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Letter to Editor

Tailored pain relief: External oblique intercostal plane block and site-specific analgesia

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Dear Editor,

The external oblique intercostal plane block (EOIPB) is a relatively new regional anaesthesia (RA) technique used for perioperative analgesia in midline and upper abdominal surgeries.[1,2] Rib surgeries, such as excisions and biopsies, often cause severe pain that may impair respiratory function and increase the risk of postoperative pulmonary complications. We present the application of EOIPB for postoperative analgesia following seventh rib excision, emphasizing its role in procedure-specific pain relief.

A 52-year-old male (91 kg, 170 cm; BMI 31.49 kg/m^2), American Society of Anaesthesiologists physical status II, hypertensive and diabetic, presented with a discharging sinus in the right hypochondrium. Four months prior, he had incision and drainage for an infected hematoma from a fractured ninth rib under general anaesthesia (GA). Radiological findings indicated costochondritis at the right seventh costochondral junction, reactive osteitis of the corresponding rib, and subcutaneous collections extending into the sinus tract. Segmental costectomy of the seventh rib and sinus tract debridement were scheduled (**Figure 1**a). Written informed consent was obtained from the patient and relatives after discussing perioperative management.

The surgery was conducted under GA with standard monitoring. Multimodal analgesia (MMA) included intravenous (IV) fentanyl 150 µg, paracetamol 1g, and ketorolac 30 mg. After completion of the surgery, ultrasound-guided EOIPB was performed with a high-frequency linear transducer (Sonosite HFL 38xp/13–6 MHz; Fujifilm SonoSite Inc., Bothell, WA, USA) under all aseptic precautions (**Figure 1**b). With the patient's arm slightly abducted, the sixth rib was located by craniocaudal scanning, starting from the second rib below the clavicle. At approximately 1-2 cm lateral to the mid-clavicular line, the interfascial plane between the external oblique muscle and the external intercostal muscles was identified. A 50 mm 22G needle was inserted in-plane, and 0.2% Ropivacaine (20 mL) with Dexamethasone (8 mg) was injected incrementally following negative aspiration blood or air. Post-block scanning confirmed cephalocaudal spread of the local anaesthetic (LA) solution (**Figure 1**c). Postoperatively, the patient received IV paracetamol 1 g every 6 hrs, ketorolac 30 mg every 12 hrs, and oral pregabalin 75 mg once daily. His pain scores (static and dynamic) remained between 0–3 on the numeric rating scale up to 24 hours post-surgery. He maintained normal respiratory function and did not require any additional rescue analgesics. The rest of his postoperative recovery was uneventful.

EOIPB provides reliable analgesia by targeting both the anterior division of the lateral and the lateral division of the anterior cutaneous branches of the intercostal nerves (ICNs). It ensures involvement of T6-T9 at the midline and T6-T10 dermatome at the anterior axillary line.[3] This was relevant in our patient, as comprehensive coverage of the ICNs at or

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below T7 was crucial for postoperative analgesia of the seventh rib and surrounding area.

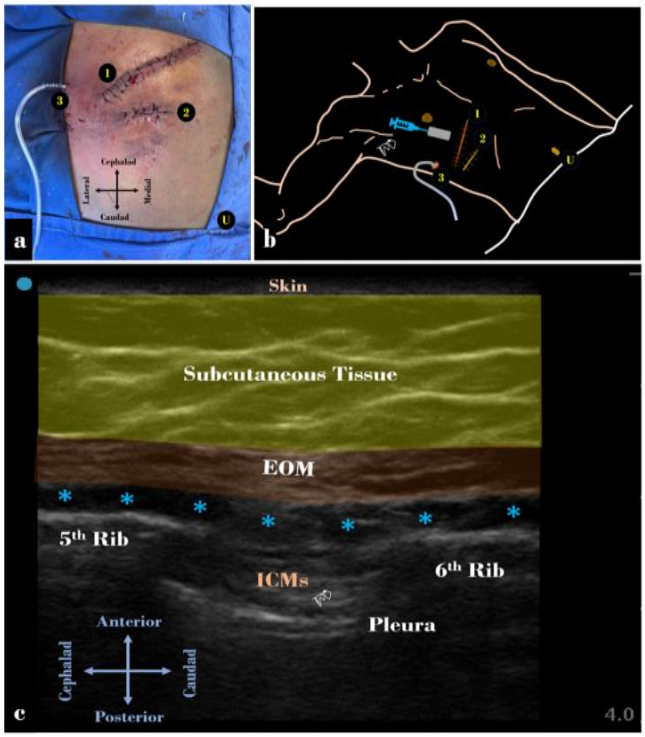

Figure 1: a): Right upper abdominal area showing the main surgical incision for rib excision (1), satellite incision for debridement of the sinus tract (2), and surgical drain insertion site (3); U = umbilicus; **b):** Schematic diagram illustrating patient position, surgical incision sites, drain insertion site, ultrasound transducer position, and EOIPB performance site; **c)**: Post-EOIPB sonogram showing sonoanatomy and local anesthetic (LA) spread; EOM = External oblique muscle, ICMs = Intercostal muscles, Blue asterisks represent LA spread

We considered and ruled out other RA options, such as, neuraxial block (low thoracic spinal or epidural), ipsilateral paravertebral block (PVB), erector spinae plane block (ESPB), rhomboid intercostal & sub-serratus (RISS) block, superficial/deep serratus anterior plane block (SAPB), and modified BRILMA (block of the lateral branches of the intercostal nerves in the mid-axillary line) in our patient. EOIPB was selected for RA to avoid the complexities of neuraxial or PVB. It offers better coverage of the terminal branches of ventral primary rami compared to ESPB. RISS block was ruled out due to its unwarranted coverage above the T6 and inconsistent spread below T7 dermatomes, failing to target the required region. BRILMA was avoided because of the proximity to the surgical site and the risk of erratic LA spread. SAPB, though typical for rib fractures and thoracic surgeries, shows inconsistent coverage below T7.[4] EOIPB is performed in supine position, avoiding the need for repositioning required by other blocks. It can be administered before or after surgery, as the injection site is away from the surgical site. It also produces consistent results, making it highly practical for similar rib-related, lower thoracic, and upper abdominal surgeries.

In conclusion, EOIPB, as part of MMA, provided effective pain relief for our patient by reliably covering the necessary terminal neural elements and ensuring better postoperative pain control in the targeted area. Thus, EOIPB may support early recovery by reducing respiratory hindrance and improving patient comfort.

1. Conflict of Interest

None.

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