Routine Cardiac Case

Overview

This checklist was devised to help new cardiac anesthesia learners acclimate to the operating rooms at Vanderbilt University Medical Center and should be broadly applicable to cardiac operating rooms in the United States.

Comprehensive Checklist

Preoperative

Pre-Op Assessment/Review

- [ ] Cath
- [ ] Echo
  - Low EF → Inotropes available
- [ ] EKG
  - LBBB → Consider floating PAC after chest open
- [ ] Labs
- [ ] Type and Screen
- [ ] Review pertinent studies based on history

Room Setup

- ▼ Pharmacy
  - [ ] Cardiac Box with Drips (standard = amicar, norepi, nicardipine, lidocaine, dobutamine, propofol)
  - [ ] Additional Drips as Needed (epi, vaso, milrinone, flolan, ketamine, precedex)
  - [ ] Controlled Substances (fentanyl, midazolam, +/- ketamine, +/- methadone)
- ▼ MSMAIDS
  - [ ] Machine Check
  - [ ] Suction
  - [ ] Monitors
    - [ ] 3 sets of EKG leads (Standard 5-Lead, Defibrillator 3-Lead, TEE 3-Lead)
    - [ ] Zoll pads, Cerebral Oximetry (if used)
    - [ ] Triple Spike (Art, CVP, PA)
    - [ ] Pulse Ox and NIBP Cord
    - [ ] Nasal Temp Probe

- [ ] Stack of 4×4s and alcohol swabs
- [ ] Airway
  - [ ] 8.0 ETT
  - [ ] Laryngoscope of Choice
  - [ ] Oral Airway + Tongue blade
  - [ ] Eye tape
- [ ] IV
  - [ ] Hot line
  - [ ] Additional PIV setup as needed
- [ ] Drugs
  - [ ] Uppers: Epi (10 mcg/mL), ephedrine, phenylephrine, norepi, vaso, calcium chloride
  - [ ] Induction: Lidocaine, Propofol, Fentanyl, Versed, Rocuronium
  - [ ] Other: Heparin, Flush + 2 claves for PAC
  - [ ] Drips
    - [ ] Carrier: Normosol → Alaris tubing + rainbow manifold + double stockcock + a-line ext
    - [ ] Carrier: First slot, Set to 100 mL/hr
    - [ ] Norepi: Second slot, Set to 4 mcg/min
    - [ ] Amicar: Fourth slot, Set to 10 mg bolus + 2g/hr infusion
- [ ] Special
  - [ ] Dual chamber pacemaker box
    - [ ] Check Battery
  - [ ] Arterial Line supplies (wrist roll, prep stick, sterile gloves)
  - [ ] Central line supplies (gown, 2 sets of sterile gloves)

- [ ] End of case supplies (NGT, CVC dressing, tongue depressor for transducers)
- [ ] Machine
  - [ ] Top Left: Piece of 3-inch tape with patient's age, height, weight, heparin dose, ACT, CO, and CI
  - [ ] Top Right: Piece of tape to hang ABGs
- [ ] Order Intraoperative TEE

▼ Time Out

- [ ] Blood Available? (Valid T&S)
- [ ] Dual chamber pace maker in the room?
- [ ] Appropriate antibiotic coverage?

- [ ] Blood in the room if redo sternotomy

Intraoperative

▼ Pre CPB

- [ ] Attach Monitors: 3 sets of EKG leads, pads, pulse ox, NIBP, BIS, NIRS
- [ ] Arterial Line
- [ ] Induction
- [ ] Airway
- [ ] Central Line
  - [ ] TEE placed by attending or fellow
- [ ] Attach drips (white port) and Hot line (brown port)
- [ ] Click "Anesthesia Ready"
- [ ] Draw Baseline ACT (TB syringe) and ABG
  - [ ] Document baseline ACT
- [ ] Shoot Cardiac Output
- [ ] Place Nasal Temp Probe

- [ ] Incision: Consider redosing rocuronium and fentanyl during surgical timeout
- [ ] Sternotomy: Lungs down unless redo sternotomy
- [ ] If taking down LIMA → Reduce Vt and increase RR to allow for exposure
- [ ] Given Heparin when asked by surgeon
  - [ ] Typically 300 U/kg
- [ ] Start Amicar
- [ ] Draw ACT after 2-3 minutes
- [ ] Aortic Cannulation: SBP 100 mmHg target

▼ Going on CPB

- [ ] Ensure adequate ACT (typically > 480)
- [ ] When perfusion reaches FULL FLOW:
  - [ ] Turn off ventilator, Vaporizer, Fresh Gas
  - [ ] Turn off monitor alarms
  - [ ] Turn off Bair hugger
  - [ ] Turn off fluid warner
  - [ ] Dump Urine (record)
  - [ ] Turn down carrier (30 mL/hr)
  - [ ] Consider discontinuing vasopressors
  - [ ] Click "Bypass Initiated" in Epic
- [ ] If using retrograde cardioplegia:
  - [ ] Attending/Fellow to guide cannula into coronary sinus by TEE
  - [ ] Attach male-to-male connector to CVP transducer and flush
    - [ ] Make sure the team knows which transducer is retrograde ("retro is on blue")

▼ While on CPB

- [ ] Assemble transport bag
- [ ] Spike Inotropes, Propofol, and other drips as needed for separation from CPB
- [ ] Catch up on charting

▼ "Rewarming"

- [ ] Inform attending
- [ ] Start propofol infusion (Highest risk time for awareness)
- [ ] Turn on bair hugger
- [ ] Ask perfusion to send labs (Fibrinogen and Platelets)
- [ ] Turn on Pulse Ox volume
- [ ] Order blood products as needed
- [ ] Prepare to separate from CPB
  - [ ] Confirm availability of pacer box
  - [ ] Turn carrier back to 100 cc/hr
  - [ ] Turn on Oxygen/Volatile Anesthetic
  - [ ] Manual recruitment breath (beware of LIMA graft)
- [ ] Aortic Clamp off: Inform attending

▼ Separating from CPB

▼ Confirm the following:

- [ ] Attending present
- [ ] Oxygen/volatile agent on
- [ ] Ventilating
- [ ] Carrier turned up
- [ ] Alarms and QRS volume on
- [ ] Vasopressors +/- inotropes infusing
- [ ] Rhythm adequate for separation (+/- pacer box)

- [ ] Bolus syringes ready
- [ ] Support BP
- [ ] Once separated, click "Off Bypass" in EMR
- ▼ Protamine administration
  - [ ] When asked, give test dose (10-20 mg) → WAIT (watching for anaphylaxis and RV failure → Type 2 and 3 protamine reactions)
  - [ ] If all OK, announce "Continuing protamine" and wait for verbal confirmation
  - [ ] Give slowly until HALF given, then announce to room, wait for verbal confirmation
  - [ ] Wait for perfusion to say "Pump suckers off" before continuing to completion with protamine
- [ ] Draw ACT 3 minutes after protamine all in. Compare to baseline.
  - [ ] Consider giving more if ACT not to baseline

▼ While Closing

- [ ] Draw ABG
  - Tape this to pumps with tape with heigh, weight, ACT, CO, CI for report to CVICU
- [ ] Shoot Cardiac Output/Index
- [ ] Call Report (See Report Checklist)
- ▼ Break down setup
  - [ ] Place transducers on tongue depressor with tape on either side
  - [ ] Empty foley
  - [ ] Break down hot line
  - [ ] Unplug pumps

▼ When Drapes Come Down

- [ ] Apply sterile dressing on central line

- [ ] Attending/Fellow to remove TEE
- [ ] Place OG tube
- [ ] Secure PAC and transducers to patient's chest or shoulder
- [ ] Switch to travel monitor

Report to CVICU

- [ ] Patient Name, Age, Sex, One-liner (PMH, Allergies, Procedure)
- [ ] Patient Height and Weight
- [ ] Line: Location, Type, Any pertinent difficulties
- [ ] Airway
- [ ] Pertinent pre-CPB events
- [ ] Coming off pump
  - [ ] Rhythm +/- pacing, pacing wire availability
  - [ ] Inotropes
  - [ ] Post-CPB echo (given by attending/fellow)
- [ ] Current infusions
- [ ] Ins (IVF, product, cell saver) and Outs (urine output, EBL if abnormal)
- [ ] Pertinent labs (coags, electrolytes, treatments rendered)
- [ ] Give most recent ABG to ICU team
- [ ] Last muscle relaxant given
- [ ] Other concerns ("What worries me the most about this patient is...")