Perioperative Management of Intrathecal Therapy

By Adam C. Young, MD, Matthew P. Jaycox, MD, and Timothy R. Lubenow, MD
Rush University Medical Center
Chicago, IL

Background

Intrathecal (IT) analgesia provided by an implanted reservoir/pump and catheter system is a treatment for chronic pain refractory to other analgesic modalities. FDA-approved IT medications include morphine, baclofen, and ziconitide. However hydromorphone, fentanyl, bupivacaine, and clonidine are employed with regularity. With increasing frequency, patients with implanted IT pumps are presenting for elective surgery and present a unique challenge.

Acute pain management for these patients is controversial as there are no published guidelines. Management of these patients comes from published case reports and anecdotal evidence. Below are recommendations for perioperative management of this cohort.

Best Practices

Preoperatively:

- The surgeon should consult with patient’s pain physician and/or pain physician at the hospital where the procedure is going to be performed in order to create a perioperative plan of care.
- Escalation of preoperative IT medications and oral opioids should be avoided.
- IT medication doses should be known and conveyed to the anesthesia team.
- Regional anesthesia should be employed whenever possible.
  - If continuous catheter techniques (peripheral or neuraxial) are employed, they must be performed under strict sterile technique with infusions lasting up to 48 hours.
  - If lumbar epidural analgesia is desired, access to the lumbar epidural space should be attempted with image guidance avoiding implanted components.
  - In the obstetric patient undergoing cesarean delivery, a neuraxial anesthetic may be considered if the IT catheter location is known and the
intended lumbar spine entry point is caudad; general anesthesia is otherwise recommended.

Intraoperatively:

- The anesthesiologist should execute an anesthetic plan as they see fit, using opioids as indicated. Caution is advised when utilizing continuous intra-operative opiate infusions.
- Analgesic adjuncts, such as NSAIDs, acetaminophen, steroids, and ketamine should be considered. Ketamine administered as a bolus of 0.5 mg/kg followed by an intraoperative infusion appears to carry little risk for adverse side effects and provides analgesia.
- If the IT pump or catheter are damaged during surgery and primary repair is not possible, the pump should be stopped and the patient transitioned to PO/IV opioids postoperatively.

Postoperatively:

- Short-acting pain medication should be given in the post-anesthesia care unit as indicated.
- Long-acting opioids should be avoided. This includes continuous doses on patient-controlled analgesia (PCA), epidural, long-acting oral or transdermal opioids.
- Continuous pulse oximetry and apnea monitor should be used to monitor patient.
- A multimodal analgesic strategy should be used, with a strong focus on adjuvants, NSAIDs, acetaminophen, anticonvulsants, and non-benzodiazepine muscle relaxants.
- Local anesthetics combined with epinephrine and/or clonidine should be used for continuous catheter infusions
- PCA is appropriate, although a basal rate should be avoided.
- For painful procedures (e.g. total joint arthroplasty), consider increasing the IT medication 10% with scheduled reduction in the dose to preoperative baseline 4-6 weeks postoperatively.
- Transition to only short-acting oral opioids is strongly advised.
- The patient should follow-up with his or her primary pain physician no more than 2 weeks postoperatively for continued management of their acute post-operative pain

References
