

Fentanyl-Only Thoracic Epidural as a Bridge After Exparel Use: A Strategy for Acute Thoracotomy Pain Management

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Introduction

Thoracotomy is associated with severe postoperative pain driven by factors such as **nerve injury, myofascial disruption, and chest tube irritation**.¹

Effective analgesia is essential to:

- support respiratory mechanics
- reduce pulmonary complications
- enable early mobilization²

Regional techniques such as thoracic epidural analgesia and paravertebral blocks and intercostal nerve blocks are routinely used.³

Liposomal bupivacaine (Exparel)

- gained popularity for surgical infiltration and peripheral nerve blocks due to its prolonged duration of action⁴
- has 96-hour restriction on additional local anesthetic administration⁵
- challenging when patients experience severe breakthrough pain before the window elapses

We present a case demonstrating an **effective alternative strategy** for managing acute thoracotomy pain after recent Exparel administration, during which epidural infusions with local anesthetics were contraindicated.

Methods

This report describes a single-patient case.

Per institutional policy, the case was deemed exempt from IRB review as it contains no patient-identifiable information.

Written informed consent for procedures and publication was obtained from the patient.

Case Description

A 64-year-old man with esophageal adenocarcinoma underwent robotic-assisted three-hole esophagectomy, thoracoscopic mediastinal lymphadenectomy, jejunostomy, and partial thyroidectomy.

Postoperative analgesia

- Bilateral ultrasound-guided rectus sheath catheters infusing 0.1% ropivacaine at 10 mL/hr
- removed on postoperative day 5
- Also managed with a hydromorphone PCA

Developed an anastomotic leak with a reactive right pleural effusion on Day 6.

- Returned to the operating room for diagnostic VATS, thoracotomy, chest washout, and intercostal rotational muscle flap repair.
- At surgical closure, **Exparel was infiltrated into the thoracotomy site**.

Postoperative analgesia revisited

- Following reoperation, the patient experienced **severe and refractory pain** despite multimodal therapy:
 - Jejunostomy-administered oxycodone, hydromorphone PCA, ketorolac, and a ketamine infusion
- Additional local anesthetics were **contraindicated** for 96 hours due to **Exparel**

Treatment

- Thoracic epidural catheter was placed **with fentanyl-only infusion** (2 mcg/mL at 10 mL/hr)
 - Resulted in substantial improvement in pain control and respiratory comfort.
- **After the 96-hour Exparel interval elapsed**, epidural infusion was transitioned to **0.125% bupivacaine with fentanyl 2 mcg/mL at 8–10 mL/hr**.

Transition provided further analgesic benefit and enabled discontinuation of both the hydromorphone PCA and ketamine infusion, with the patient requiring only intermittent oxycodone via jejunostomy tube for breakthrough pain.

Discussion & Conclusion

This case illustrates an effective approach to managing severe postoperative thoracotomy pain when recent Exparel infiltration limits the use of additional local anesthetics.

A fentanyl-only thoracic epidural can serve as a **safe and effective bridging strategy** until local anesthetics may be reintroduced.

This method offers meaningful analgesia, may reduce reliance on systemic opioids and infusions, and supports respiratory function during the postoperative period.

These findings highlight a practical technique for acute pain management in patients exposed to Exparel when conventional regional options are temporarily restricted.

References

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Figure 1: Timeline

