Regional anesthesia for ischemic limb pain in a patient with widely metastatic clear cell carcinoma

Christopher J. Malgieri, MD; Elizabeth C. Eastburn, DO
Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children’s Hospital

Introduction
Ischemic limb pain from widely metastatic cancer is notoriously difficult to control with medical management alone. Regional anesthesia is traditionally contraindicated in situations necessitating therapeutic anticoagulation. In certain carefully selected patients, however, it can serve as a valuable adjunct to improve quality of life.

Case Description
A 13 year-old male with rapidly progressing clear cell sarcoma presents with paraneoplastic thrombosis in his right lower extremity and intense pain resistant to medical management. He originally presented four months earlier with intermittent abdominal pain, a limp, fatigue and unintentional weight loss. He was diagnosed with widely metastatic disease (Figure 1) and immediately began chemotherapy.

![Figure 1: CT Abd/Pelvis at original presentation. Large retroperitoneal mass with evidence of local invasion to bony structures and soft tissue. Diffuse lymphadenopathy is noted throughout imaging.](image)

During the months before this admission his pain levels worsened. Escalating opioid doses were augmented with standard adjuncts including NSAIDS, acetaminophen, and gabapentin. Patient-controlled analgesia (PCA) improved his pain scores temporarily, but as opioid requirements steadily increased he was eventually started on a ketamine infusion. Regional anesthesia was initially avoided as his diffuse thrombosis (Figure 2) necessitated tPA administration and subsequent anticoagulation with fondaparinux.

![Figure 2: Ultrasound imaging of right leg. Image on left is with compression. Large, non-compressible thrombus noted in femoral vein.](image)

Because of his poor prognosis, an interdisciplinary decision was made to proceed with regional anesthesia despite his risk of bleeding. His daily fondaparinux dose was temporarily held. The patient was brought to the OR and placed under general anesthesia for femoral and sciatic nerve catheter placement via ultrasound and nerve stimulation guidance. Catheters were tunneled approximately 3 inches from needle insertion site. The patient tolerated the procedure well and was returned to the inpatient oncology service without issue. Initial boluses of 0.2% and 0.5% ropivacaine in the femoral and sciatic catheters, respectively, were followed with continuous infusions of 0.2% ropivacaine. Daily anticoagulation dose was administered two hours after procedure ended.

![Figure 3: PCA usage by daily fentanyl dose. Peripheral nerve catheters were placed on day no. 5. During perioperative period (4 hours), PCA was not active. Extrapolated dose is included. Pain in right leg improved after blockade. Since pain scores were not consistently recorded, improved analgesia was best demonstrated by the attenuation of opioid demand escalation (Figure 3). He was discharged home five days after procedure with home hospice care. Catheter sites were inspected daily by either a home care nurse or anesthesiology pain service member. The patient experienced continued hypoesthesia and good analgesia in his right leg for the next three weeks. At that time, the local anesthetic was tapered and the catheters removed. No evidence of bleeding was ever noted on exam. He passed away two days after removal of catheters.](image)

Conclusion
Bleeding diathesis should not preclude the consideration of regional anesthesia in a terminally ill patient with poorly controlled pain.