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Bilateral External Oblique Intercostal Blocks for Bilateral Lung Transplant Pain Management in Anticoagulated Patient on VV-ECMO

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★ KEY FINDING

Bilateral EOI blocks delivered 48 hours of opioid-free analgesia, resolved life-threatening delirium, and enabled safe ECMO decannulation

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in a post bilateral-lung transplant patient on VV-ECMO with bivalirudin anticoagulation, where neuraxial techniques were absolutely contraindicated.

SCAN FOR FULL CASE REPORT
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INTRODUCTION

Bilateral lung transplantation via clamshell incision causes severe postoperative pain. Patients on VV-ECMO require systemic anticoagulation, creating **absolute contraindications to neuraxial analgesia**.

EOI blocks target a **superficial fascial plane** remote from neuraxial structures — safe and effective even under therapeutic bivalirudin.

PATIENT PRESENTATION

65-year-old male, ASA IV — COPD/emphysema, hypoxic-hypercapnic respiratory failure on NIV Pulmonary hypertension + mild RV dysfunction Bilateral lung transplant via clamshell + cryoablation; VA→VV-ECMO; ischemic time 505 min

Extubated POD 2; severe agitation POD 3 on bivalirudin

Pain 8–9/10; opioids worsened mental status

→ **Epidural contraindicated.**

EOI BLOCK TECHNIQUE

Ultrasound-guided bilateral injection between the **5th and 6th ribs**, 22-gauge 5-cm needle.

From a mixture of 30 mL of bupivacaine mixed with 20 mL of liposomal bupivacaine we injected 25 mL per side

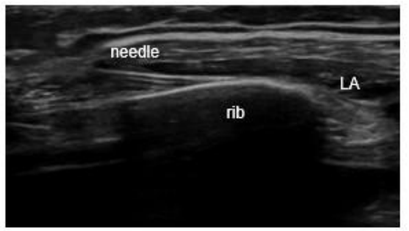

Fig. 1 — Ultrasound: needle tip in fascial plane between EOM and ribs (LA = local anesthetic spread)

OUTCOMES

- ✓ **Pain: 8–9/10 → 2/10** immediately post block
- ✓ **Zero opioids** for first 24 hours Delirium **fully resolved**; line-pulling ceased
- ✓ ECMO **decannulated POD 6** Pain 0–4/10 for **48 hours** Discharged after secretion management

✓ Opioid-Free 24h ✓ Delirium Resolved ✓ ECMO Decannulated

PAIN & OPIOID TIMELINE POST-BLOCK

Pain Scores and Opioid Requirements Following Bilateral External Oblique Intercostal Blocks Post-Bilateral Lung Transplant via Clamshell Incision

Low Pain (0-2/10) Moderate Pain (3-5/10) Severe Pain (6-10/10)

Time Post-Block	Pain Score	Opioid Requirements	Morphine Equivalent (mg)
1 hour	0/10	None	0
6 hours	2/10	None	0
12 hours	0/10	None	0
24 hours (Post-Procedure Day 1)	2/10	None	0
48 hours (Post-Procedure Day 2)	4/10	Fentanyl 50 mcg IV	5
72 hours (Post-Procedure Day 3)	8/10	Hydromorphone 0.2 mg IV	1

CONCLUSION

Bilateral EOI blocks provided **48 hours of excellent analgesia** in a critically ill, anticoagulated post-lung transplant patient on VV-ECMO.

Blocks eliminated opioids during the critical window, resolved life-threatening agitation, and facilitated ECMO decannulation.

EOI blocks are a safe, effective neuraxial alternative when epidural is absolutely contraindicated.

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