Summary of Cardiac Anesthesia Technician Responsibilities

Division of Cardiac Anesthesia, BIDMC

Before Bringing Patient into Room

1) Check to see that drawsheet is folded and that the 5 ECG leads are properly placed. Make sure headrest, armboards, stanchions, and manifold stand are present.
2) Turn on primary Philips monitor and make sure secondary monitors are working. Make sure that the appropriate configurations are displayed. See Monitor Setup on pg. 7 for details.
    a) Philips display = display 1 or primary – put to "cardaic" screen configuration

    Secondary displays = display 2 – put to Swanganz screen configuration
3) Defibrillator should be turned on and cable attached to one of inputs in ECG multiple input "box." Check weekly as follows:
    a) Make sure paddles are secure in box.
    b) Turn on and charge to 360 J.
    c) Turn down to 10 J.
    d) Put SYNC button on and try to discharge paddles.
    e) THEY SHOULD NOT DISCHARGE!!!
    f) Shut SYNC off. Paddles should now discharge into box.
    g) Turn back to ON and SYNC.
4) Transducers should be flushed, connected to Philips monitor and zeroed.
    a) Make sure all connections are tight and flush with normal saline in pressure bag flush.

    While open to air, zero all transducers. .
    b) Check pressure scales- Pressure 1 ABP 120, Pressure 2 PAP 60, Pressure 3 CVP 30, Pressure 4 Ao 120.
    c) Replace white caps with occlusive yellow ones.
    d) Inflate pressure bag to 300 and turn stopcock off to bag.
5) Prepare cardiac output (CO) set up if using standard pulmonary artery (PA) catheter. Standard CO setup is room temperature D5W except for OpCABG and/or as specified by attending.
6) Make sure PA line and introducer/access kit are in room.
7) Have tech supplies available - sticky drapes for covering leads, a 3 cc finder needle, an appropriate syringe for ACT sample, large tegaderm, and a benzoin swab.
8) Make sure 3-4 infusion pumps are in room and charged.

Meeting the Patient

1) Introduce yourself to patient.
2) If patient is in an ICU, bring transport monitor and defibrillator to unit. Attach 3 leads for monitoring purposes before transport to OR.

3) If necessary, complete a heart cooler slip which includes room #, phone ext., date, time, attending and tech's name. Tube down to Blood Bank, or if patient is in an ICU, call information to Blood Bank.
4) Before transport, check for O_2 tank on stretcher / bed.

You should be immediately available at all times. If not in room, tell the attending where you will be and how you can be reached.

Patient in Room

1) Transfer to bed, remove stretcher.
2) Place ECG leads and cover with tegaderms.
3) If requested or required, place blood pressure cuff on same arm as arterial line and inflate one time.
4) Place pulse oximeter on finger and check that trace appears on screen.
5) Connect and flush arterial line (if not done by attending).
6) Calibrate ECG size on Philips monitor. Set ST segments if necessary.
7) Assist with induction of anesthesia as requested.
8) Draw a blood gas and ACT with appropriate syringe supplied by perfusionist
9) Prepare 5 ABG slips. Be sure slips are stamped and completed properly. This means the date, the time the gas is drawn, number 1-5, the procedure, the attending, the room number and phone number are all complete, and **most importantly it is signed by you.**
10) Remember to record the time the ABG is drawn, the Fi02, and CPB if on bypass - on our blood gas record sheet.
11) Assist with placement of central line and floating of PA catheter.
12) IF oximetric PA catheter planned, must perform in=vitro calibration prior to placement.
13) Using sterile technique, pass off PA line to resident. Inflate syringe and connect to PA. Connect thermistor to CO cable, check for temperature on monitor. Connect PA ports to proper transducers and flush. Inflate balloon while flushing PAP transducer. If not using VIP port, attach 3 cc syringe with stopcock, flush and turn off to patient. Remove syringe and cap.
14) After PA line is floated, connect cardiac output setup. Verify proper constant and confirm.
15) Help pad and tuck patient's arms.
16) Draw up heparin. Dose will be determined by perfusionist.
17) Ensure that blood cooler is in room.
18) Draw up antifibrinolytic medication per attending, e.g. tranexamic acid
19) Check with attending to make sure everything is all set. Other drugs may need to be mixed up or drawn up at this time e.g., Magnesium, Amicar, Diltiazem.

You should be immediately available at all times.

If not in room, tell the attending where you will be and how you can be reached.

Before Bypass

1) ACT should be drawn 3 minutes after heparinization.

a. Draw 10 ml of blood off the side port of cordis or central line and discard.
b. Draw 2m1 sample for ACT tube.

During Bypass

Chores: Stock bluebell and redbell, setup transducers and CO for late cases.

1) Draw up Protamineonce dose is determined by perfusionist. Place on infusion pump and set for 60 ml/hr.

Be sure to keep the Protamine and Heparin bottles separate - they are the same size and shape!!!

2) If bed has come down from unit, bring back and prepare.
3) Insert shelving unit, connect ambu bag to O_2 tank, turn tank on and make sure it is full and able to inflate ambu bag at 15 L. Find IV pole, another set of ECG leads, and roller with pillow case and place on bed.

When warming, be readily available - in room.

Post Bypass

1) Remain in room as much as possible during post CPB period.
2) Do ACT 3 min after all protamine is delivered to patient.
3) When sternal wires are being placed put transport monitor and defibrillator on bed.
4) Draw ABG when chest is closed.
5) After last CO is done, breakdown CO setup. Remove balloon syringe, deflate and reattach.
6) When TEE-probe is removed, bring to cleaning room and place in sink for techs or rinse off and place in cidex.

Transfer and Transport

1) Place clean dressing over neck line - 2x2 and large tegaderm.
2) Place new ECG leads on patient and connect to module - make sure they work.
3) Remove old ECG leads.
4) Turn on transport monitor and defibrillator, transfer modules from Philips monitor to transport monitor.
a) Transport monitoring should include, at minimum, ECG, ABP, PAP, and O_2 sat.
4) Plug defibrillator into ECG output of transport monitor.
5) Remove blood pressure cuff.
6) Transfer patient to bed and bring to unit.

After Patient leaves Room

1) Break down old setup. Begin for new setup by wiping down ventilator, bringing dirty trays to workroom, getting a new tray, hanging a new green bag on side of anesthesia machine.

Wipe down fluid warmer and make sure everything is turned off - e**specially anesthetic gases.**

2) Return drug tray and any unused drugs to pharmacy. After hours and on weekends, place unused drugs in Omnicell. Get a new drug tray.
3) Clean cables (Pressure, ECG, CO, pulse oximeter), satellite rack, stanchions and manifold. Wipe down bluebell, redbell, and bottom of IV poles. Also carefully, (without too much moisture) wipe off TEE machine. There should be no blood on anything. If necessary, wipe ECG leads with nail polish remover to get rid of sticky drape residue.
4) Set up drawsheet, ECG leads, armboards, headrest. Make sure stanchions and manifold are present..
5) Make sure a set of transducers, a transducer holder, a 500 mI bag of NS for flush, and a pressure bag are in the room, along with a PA catheter, CO tubing-with cooler (if necessary) and a 500 ml bag of D5W.
6) Check redbell and restock with fluids, greenpacks, hotline tubing, blood filters, and mini drip tubing. Also, check the airway drawer and make sure there are short and long handles for the laryngoscope, and all standard blades (Mac 3 & 4, Miller 2, 3 & 4). Place introducer/access kit and gown on redbell.
7) Turn off defibrillator. And anesthesia machine.
8) Go home, rest, and get ready to start all over!!

Patients with Intra-Aortic Balloon Pumps (IABP, Pre-op)

1) Check room setup as usual.
2) Bring defibrillator, ECG splitter box, and transport monitorc with modules containing an ECG module with leads and the double ABP pressure box (pressure box with phono jack) with cable to the ICU.
3) Put new ECG leads on patient.
4) Plug ECG splitter box into transport monitor.
5) Plug defibrillator into splitter box.
6) Check what IABP is triggering from. The basic principle is that the IABP triggers from either pressure or ECG. We do NOT want to interrupt its triggering mechanism.

a) If triggering off pressure - disconnect ECG cable from ICU monitor and plug into splitter box.
b) If triggering off ECG - connect transducer on balloon to transport monitor pressure cable.
c) Open transducer to air and rezero on transport module.
d) Turn stopcock, ABP pressure wave should now be on transport monitor.
e) Now disconnect pressure cable from ICU monitor and plug into ABP pressure box on transport monitor.

7) You are now ready for transport.
8) Once in the operating room and settled, the reverse is done with the cables - transfering them from the splitter box and ABP pressure module to the Philips monitor.
9) To monitor both the radial arterial pressure and the femoral arterial pressure off the single ABP transducer, the femoral line must be connected to the transducer by means of a male to male adaptor, long Cobe tubing, and a four way stopcock.
    a.) Make sure the IABP is triggering off ECG.

b.) Connect the male to male (with Cobe tubing attached) to the side port of the ABP transducer and flush.
c.) Turn stopcock on balloon transducer off to patient.
d.) Disconnect transducer and place the four way stopcock below the first stopcock. Reattach the transducer to bottom.
e.) Flush balloon transducer out the side port of the top (first) stopcock.
f.) Attach cobe tubing to side port of four way stopcock. Turn four-way stopcock so that all ports are open.
g.) Flush ABP transducer also out the side port of the top stopcock.
h.) With a 10 cc syringe drawback from the patient, again using the side port of the top stopcock.
i.) Turn side port off and flush line to patient using either transducer. You should now be able to monitor either the radial or femoral pressure.

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