Off Pump CABG

Vascular Access and Monitoring

- Minimum of one large bore (14G, 16G) peripheral IV.
- Radial arterial line placed under sterile conditions.
- Central Venous Access - SvO2 PA catheter.
- ASA standard monitors - NIBP, EKG (backpack, 5-lead), Pulse Ox, Temperature probe (oral and rectal).
- Be sure that EKG monitor is in diagnostic mode w/S-T segment readout visible
- TEE probe - barring any contraindication to placement of probe.
- Pacemaker in room
- R2 pads on all patients for possible cardioversion or defibrillation

Infusion Pump Set up

- Dopamine
- Nitroglycerin
- Norepinephrine
- Neosynephrine
- Milrinone (to be considered when PA pressures are elevated)
- Epinephrine (have available)

Anesthetic Technique

- Low dose narcotic with propofol for sedation into ICU

Pre Medication

- Midazolam 30-60 mcg/kg (2-5 mg total for case)

Induction

- Etomidate 0.2 - 0.3 mg/kg
- Pancuronium 0.1 mg/kg (give slowly if A-fib is present)
- Sufentanil 1 mcg/kg (< 2 mcg/kg for case)

Maintenance

- Isoflurane - maintain at 0.5 - 1.0 MAC
- Utilize nerve stimulator for NMR dosing (maintain 1-2 twitches)
- Maintain room temperature at 72º F, use Model 560 "Cath Lab" Bair Hugger around patient's head, shoulders and body, administer fluids through fluid warmer

Ventilation

- Maintain normocapnia
- ABGs: at minimum after induction and before closure, or as often as indicated
- Small TV and more rapid RR as required for surgical visualization

- 400 - 600 ml TV, 8 - 14 RR

After Induction

- Slowly administer Magnesium 30 mg/kg IV (~2g)
- Assess volume status and check cardiac output, estimate vascular tone
- Keep BP above 90, PAD below 15
- For persistent elevated PAD > 15 - 18 titrate NTG and consider Inotrope
- Maintain K+ in 4.0 - 4.5 range
- Maintain HCT in 27 - 30 range
- Maintain temperature at 36º C (Aids in vasodilation)
- Place Bair Hugger around pt
- Administer all IV fluids through warmer
- Maintain ambient room temperature - 72º F at minimum, higher if needed

During IMA Takedown

- Heparinize with one-half the usual Heparin dosage - 150 units/kg = 0.15 ml/kg
- Check ACT every 20 minutes and keep ACT > 300

Positioning the heart

- Pacing Wires may be placed (surgical preference) for RCA grafting
- Maintain constant visualization of heart, BP, PAP,ECG, ST segments, and Svo2
- Slow gradual movements of the heart are best tolerated
- If hemodynamics deteriorate don't necessarily jump right to drugs. INFORM SURGEON!
- Consider Trendelenburg Positioning
- Volume and/or Neo or Levophed Titration
- Low dose Milrinone w/o bolus (check with surgeon first)

Ischemic Preconditioning

- Test clamp of target CA for 3 minutes with pledgeted silastic tape
- Monitor for hemodynamic, rhythm and ST changes,
- Inform surgeon of problems

During Grafting

- Keep BP above 90, PAD below 15
- If ST segments hange inform surgeon, raise perfusion pressure
- Have full heparinization dose ready for emergency CPB