**Perioperative Considerations for Implantation of WATCHMAN Left Atrial Appendage Occlusion Device**

Submitted 9/2016 by Dong

Revised 12/2016 by Cross, Moreno, Vacula, and Villamaria

**OVERALL**

* Scheduled on 2nd Thursday and 4th Tuesday of the month
* No current plans for CV surgery on standby
* Open to all Sr. Staff
* On Watchman days, may be helpful to assign Sr. Staff solely to EP

**PRE-OP**

* Patients who are indicated for this procedure have high CHADS-VASC scores and typically on Coumadin or other outpatient coagulant. Instructions from cardiology thus far have been to *continue* therapy.
* INR will sometimes be drawn prior to procedure but will not impact the start.
* EP RNs will attempt 18ga or greater PIV in holding area, and will try to avoid skin overlying radial artery. They may ask for your help.
* *Usually* a recent TEE will have already been done, but still worthwhile to check for contraindications
* Completed **type and cross x 4 units PRBCs in small cooler** in the room.
  + Circulating EP RN to bring to room prior to femoral access
  + PRBCs may remain in cooler for about 2 hours
  + If not used, should be returned to blood bank

**INTRAOP/SETUP**

* Overall: GETA with arterial catheter monitoring
  + Placement of arterial line pre-induction for usual indications ± convenience. (This patient population probably would benefit anyway)
* Recommend priming blood tubing and setting up Hot Line but *do not* connect to patient. Will only be used for blood transfusion (read: emergency)
* Recommend multiple IV tubing access sites for at least following infusions:
  + Heparin
  + Vancomycin
  + Vasopressor as needed
* Verify blood availability
* Perfusionist to have cell saver on standby in room
* Usual IV induction and intubation.
* TEE by cardiologist
* EP physicians will insert *14Fr femoral venous cannula*
  + Star closure for removal of lines
  + Do not need to hold normal 10 min pressure
* INTRAOPERATIVE TASKS
  + Heparin to be dosed and/or infused with goal ACT > ~300
  + Currently anesthesiology providers tasked with drawing ACT sample, ***quite frequently***
    - POC test is run by EP staff
  + Time to device deployment is currently (09/2016) ~1hr after access, but may be shorter
  + Protamine as usual
  + Emergence and extubation as usual.

**POST-OP CARE**

* Currently, with a routine post-operative course, patients recover in EP procedure area, and will be admitted to telemetry floor.
* Suggest leaving arterial line in for monitoring in EP patient rooms (late bleeding, native cardiac pathology, etc…)
  + Transducer cables not routinely available, but *work in progress.*
* ***Presumably unstable patients should go to CTICU, but not confirmed (09/2016)***

**EVOLVING EMERGENCY MEASURES**

1. Pericardial Tamponade: hemodynamically significant
   1. A physician (either EP or cardiologist) trained in pericardial drains is present at all times during the procedure
   2. Procedure kit is located in room.
   3. This will likely improve patient status in short term
2. Refractory to pericardial evacuation, or other massive complication (great vessel rupture, myocardial perforation, device embolus, etc)
   1. Obviously, emergency should be declared, procedure stopped
   2. Cardiac surgery should be notified already by EP staff
   3. Emergent access to procedural venous sheath for blood/fluid/pressors (discussed with EP staff) 🡨 Blood Hotline
      1. ***Currently unsure how to deploy cell saver (which was requested in room)***
   4. Concurrently, consider having EP physician place:
      1. Femoral Arterial cannula
      2. Wires appropriate for CPB cannulae
3. ACLS as appropriate