



Pre-Emergence External Oblique Intercostal Block for Analgesia in a Hepatic Resection Patient at High Risk for Coagulopathy

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Introduction

Major liver resection is frequently associated with significant postoperative pain, and thoracic epidurals have traditionally been used to optimize analgesia; however, extensive hepatic surgery carries a high risk of perioperative coagulopathy, which may preclude patients neuraxial techniques.^{1,2} Interfascial plane blocks offer a potentially safer alternative in this setting.^{3,4}

Materials and Methods

A literature review was conducted to evaluate the safety and efficacy of interfascial plane blocks in patients at risk for perioperative coagulopathy. This case report does not contain any patient identifiable information; therefore, it is exempt from IRB review as per Colorado Multiple Institutional Review Board (COMIRB) policy.

Case Report

A 25-year-old previously healthy male with a metastatic testicular germ cell tumor involving the liver presented for planned hepatic resection. Metastases encased the major hepatic vessels, and the surgical plan included venovenous bypass with a high likelihood of hepatic autotransplantation. Given the anticipated risk of perioperative coagulopathy and a preoperative platelet count of 84, neuraxial analgesia was avoided despite initial consideration of thoracic epidural placement.^{1,2}

General anesthesia was induced uneventfully. Multimodal analgesia was administered during the 8- hour procedure in lieu of epidural analgesia, including methadone 20 mg, fentanyl, ketamine and a small dose of hydromorphone. Prior to emergence, bilateral ultrasound-guided EOI blocks were performed to provide analgesia for the large upper abdominal incision.^{3,4} The patient reported excellent post-operative pain control, and only required 0.2mg of hydromorphone in the first 24 hours postoperatively.

Main Takeaways

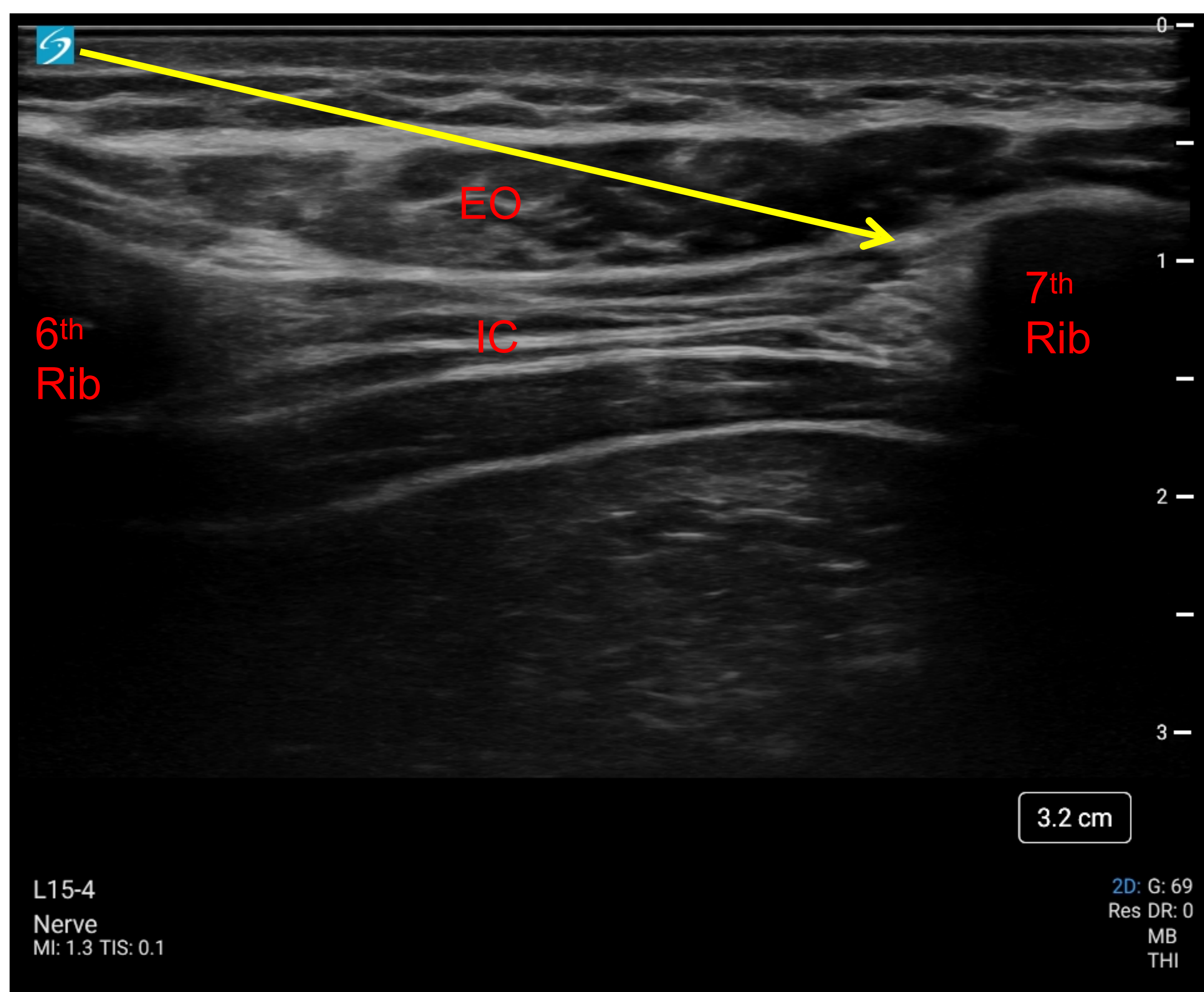


Figure 1. Ultrasound image demonstrating the anatomy and needle trajectory of an EOI block. The probe is placed on the patient in an anteromedial to posterolateral direction at the level of the xiphoid process.

- A case report illustrating **alternative analgesic strategy** to neuraxial in patients undergoing hepatic surgery that are **high risk for coagulopathy**.

- Interfascial plane blocks provide a potentially **safer regional anesthesia alternative** when neuraxial techniques are avoided in high-risk hepatic surgery patients.

- Pre-emergence oblique intercostal (EOI) block can provide **effective analgesia** for upper abdominal incisions when incorporated into a **multimodal analgesic strategy**.

- EOIs represent a **practical and low-risk regional technique** for higher risk patients.

Discussion

- EOI blocks can be a valuable addition to a multimodal analgesic plan for major liver resection while avoiding the risks associated with neuraxial techniques in patients at high risk for coagulopathy.^{1,2}
- External oblique intercostal block targets the anterior cutaneous branches of the lower thoracic nerves in a superficial fascial plane.
- The EOI block is technically simple, performed in a superficial tissue plane, and provides reliable coverage of upper abdominal incisions.^{3,5}
- The target block location is a compressible tissue plane, which may provide an additional layer of safety in patients with coagulation abnormalities.
- Interfascial plane blocks should be considered a valuable component of multimodal analgesia for high-risk hepatic surgery patients.

Resources

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4. Elsharkawy H, El-Boghdady K, Barrington M. Quadratus lumborum block: anatomical concepts, mechanisms, and techniques. *Anesthesiology.* 2019;130(2):322–335.
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