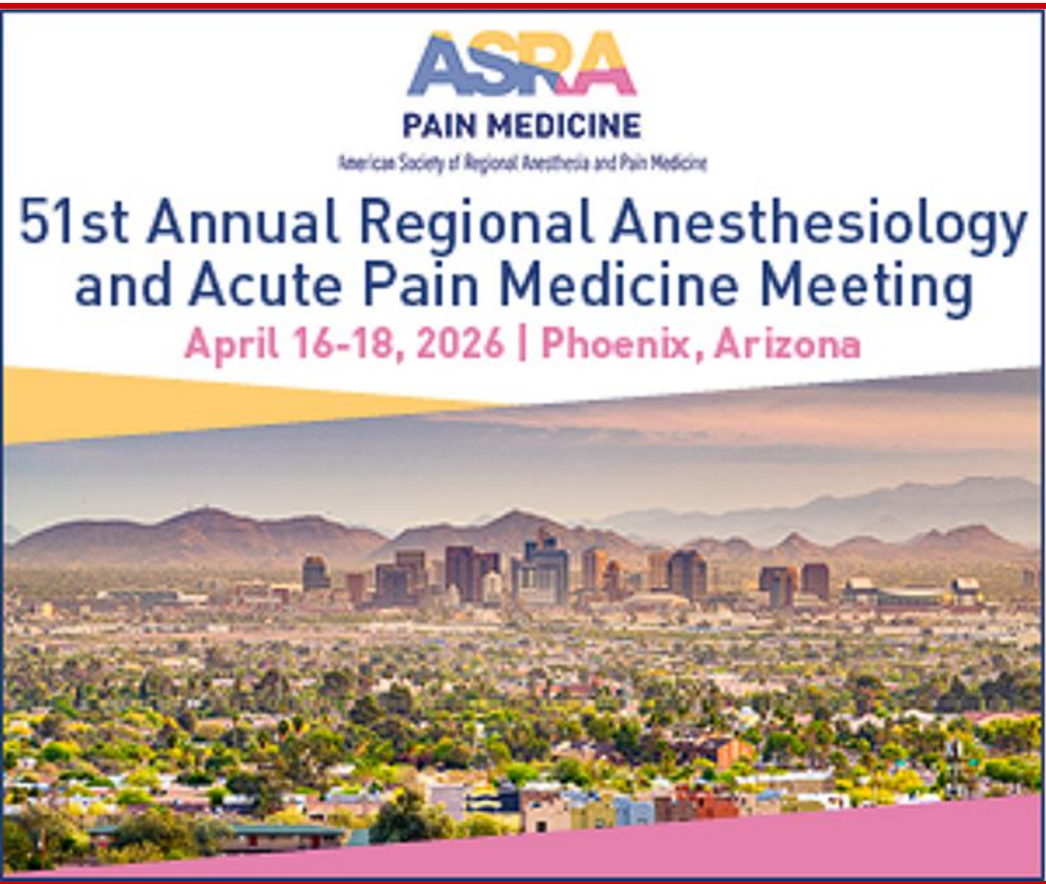


External Oblique Intercostal Catheters for Liver Transplant Recipient with Severe Thrombocytopenia

Rachel Corbitt MD | Carson Bridgman MD | University of Wisconsin School of Medicine and Public Health



Introduction

- The External Oblique Intercostal (EOI) nerve block is a relatively new fascial plane block for post-operative analgesia of the **upper anterior and lateral abdominal wall**.¹ The EOI fascial plane is amenable to placement of nerve catheters for ongoing administration of local anesthetic.²
- The EOI block is **superficial**, performed under ultrasound guidance **superior to surgical dressings**, and can be performed while the patient is **sedated** and **supine**. It has emerged as an analgesic option for patients undergoing major abdominal surgery to reduce post-op pain and facilitate recovery.³
- We report on the use of **EOI peripheral nerve catheters (PNCs)** for post-op analgesia in a **liver transplant recipient** with **severe thrombocytopenia**.

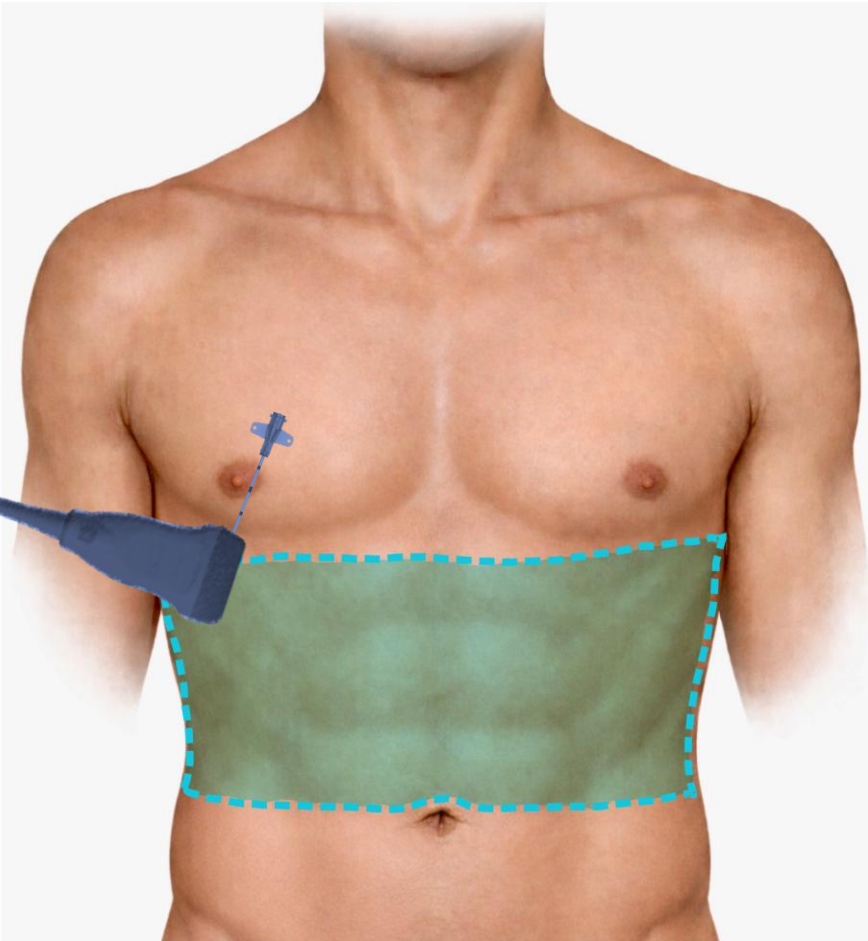


Figure 1. Depiction of EOI catheter placement and expected distribution of sensory changes (T6-T10 lateral and anterior cutaneous branches of thoracoabdominal nerves).

Case Description

- 57-year-old female with **ESLD** secondary to alcohol use, Roux-en-Y gastric bypass, mild pulmonary HTN, anxiety, and fibromyalgia
- DBD liver transplant via **bilateral subcostal incision** complicated by **significant blood loss** (35 liters) and **massive transfusion**
- Bilateral EOI catheter placement for post-op pain control on POD1 in the ICU prior to extubation
- Platelet count of **18 K/uL** and **INR 1.4** prior to PNC placement

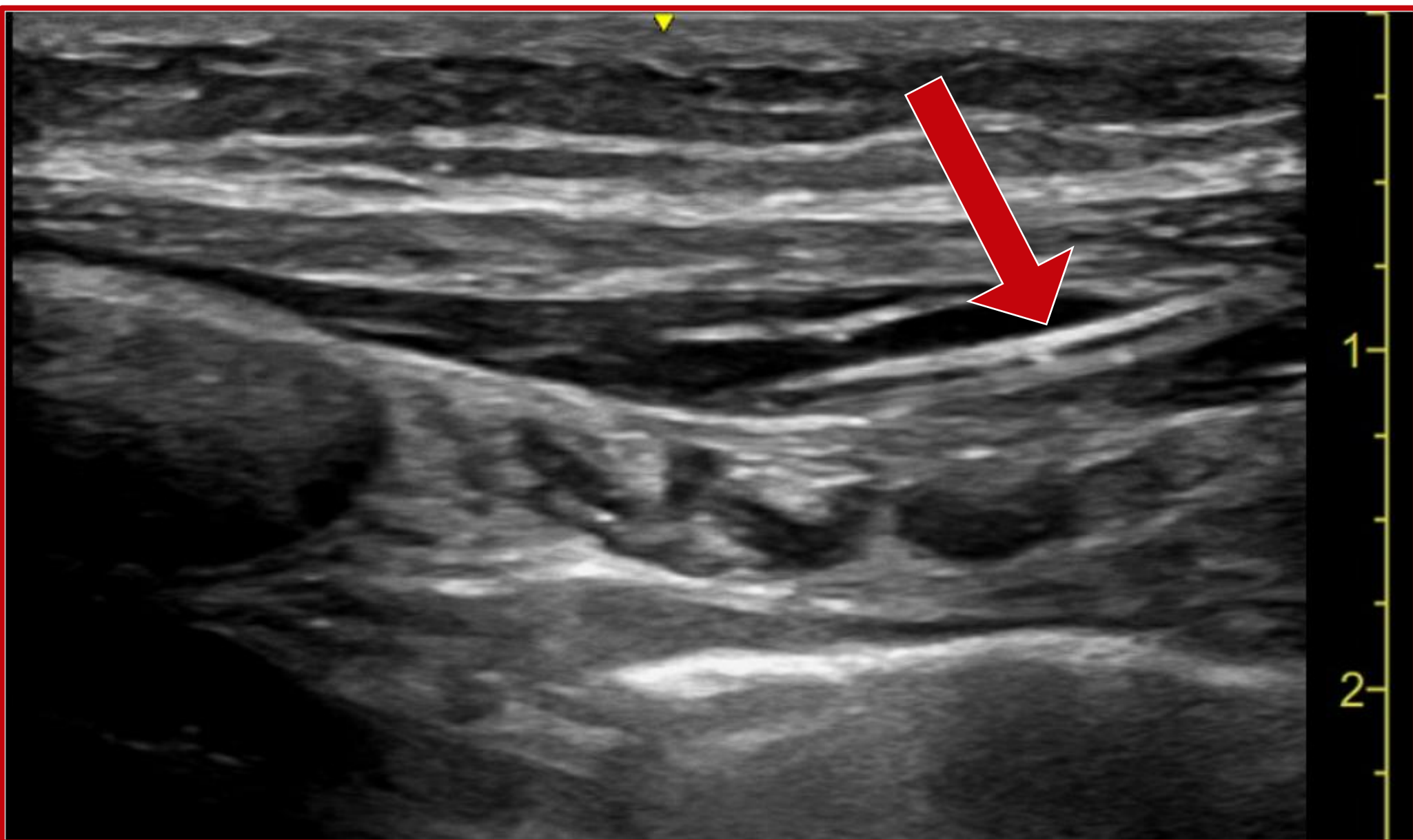


Figure 2. Ultrasound image of nerve catheter in the EOI plane (deep to the external oblique muscle and superficial to the ribs and intercostal muscles).

Catheter Management

- Ropivacaine 0.15% 8 mL per catheter as an hourly bolus
- Extubated on post-op day two.
- Twice daily visits by the Acute Pain Service with the catheter sites assessed each morning.
- Other pain meds while PNCs were in place: acetaminophen 500 mg q6h scheduled, two doses of oxycodone 10 mg
- Mild to moderate pain throughout the post-op period.
- PNCs removed on POD5 with platelet count 24 K/uL and INR 1.1.

	Evening after surgery	POD1 morning (prior to PNC placement)	POD2	POD3	POD4	POD5 (prior to PNC removal)
Platelet count (K/uL)	17	18	19	15	Not checked	24
INR	1.3	1.4	1.4	1.3	1.2	1.1
TEG	Normal R time Decreased MA (<40 mm)		Not checked			

Table 1. Platelet count, INR, and TEG results prior to and during EOI catheter use.

Discussion

This case demonstrates the successful use of continuous EOI blocks for post-operative pain control in a patient with thrombocytopenia after a liver transplant.

The EOI block is proposed as an **alternative to neuraxial analgesia**, which is contraindicated in patients at high risk of bleeding, such as those with coagulopathy associated with liver disease.

- The 2025 AABB and the ICTMG recommend (“conditional recommendation; very low–certainty evidence”) platelet transfusion for IR procedures if platelets are $<20 \times 10^9/L$ for low-risk procedures and $<50 \times 10^9/L$ for high-risk procedures.⁴
- National guidelines recommend against prophylactic transfusion of platelets for low-risk procedures (such as paracentesis and thoracentesis) in stable cirrhosis patients.^{5,6}
- A practice advisory by the Regional Anesthesia and Acute Pain Section of the Canadian Anesthesiologists Society categorized serratus anterior blocks and intercostal blocks as “intermediate” risk (expert opinion).⁷
- There are no established formal guidelines regarding minimum platelet count or bleeding risk for the EOI block specifically.

With the expanding clinical use of fascial plane blocks, further research is needed to better define minimum platelet thresholds for fascial plane catheters to guide their use as a safe component of multimodal analgesia.

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