

Bypassing the Bleed: EOI Blocks for Safe Post-Hepatectomy Analgesia in Hemophilia A

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Introduction

Managing acute postoperative pain is challenging in patients with high opioid tolerance and coagulopathy. Both factors limit conventional regional anesthesia (such as epidural placement) and the use of NSAIDs, while concurrently limiting the efficacy of opioids for postoperative analgesia.[1,2] In high-risk procedures such as hepatectomy, a more superficial analgesic approach may be safer, such as the external oblique intercostal (EOI) block.[1,3]

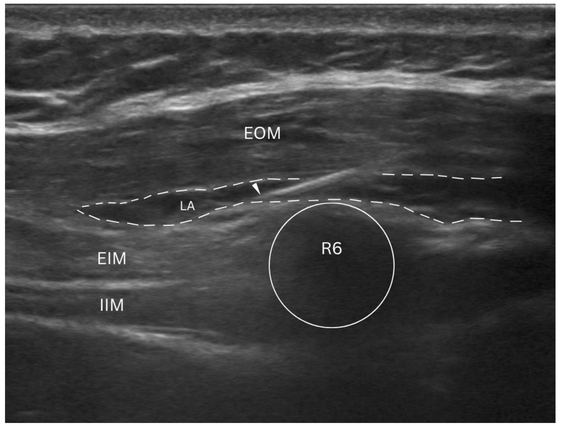


Figure 1: Ultrasound-guided external oblique intercostal (EOI) block. EOM, external oblique muscle; R6, sixth rib; EIM, external intercostal muscle; IIM, internal intercostal muscle; LA, local anesthetic containing liposomal bupivacaine; white arrowhead, tip of the needle.

Case Description

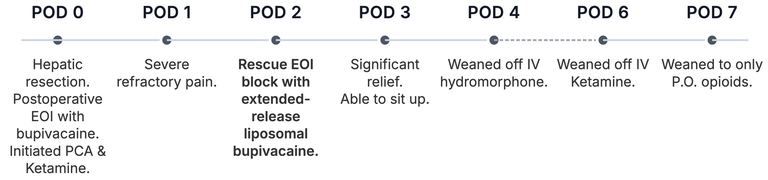


Figure 2: Timeline of the clinical course from postoperative day (POD) 0 until complete weaning of IV analgesics on POD 7.

A 59-year-old male with hemophilia A, history of non-small-cell lung cancer, and chronic high-dose opioids (home oxycodone 80 mg TID, 360 MME) underwent hepatic resection for hepatic cell carcinoma. Postoperative pain on post operative day (POD) 0 was managed with home oxycodone, patient-controlled analgesia (PCA) IV hydromorphone, tizanidine, and continuous ketamine infusions. NSAIDs and acetaminophen were withheld due to coagulopathy and hepatic resection. Postoperative external oblique intercostal (EOI) block with bupivacaine was performed due to concern for insufficient analgesia with patient's high baseline opioid tolerance. On POD 1, patient reported EOI block had some benefit, but pain remained intolerable. On POD 2, he received rescue EOI block, this time with extended-release liposomal bupivacaine with significant improvement in pain. By POD 3, significant pain relief allowed him to sit up on a chair. The PCA was weaned off by POD 4. Ketamine was stopped by POD 6 and successfully transitioned to only oral opioids by POD 7 without further pain flares.

Clinical Takeaways

Advantages of EOI Block:

- Targets anterior and lateral cutaneous branches of intercostal nerves between T6-10 located in the fascial plane between the external oblique and intercostal muscles. Offers somatic coverage for subcostal incisions.[1]
- Targets a superficial location remote from the vertebral canal and major vessels with lower bleeding risk and serves as a potentially safer alternative when conventional regional options are contraindicated.[1,2]
- EOI blocks can be repeated multiple times if the initial block is inadequate, or if prolonged analgesia may be required for continuous catheter analgesia.[1,4]

Role of Liposomal Bupivacaine:

- May provide better relief with liposomal bupivacaine which encapsulates local anesthetic in multivesicular liposomes with gradual release over 72 hours, compared to plain bupivacaine with 12-24 hours.[4,5]
- Usage often limited due to higher cost compared to plain bupivacaine. [4,5]

References

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