

Cardiac Surgery

- Decision for surgery based on pt symptoms & cardiac cath report
- Angina with >50% occlusion of left main or left main equivalent = >70% stenosis in both prox LAD + prox left circumflex
- Unstable angina with severe 2 vessel or moderate 3 vessel disease

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Cardiac Surgery cont.

- >70% occlusion
- 3 vessel disease = stenosis of 50% or more in all 3 major CA with LV dysfunction (EjFx<50%)
- Ischemia with heart failure

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Patient History

- Pt expectations, symptoms, quality of life
- Co-morbid conditions
 - ◆ Lung
 - ◆ Liver
 - ◆ Kidney
 - ◆ Diabetes
 - ◆ Arrhythmia

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Patient History

Allergies

- ◆ Antibiotics
- ◆ Heparin-induced thrombocytopenia
- ◆ Fish allergy
- ◆ Use of protamine insulin
- ◆ Past cardiac surgery
- ◆ Current medications Prior hospitalizations, illnesses, & procedures
- ◆ Social history

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Pre-operative Care

- Pt/family education
- Pain control
- Psychological Support
- Pulses
- Neurological status

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Intraoperative

- Median sternotomy
- Cardiopulmonary bypass
- Cold technique (82.6-89.6f)
- Hemodilution
- Anticoagulation
- Hypothermia (↓ systemic O2 requirements)

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Myocardial Preservation

- Cold cardioplegia
 - ◆ Intentional arrest of the heart during CPB
 - ◆ Aorta clamped & cardioplegia infused to the heart & CA
 - ◆ Cold to reduce myocardial tissue oxygen demand
 - ◆ Cardioplegia soln: alkaline hyperosmotic with K, Mg, Ca, Na Cl, glucose, Mannitol, AA, Ca channel blockers & bicarb.

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Side Effects of CPB

- Creates a shock-like state :
 - ◆ Low Hct (hemodilution)
 - ◆ ↓ systolic BP
 - ◆ ↓ perfusion of organs & tissues
 - ◆ Platelet destruction & RBC hemolysis
 - ◆ Post-op coagulation problems
 - ◆ Aortic cross clamping (thrombus)

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Postoperative Care

- Monitor HR, a-line, CVP, PWP, CO
- Check peripheral pulses/apical
- Warm pt slowly
- Assess cap refill & skin color
- UO q one hour
- Pace settings
- Chest tube drainage
- K & Mg /lytes

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Respiratory Function

- Ventilation Goal SpO₂ >95%
- Wean & extubate ASAP

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Chest tube drainage & bleeding

- Mediastinal tubes
 - ◆ Observe & document output = usually declines in the first few hours
 - ◆ Monitor Hgb
 - ◆ If >200cc's for > 3 hours needs aggressive Tx
 - ◆ #1 R/O coagulopathies

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What are the major causes of abn.coagulation times?

- INR (1-1.2 sec or PT 12-12 sec)
 - ◆ Prolonged Coumadin, hepatic dysf.
- aPTT (35-45sec)
 - ◆ Prolonged by Heparin
- Bleeding time (2-8min)
 - ◆ ASA, NSAID's, valve problems,
- Platelet Ct (150,000-400,000)
 - ◆ Infection, drugs, hematologic

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Criteria for return to OR

- Bleeding > 400 ml/hour for 3 hours

Or

- Bleeding > 100 ml/ hour for 6 hours

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Cardiac Tamponade

- Pressure on the heart caused by accumulation of blood in the pericardium
- Occurs if patient is bleeding & mediastinal tubes are not kept patent
 - ◆ R heart pressure (CVP) = L heart pressure (PWP)

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Renal

- Initially diuresis > 100 – 200 cc's/hour
- Monitor BUN & Cr.

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Hypothermia

- Temperature
 - ◆ 95-96.8 F
- Prevent shivering

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Neurological care

- Monitor LOC
- Pupils
- Ability to follow commands
- Strength & movement of extremities

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Postop Labs

- Hgb/Hct
- PT/PTT
- Na, K, Cl
- BUN/Cr
- ABG/Glucose
- Troponin
- EKG/Chest xray

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How can one tell if the pt is doing well?

- UO>30cc/hr
- HR within 60-100
- Ventilating well
- Chest tube output under control
- EKG changes
- Pulses
- Normothermic
- ? Inotropics

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Most common abn in the early postop period

- ↓BP, ↓T, ↓K, ↓Mg
- Anemia
- Bradyarrhythmias
- Respirator failure
- SVT
- Bleeding
- Ventricular arrhythmias

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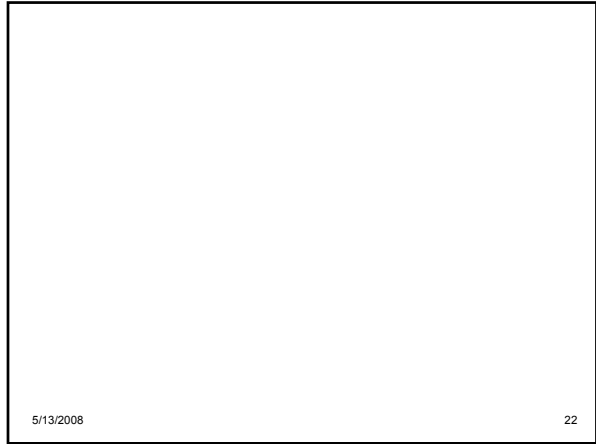
Low CO syndrome

- CHF = Low CO syndrome
- Underperfused tissues & congested organs due to ↓ CO
- CI< 2.0 l/min/m²

- Most common complication in the early postop period

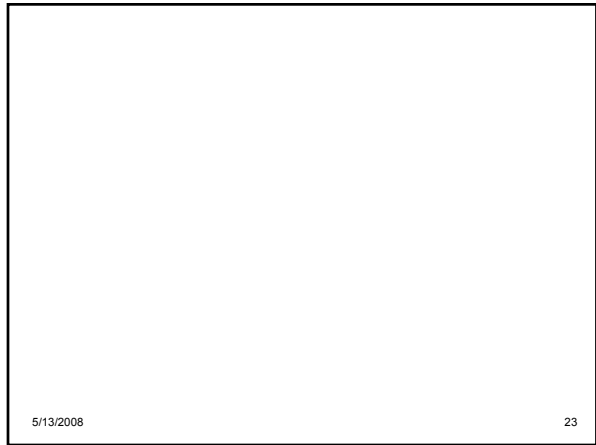
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