



Learning From Others:

Anesthesia
Quality Institute
ANESTHESIA INCIDENT
REPORTING SYSTEM (AIRS)

A Case Report From the Anesthesia Incident Reporting System

Detailed review of unusual cases is a cornerstone of anesthesiology education. Each month, the AQI-AIRS Steering Committee will provide a detailed discussion based on a case submission to the Anesthesia Incident Reporting System (AIRS). Feedback regarding this item can be sent by email to r.dutton@asahq.org. Report incidents in confidence or download the free AIRS mobile application (Apple or Android) at www.aqiairs.org.

Case 2014-12: Narcotic Free Anesthesia

A 51-year-old, 93 kilogram male with a medical history notable for bipolar disorder, hepatitis C, liver cirrhosis and squamous cell carcinoma presented for open right groin and pelvic lymph node dissection. His history was significant for abuse of alcohol and intravenous narcotics in the distant past. He had no known allergies. Daily medications included aripiprazole (Abilify), lithium carbonate and a multivitamin. Laboratory studies, including coagulation measures, were within normal limits.

On the day of surgery, the patient requested an opioid-free anesthetic as he was concerned about post-surgery substance abuse relapse. The anesthesia team decided on a plan for perioperative pain control, involving a transversus abdominal plane (TAP) block and local anesthetic injected by the surgeons. Epidural catheter placement was thought to be contraindicated due to the patient's hepatitis C and a theoretical risk of coagulopathy due to liver dysfunction.

General anesthesia was uneventful. The patient received midazolam, propofol, lidocaine, vecuronium, nitrous oxide, sevoflurane and a ketamine infusion at 10 mcg/kg/min. For postoperative pain control, 15mg of ketorolac was given and an ultrasound-guided right-side TAP block was performed at the end of surgery using 30ml of 0.5 percent bupivacaine. The surgeon also injected a total of 28ml of 0.25 percent bupivacaine subcutaneously. Emergence and extubation were uneventful and the patient was taken to the postanesthesia care unit (PACU).

The patient's postoperative course was complicated by extreme pain. In the PACU, the patient was hypertensive (175/92) and in 10/10 pain. The PACU nurse, who was unaware of the patient's wishes, administered 5 mg I.V. morphine in accordance with standing orders, and the Acute Pain Service was consulted. The patient subsequently received morphine via a patient-controlled pump. He was discharged on post-op day six after transitioning to oral analgesics, including hydrocodone on a tapering schedule. The patient was narcotic-free at a follow-up visit six weeks after surgery.



Discussion

While most physician anesthesiologists are accustomed to incorporating intravenous opioids into their anesthetics, there are a variety of patients in whom these medications are contraindicated. These include patients with a prior history of substance abuse, patients who have known sensitivity and patients who prefer not to receive opioids. The literature on determining the risk of relapse after general anesthesia is sparse, but there are some reports that state anesthesia and surgery may increase the risk of relapse in recovering addicts.^{1,2} Attempting to

honor the patient's request is an important patient satisfaction and quality-of-care of care issue. Clinicians may be able to improve the quality of anesthesia by designing regimens that take into consideration patient preferences along with the safety and efficacy of various analgesic regimens.

Because this patient was healthy from a cardiovascular perspective, and his hepatitis C was stable with minimal liver dysfunction, a variety of opioid-free analgesic options were available. If circumstances allowed, a conversation with the patient's primary care physician to establish a global analgesic plan would have been especially useful. Pain management options include regional techniques, non-opioid pharmacologic agents and non-pharmacologic strategies. In this case, an epidural catheter for use both intraoperatively and postoperatively would have been suitable, despite the history of liver disease. While an epidural hematoma can be a devastating complication it is also exceedingly rare, and the relative increase in this risk in a patient with normal clotting and platelet studies is certainly small. Various pharmacologic opioid-sparing agents may also be useful in this setting, such as NMDA receptor antagonists, non-steroidal anti-inflammatory drugs (NSAIDs), dexamethasone, magnesium, gabapentin, lidocaine (with cautious dosing in the setting of regional and local infiltration) and esmolol.³ Acetaminophen is a useful adjunct in almost any postoperative patient, although care would be needed in this case to avoid over-dosage in the setting of existing liver disease. Dexmedetomidine and clonidine have been advocated in patients with previous or current substance abuse problems.⁴ Optimal combinations and various routes of administration of these agents are still being studied. Non-pharmacologic perioperative opioid-sparing methods are numerous and include cutaneous stimulation, acupuncture, relaxation and bio-feedback.⁵

Comparative studies of different anesthetic strategies that focus on patient-reported outcomes in the setting of previous intravenous drug use are limited. Ensuring maximal analgesic benefit, while minimizing unwanted side effects, is already a challenge in this patient population. When patients request to not receive opioids due to a history of previous drug abuse, it may warrant serious consideration as the risk of relapse may outweigh the benefit of perioperative pain relief, especially in the setting of multiple appropriate alternative opioid-sparing agents. On the other hand, as in the present case, it can be hard to predict the analgesic requirements of a given patient and operation, and both physician and patient should agree in advance on the potential need for clinical flexibility.

In the present case, a multimodal approach to opioid-free analgesia was attempted but was almost immediately unsuccessful. Whether this was due to the extent of the surgical dissection, technical failure of the TAP block or unusual patient sensitivity is not clear, but the skilled clinician must deal with reality as it is, not how we wish it to be. Opioids were added to the analgesic regimen and proved efficacious. The ongoing

support of the pain medicine team enabled subsequent recovery and return to an opioid-free state.

This case also raises issues about the handover process. The patient received intravenous morphine in the PACU despite clearly voicing his concerns with intravenous opioids preoperatively. The PACU nurses were unaware of his desire to avoid opioids, indicating a problem with the handover and report from the anesthesia team to the PACU team. The incomplete transfer of key patient information in this case may have been due to poor standardization of the handover process.^{6,7} Use of a formal checklist for postoperative transfer of care can prompt busy clinicians to remember all key variables; use of such a checklist can now be selected as a public performance metric for eligible anesthesia providers (www.aqihq.org/quality/pqrs).

In summary, opioid-sparing anesthetic techniques are a reasonable option in patients at risk for substance abuse relapse.⁸ Numerous options are available, with a paucity of clinical data on which to base strong recommendations. In offering a patient-centered analgesic plan, however, the potential need for adjustment in the face of overwhelming pain must be acknowledged in advance by both patient and providers.

References:

1. Sadeghi P, Zacny JP. Anesthesia is a risk factor for drug and alcohol craving and relapse in ex-abusers. *Med Hypotheses*. 1999 Dec; 53(6):490-6.
2. Plunkett A, Fahlgreen M, McLean B, Munday D. Opioid-free balanced anesthesia for cervical ganglionectomy subsequent to recent ultra rapid opioid detoxification. *Pain Med*. 2009 May-Jun;10(4):767-70.
3. Collard V, Mistraletti G, Taqi A, Asenjo JF, Feldman LS, Fried GM, Carli F. Intraoperative esmolol infusion in the absence of opioids spares postoperative fentanyl in patients undergoing ambulatory laparoscopic cholecystectomy. *Anesth Analg*. 2007 Nov;105(5):1255-62.
4. Patil SK, Anitescu M. Opioid-free perioperative analgesia for hemicolectomy in a patient with opioid-induced delirium: A case report and review of the analgesic efficacy of the alpha-2 agonist agents. *Pain Practice*. 2012; 12(8):656-662.
5. Adams ML, Arminio GJ. Non-pharmacologic pain management intervention. *Clin Podiatr Med Surg*. 2008 Jul;25(3):409-29.
6. Segall N, Bonifacio A, Schroeder R, Barbeito A, Rogers D, Thornlow D, Emery J, Kellum S, Wright M, Mark J. Can we make postoperative patient handovers safer? A systematic review of the literature. *Anesth Analg*. 2012 Jul;115(1):102-115.
7. Arora V, Johnson J, Lovinger D, Humphrey HJ, Meltzer DO. Communication failures in patient sign-out and suggestions for improvement: a critical incident analysis. *Qual Saf Health Care* 2005;14:401-7.
8. Macario A, Weinger M, Carney S, Kim A. Which clinical anesthesia outcomes are important to avoid? The perspective of patients. *Anesth Analg*. 1999;89:652-8.