



Continuous Dual Erector Spinae Plane Blocks in a Complex Vascular Thoracobifemoral Bypass Surgery for Aortoiliac Occlusive Disease

Zahraa Majeed, MBCHB, MBA, MS; Eeshwar K. Chandrasekar, MD, MPH; David Lyons, MD; Tasker Gundy, MD
Department of Anesthesiology, University of Rochester Medical Center, Rochester, NY



Introduction

Erector Spinae Plane (ESP) blocks are known for their versatility in providing analgesia for various thoracic and abdominal surgeries (1,2) and have demonstrated efficacy in reducing opioid consumption postoperatively (3).

Materials and Methods

Patient informed consent was obtained for submission of the case report. IRB approval was not necessary for a case report according to our institution.

Results/Case Report

A 52-year-old male with a medical history of chronic smoking (>40 pack years), hyperlipidemia, and hypertension was found to have total occlusion of the infrarenal abdominal aorta, bilateral common iliac arteries, and left external iliac artery warranting thoracobifemoral bypass surgery. Due to anatomical constraints, an endovascular approach was unsuitable, necessitating a complex open procedure involving visceral aortic thromboendarterectomy and graft. The anesthetic plan involved general anesthesia, airway control with a double-lumen tube, and appropriate monitoring and resuscitation lines. The surgical approach involved thoracotomy from T6 to the left anterior inferior iliac spine, with a 15 cm diaphragmatic division for exposure. In addition, a bilateral femoral cut down was made, the groin incisions were topicalized by the surgical team. Two left-sided ESP nerve block catheters were placed preoperatively at T6 and T11 levels to address the anticipated extent of postoperative pain. After successful placement, 30 cc of 0.25% Bupivacaine were administered in each of the ESP catheters. Intraoperatively the patient received 100 mcg of IV Fentanyl and 20 mg of IV Methadone, with no additional local anesthetic administered through the dual ESP catheters.



Image 1a and 1b: Surgical incision involving thoracotomy from T6 to left anterior inferior iliac spine

Results/Case Report (cont.)

The patient was extubated the same evening post-operatively. In the ICU, the patient received a continuous infusion of 0.125% Bupivacaine at 8 ml/hr. through each catheter. Other adjuncts included Tylenol 1000 mg Q8 hours, hydromorphone 0.5 mg PRN, and daily 81 mg aspirin. Pain management outcomes were favorable, with the patient consistently reporting a pain VAS score of 2/10 at rest (occasional opioid supplementation was required during coughing and ambulation). The average daily consumption of Hydromorphone over the first six days post-surgery was 1.8 mg. The dual left ESP catheters were removed on the post operative day 6. Patient informed consent was obtained for submission of a case report. This case highlights the successful implementation of a multimodal pain management strategy, incorporating dual unilateral regional nerve block catheters to provide effective analgesia in a patient undergoing a challenging vascular procedure. The utilization of such techniques contributes to improved pain control, reduced opioid consumption, and enhanced postoperative recovery in complex surgical scenarios.

Discussion

This case study contributes to the growing body of evidence supporting the utility of ESP blocks in complex vascular surgeries, providing clinicians with valuable insights into optimizing pain management strategies for enhanced patient outcomes.

References

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