**OB Anesthesia Survival Guide**

**September 2014**

**Sign-out/Sign-in**

* Residents
  + Receive report from outgoing resident
  + Sign into labor epidurals on epic
  + Ensure that epidural carts and operating rooms are in working order
  + Operating rooms
    - Complete machine check once per day
    - Confirm working laryngoscope, oral airway, endotracheal tube, suction
    - Confirm presence of drug box in top cart
    - Confirm all monitors present
    - Confirm operating room cart fully stocked
* Senior Staff
  + Receive report from outgoing staff member
  + Sign into labor epidurals on epic
    - This task can be delegated to the resident covering labor and delivery

**Labor Epidurals**

* Preoperative evaluation
  + Timing
    - See patient within 15 minutes of epidural request if possible
    - 2 simultaneous requests: do most urgent epidural first, then proceed with second
      * Consider calling for help if both requests are urgent
    - 3 simultaneous requests: call for help
  + Platelet count
    - Healthy patient without comorbidities: no platelet count needed
    - Mild preeclampsia: provider judgment
    - Severe preeclampsia: platelet count within two hours
  + Anticoagulants
    - Unfractionated heparin: no PTT needed if patient receiving 5000 units subcutaneous TID or less
    - Heparin infusion: turn off infusion for four hours, repeat PTT
    - Enoxaparin 40 mg daily: wait 12 hours from last dose
    - Enoxaparin 0.5 mg/kg BID: wait 24 hours from last dose
    - Other drugs: consult ASRA guidelines
  + Febrile patient/increased white blood cell count
    - Obtain as much information as possible (site of infection, started antibiotics, etc.)
    - Consider differential diagnosis
    - Use clinical judgment (no clear guidelines)
  + History of spinal instrumentation
    - Obtain history, review films if possible
    - Attempt to place epidural above or below scar
    - Manage patient expectations proactively
* Labor epidural management
  + Test dose: 3 ml lidocaine 1.5% with epinephrine 1:200,000
  + Bolus: 8 ml ropivicaine 0.2% with fentanyl 100 mcg in divided doses
  + Maintenance: offer epidural PCEA
    - Basal rate: 10 ml/hour
    - Bolus: 5 ml
    - Lockout: 15 minutes
    - Max dose/hour: 30 ml
  + Inadequate labor epidural
    - Focused history
    - Focused physical exam including pinprick test (or equivalent)
    - Check chart and administer fentanyl 100 mcg through epidural if it has been more than 3 hours since last dose
    - Bupivicaine 0.125% 15 cc in divided doses if level below T10
    - Offer to replace epidural if inadequate relief
* Unintentional dural puncture
  + Thread epidural catheter into intrathecal space
  + Bolus dose: 1 ml bupivacaine 0.125%, fentanyl 10 mcg
  + Label intrathecal catheter appropriately
  + Patient controlled intrathecal anesthesia (PCIA)
    - Basal rate: 1 ml/hour
    - Bolus: 0.5 ml
    - Lockout: 20 minutes
    - Max/hr: 2.5 ml
  + Remove catheter after delivery
* Postdural puncture headache
  + History: look for difficult epidural placement, documentation of dural puncture
  + Physical exam: there must be a postural component to the headache (e.g. better when lying down, worse when assuming upright position)
  + Conservative measures: rest, NSAID’s, fluid, opioids
  + Ask patient if she can take care of her baby with current headache; if yes, consider discharging without epidural blood patch, if no, consider blood patch
  + Epidural blood patch
    - Timing
      * Offer when 48 hours has elapsed from dural puncture
      * Ideally, patients coming from home will be told to report to triage between 0700-1500
      * Make an effort to perform epidural blood patches in a timely manner
    - Separate informed consent, anesthetic record (including preoperative evaluation)
    - If possible, enter epidural space at same level of dural puncture
    - Administer 20 ml of autologous blood drawn in sterile fashion from patient with fresh stick
    - Stop administration of blood after 20 ml or with persistent paresthesias
    - Patient should remain supine for 30 minutes and then be instructed to not lift anything heavier than her baby for 72 hours or engage in strenuous activity

**C-sections**

* Can use same anesthetic record/consent as labor epidural
* Premedication
  + Sodium bicitrate 30 ml po (usually given by nursing staff)
  + Ranitidine 50 mg IV (can be given as push)
  + Metoclopramide 10 mg IV (should be given slow)
* Spinal anesthesia
  + Consult dosage chart based on height/weight for dose of 0.75% hyperbaric bupivacaine
  + Fentanyl 10 mcg unless contraindicated
  + Preservative free morphine 0.2 mg unless contraindicated
  + If a prolonged block is desired, aspirate epinephrine 200 mcg (0.2 ml) with a tuberculin syringe and filter needle, then inject the medication into spinal syringe with fresh needle
* Epidural anesthesia (use existing epidural)
  + Confirm that epidural has been working for labor
  + Check initial level with pinprick exam (or alternative) and then incrementally dose lidocaine 2% in divided doses
    - Sodium bicarbonate 2 ml may be added to 18 ml of lidocaine 2% to hasten onset of block, but should be added at time of administration
* When discontinuing labor epidural and performing spinal anesthesia
  + If possible, turn labor epidural off for as long as possible prior to performing spinal
  + Communicate possibility of high spinal and emergency C-section with obstetrical providers and confirm their proximity when performing spinal
  + Consider using 2/3 of usual spinal dose
  + Have induction agents drawn up in advance
  + Consider having difficult airway equipment (video laryngoscope) in room
* General anesthesia (from Chestnut)
  + Discuss operative plan with the multidisciplinary team
  + Perform preanesthetic assessment and obtain informed consent
  + Prepare necessary medications and equipment
  + Place patient supine with left uterine displacement
  + Secure 16 or 18 gauge intravenous access
  + Administer premedications as described above
  + Initiate monitoring
  + Perform timeout
  + Preoxygenate with 100% oxygen for 3 minutes or have patient take 4-8 vital capacity breaths
  + After the abdomen has been prepared and operative drapes are in place, verify that the surgeon and assistant are ready to begin surgery
  + Initiate rapid-sequence induction
    - Cricoid pressure to 10 N while awake, increase to 30 N after loss of consciousness
    - Propofol 1-2 mg/kg and succinylcholine 1-1.5 mg/kg; wait 30-40 seconds
  + Perform endotracheal intubation. Confirm placement.
  + Provide maintenance of anesthesia
    - Use isoflurane, sevoflurane or desflurane (approximately 1 MAC) in 100% oxygen OR oxygen nitrous oxide (up to 50%)
    - Treat hypotension (phenylephrine, ephedrine)
    - If additional muscle relaxant is necessary, use peripheral nerve stimulator to titrate
  + Observe delivery of baby
  + Begin a continuous infusion of oxytocin; consider other uterotonic agents (e.g. methylergonovine, 15-methyl prostaglandin F2 alpha, misoprostol) if uterine tone is inadequate. Monitor blood loss and respond as necessary.
  + Adjust maintenance technique after delivery of the infant
    - Administer a reduced concentration of a volatile halogenated agent (0.5-0.75 MAC)
    - Supplement anesthesia with nitrous oxide and an intravenous opioid
    - Give attention to risk of awareness and recall. Consider administration of a benzodiazepine (e.g. midazolam)
  + Perform extubation when neuromuscular blockade is fully reversed and the patient is awake and responds to commands
  + Evaluate postoperative issues (e.g. pain, nausea)
* Failed regional technique
  + Diagnosis/plan
    - Confirm sensation of pain with patient
    - Briefly explain options with patient and, if possible, let her decide on technique (including general anesthesia)
    - If pre-delivery, give consideration to general anesthesia
  + Sedation
    - Only attempt moderate sedation (maintain meaningful contact with patient)
    - Consider use of nitrous oxide, ketamine if pain believed to be temporary (e.g. pressure from baby being delivered, uterus being placed back into abdomen, last few fascial sutures)
    - If moderate sedation unsuccessful, do not proceed to deep sedation. Instead, consider general endotracheal anesthesia
  + If post-delivery, consider use of intravenous opioids
* Oxytocin administration
  + Add 30 units to 1 L lactated ringers
  + Consider using secondary infusion set
  + Do not connect oxytocin infusion to patient until ready to use it

**Postpartum tubal ligations**

* Medicolegal: a separate preoperative evaluation/anesthetic record and consent are needed
* Anesthetic technique
  + If less than 4 hours from time of delivery and labor epidural worked well, consider using labor epidural catheter
  + If more than 4 hours from time of delivery or labor epidural did not work well, consider removing labor epidural catheter and performing spinal
    - Use clinical judgment to select reduced spinal dose if there is evidence of residual block from epidural
  + Consider general anesthesia if the patient expresses a preference and is a reasonable candidate
* Postoperative pain control
  + Consider giving fentanyl and preservative free morphine with neuraxial technique if the patient will stay for 24 additional hours or longer

**Antepartum Procedures**

* External cephalic version
  + Confirm with obstetricians whether they simply want the anesthesia team to be aware that an external cephalic version is taking place (in case of need for emergency C-section) or if they want an anesthetic to be performed
  + Anesthetic plan
    - Consider performing labor epidural and bolusing with lidocaine 2% that would facilitate an emergency C-section
    - Successful version
      * Can use epidural for labor analgesia
      * Will need to switch to ropivicaine for infusion
* Cerclage
  + Consider spinal anesthetic in lateral position
* Dilatation and curettage
  + Consider MAC for patients
    - In first trimester
    - No active nausea, vomiting
    - Adherence to NPO guidelines
  + Consider GETA for patients
    - In second trimester
    - Active bleeding
    - Active nausea, vomiting

**Ethical Objections**

* Rarely, a provider may feel that he/she has an ethical conflict with providing care for an obstetrical patient
* If during week: notify hallrunner
* If on call: activate back up physician
  + If back up physician not amenable, notify Director of Obstetrical Anesthesia
  + If Director of Obstetrical Anesthesia not available, notify Memorial Anesthesia Chief
  + If Memorial Anesthesia Chief not available, notify Chairman of the Department
  + If Chairman of Department not available, consider notifying another senior staff colleague
  + If no other senior staff colleagues available to assume care, you are obligated to care for the patient in accordance with hospital bylaws and Texas law

**Medical student participation in procedures**

* It is the discretion of the senior staff anesthesiologist on duty to decide whether or not a medical student will participate in a procedure (epidural, spinal, etc.)
* When a medical student is participating in a procedure involving sterile technique, the senior staff anesthesiologist will put on sterile gloves and be present throughout the entire procedure