

SURGICAL PLACEMENT AND
POST-OP MANAGEMENT OF
LUMBAR MULTIFIDUS AND
ERECTOR SPINAE NERVE
BLOCK CATHETERS FOR
COMPLEX LUMBAR SURGERY

John N Yi M.D.¹
Chase Foster M.D.², Eric Heinz M.D.¹,
Michael Rosner M.D.², Moshe Chinn M.D.¹

¹ Dept of Anesthesiology & Critical Care Medicine, George Washington University School of Medicine & Health Sciences, Washington DC, USA
² Dept of Neurosurgery, George Washington University School of Medicine & Health Sciences, Washington DC, USA

INTRO

- Significant postoperative pain from complex lumbar spinal fusions originate from trauma around facet joint/pedicle, alongside muscle dissection leading to multifidus/erector spinae muscle spasm.
- This case study showcases unique collaboration between Anesthesia, Chronic Pain, and Neurosurgery to figure out a “continuous/adjustable medical branch block” in acute postoperative period.
- Due to wide field of surgery, ESPB theoretically could be placed under direct visualization.

MATERIALS & METHODS

- Patient informed consent obtained.
- ESPB Catheter Placement Technique
 - Proceduralist scrubbed into surgical field for performance under strict sterile conditions due to open incision.
 - Cobb elevator was used to retract erector spinae/multifidus muscle laterally off base of transverse process.
 - 4-inch BBraun 18g block needle was placed through skin above incision (cranial-to-caudal trajectory) until touching Cobb.
 - Block needle slid down cobb until resting securely on transverse process.
 - Cobb removed, and catheter advanced along the transverse process.
 - Final visualization was made to ensure good placement of nerve block catheter. Catheters were capped with sterile alligator clamp.
 - After surgical closure, catheter were bolused with local anesthetic (bupivacaine).

In this patient with only moderate pain relief after prior spine surgeries, novel placement & implementation of ESPB nerve block provided more effective pain control whilst utilizing little/no PRN opioids.



Figure 1: ESPB Catheters after placement and prior to surgical closure.

RESULTS/CASE REPORT

- 73 y/o F with hx of chronic back pain & lumbar stenosis with prior L5-S1 fusion presenting for L5/S1 MAST TLIF.
- Prior surgery complicated by severe opioid-induced constipation requiring further hospitalization. Opioid-sparing pain management requested by patient.
- Intraoperative general anesthesia maintained with TIVA (prop/ketamine/precedex). Intraoperative ESPB placed under ultrasound for this 2nd surgery, and Ropi 0.25%, 20cc bolused.
- Catheters connected to Sapphire pumps. Postoperative course otherwise uncomplicated and catheters bolused/pulled on POD2.
- Patient presented again 2.5 months later with further revision surgery, this time full L2-S1 decompression. Due to large open incision, decision made this time to place L4 catheters under direct visualization. Bolused bupri 0.25%, 10cc.
- Patient discharged home on POD4 with good pain control and not requiring IV push PRN opioids since surgery.

DISCUSSION

- Patient described ESPB technique as “only thing that really worked”, with objective pain scores reflective of that statement.
- Little/no PRN opioid medications were needed to control pain.
- Titration of ESPB catheters worth was worth focusing, as larger doses led to significant and bothersome leg numbness/heaviness.
- Limitation of this novel method is that it requires technical expertise and high degree of trust/collaboration with surgeons.
- Since this case, technique has undergone slight modification and has been performed for other patients.
- Of note, the technique was taught to our neurosurgical colleagues as an option for postoperative pain management for future complex lumbar spine surgery.



Take a picture to
download the full paper

