysfunction—Contrast Nephropathy

B. Atheroembolism or Cutaneous Cholesterol Emboli (CCE) First manifestation-Livedo reticularis. Also Blue toes, "Trashed Foot" Cyanosis, Purpura, Nodules

C. Retroperitoneal Bleed: Usually no groin hematoma: Flack Pain Diagnosis by CT Scan