

LETTER TO THE EDITOR

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# Incision congruent regional analgesia for postoperative pain management following a giant gluteal neurofibroma excision in a pediatric patient

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Dear Editor,

A mass in the lumbosacral region near midline poses a challenge to perform neuraxial blocks in pediatric patients. In such situations, the peripheral nerve blocks may be used following surgical removal of the lump to provide optimal postoperative analgesia. Here, we describe pain management of a child following excision of a giant gluteal neurofibroma with site-specific anatomical landmark-guided regional anesthesia techniques.

An 8-year-old boy (weight 18.7 kg, height 124 cm), American Society of Anaesthesiologists (ASA) physical grade I was admitted with complaints of pain and a lump in the left gluteal region for 8 months. On examination, a solitary, non-mobile, firm to hard swelling of 12 cm × 10 cm size was noted with smooth and well-defined margins. The overlying skin was mobile, and there was no rise in local temperature. Left hip range of motion was normal with no distal neurovascular deficit. His pain intensity was 8/10 on the numeric rating scale (NRS) score, and there was no clinical neurological deficit. Magnetic resonance imaging and core needle biopsy revealed the lump as a benign neural tumor, neurofibroma (Fig. 1a). Systemic examination, airway evaluation, and blood investigations were unremarkable. Excision of the lump was planned. The perioperative management plan was discussed with the parents, and informed written consent was obtained.

The patient was premedicated with intravenous midazolam 2 mg in the preoperative room. Once the patient was wheeled into the operating room, all standard ASA

monitors were attached. General anesthesia was induced with intravenous propofol 40 mg, fentanyl 40 µg, and atracurium 10 mg. His trachea was intubated with a 6.0-mm cuffed endotracheal tube. Radial artery cannulation was performed after induction for arterial blood pressure monitoring. Anesthesia was maintained with nitrous oxide to oxygen (60:40), titrated desflurane, and controlled ventilation. Intraoperatively, intravenous fentanyl intermittent bolus of 0.5 µg/kg/h and paracetamol 15 mg/kg was administered for analgesia. Surgery was performed in the right lateral position and lasted for 3 h. The incision was extended from the left gluteal region to the lateral part of the upper thigh (Fig. 1b). The root of the mass appeared to arise through the sciatic notch encircling around the sciatic nerve, and it did not adhere to adjacent structures or blood vessels. The tumor was made free from its bed, and the whole mass was excised carefully, preserving the anatomic integrity of the sciatic nerve. Total blood loss was 600 ml, which was replaced by crystalloid and packed red cells.

The peripheral nerve blocks were performed at the end of surgery before the reversal of the neuromuscular blockade. Left-sided anatomical landmark-guided lumbar erector spinae plane block (LESPB) was performed at the L4 transverse process level. Following strict aseptic precautions, a 21-G Tuohy needle was inserted 2.5 cm lateral to the spinous process where the L4 transverse process tip could be palpated (Fig. 1c). The needle was advanced perpendicular to the skin, and the transverse process was contacted at a depth of 1.5 cm from the skin. A volume of 15 ml of 0.2% ropivacaine and 2 mg dexamethasone was injected after negative aspiration for blood. Left-sided lateral femoral cutaneous nerve (LFCN) block was performed with 5 ml of 0.2%

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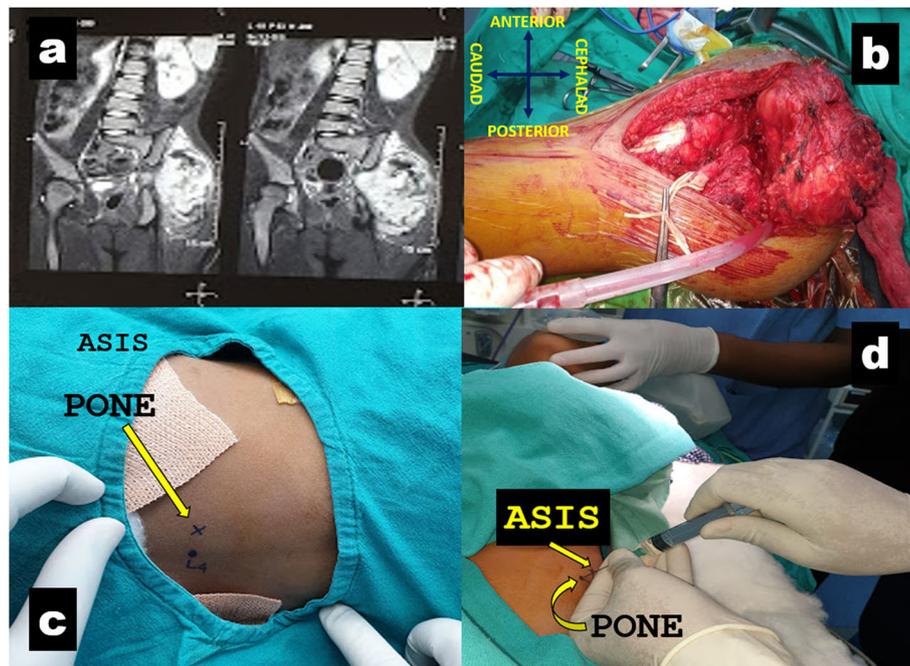
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**Fig. 1** **a** MRI scan of benign solitary gluteal neurofibroma. **b** Incision and excision of encapsulated tumor. **c** Anatomical landmark for LESP. **d** Anatomical landmark for LFCN block. ASIS anterior superior iliac spine, PONE point of needle entry

ropivacaine at a point 1 cm caudal and 1 cm medial to the anterior superior iliac spine (Fig. 1d). The effect of muscle relaxant was reversed, and his trachea was extubated without any complications. Postoperatively, intravenous paracetamol 250 mg 6-hourly and diclofenac 25 mg 12-hourly were administered. The NRS score was zero until 24 h following surgery, and he did not require any opioids during the postoperative course. The patient was pain-free and comfortable in the postoperative ward and was discharged after 5 days.

The efficacy of ultrasound-guided LESP in the pediatric population has been reported for various inguinal and lower limb surgeries without any complications (Aksu and Gurkan 2019; Lima et al. 2020). Although anatomical landmark-guided LESP was described in adult patients (Dey et al. 2020), this is the first application in a pediatric patient to the best of our knowledge. We opted for LESP and LFCN block to cover the long incisional wound involving the possible dermatomes from L2 to L5 and S1 as the central neuraxial block was not feasible. The fluoroscopy study in adult patient demonstrated the craniocaudal spread of local anesthetic (LA) from L2 to S1 following injection of 30 ml volume at L4 level (Balaban and Aydın 2019). The distance from the transverse process to the spinous process and the depth of the transverse process from the skin may vary with demographic parameters (Kirchmair et al. 2004). Although complications are rare because the site of LESP is far from any significant structures, the

dispersion of LA to the epidural, paravertebral or psoas compartment, inadvertent visceral or vascular puncture, and subsequent LA systemic toxicity are possibilities. Though correct identification and application of anatomical knowledge make this block simple and easy to perform, further investigation is warranted to validate its safety and reliability compared to fluoroscopy or ultrasound-guided techniques.

To conclude, the incision-specific consideration of regional anesthesia as an adjunct to multimodal regimen following excision of a giant gluteal neurofibroma provided adequate postoperative analgesia in our patient.

#### Abbreviations

ASA: American Society of Anaesthesiologists; NRS: Numeric rating scale; LESP: Lumbar erector spinae plane block; LFCN: Lateral femoral cutaneous nerve; LA: Local anesthetic

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#### Authors' contributions

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**Consent for publication**

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**Competing interests**

None

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