

Sacral erector spinae plane (S-ESP) block for postoperative pain management in lumbar disc hernia repair

Dear Sir,

Lumbar disc herniation is a common spinal disorder affecting an increasing number of individuals,^[1] often requiring discectomy as the primary surgical intervention. However, postoperative pain management for patients undergoing discectomy frequently proves inadequate. Yörükoğlu *et al.*^[2] demonstrated that a lumbar (L4) erector spinae plane (ESP) block effectively alleviated pain in patients following lumbar disc herniation surgery, leading to reduced opioid consumption post-operatively. We hypothesize that a sacral ESP block, as part of a multimodal anesthesia regimen, could offer optimal analgesia for hernia repair surgery intra- and post-operatively.

A 58-year-old male patient (175 cm in height, 80 Kg weight, BMI 26 Kg.m⁻²) ASA-II, with hypertension and L5-S1 lumbar hernia was scheduled for discectomy. With the patient informed written consent we performed an ultrasound-guided S-ESP block in a multimodal anesthesia plan and for post-operative pain control. With the patient in the prone position,

aseptically, under vital parameters monitored, an echogenic 80 mm needle was introduced in caudo-cranial direction at median crest of the first sacral vertebra [Figure 1]. After negative aspiration, a single injection was made comprising 0,375% ropivacaine 30 mL. Then, the patient was introduced in the operating room. Opioid-free general anesthesia was provided via orotracheal intubation and sevoflurane 0,5 MAC maintenance plus intravenous ketamine infusion (0,25 mg.Kg⁻¹.h⁻¹). No opioids were administered intra-operatively. Surgery (with the patient in prone position) lasted 148 min and it was uneventful. No complications were recorded. Before the end of surgery, intravenous paracetamol (1 g) was administered. At the emergence, the patient did not complain pain (NRS 0) and after 30 min of post-anesthesia care unit (PACU) observation, he was transferred to the ward with ALDRETE-score of 10. Intravenous paracetamol 1 g three times a day was administered. The patient did not report any complications with NRS-score < 4 in the following 48 h.

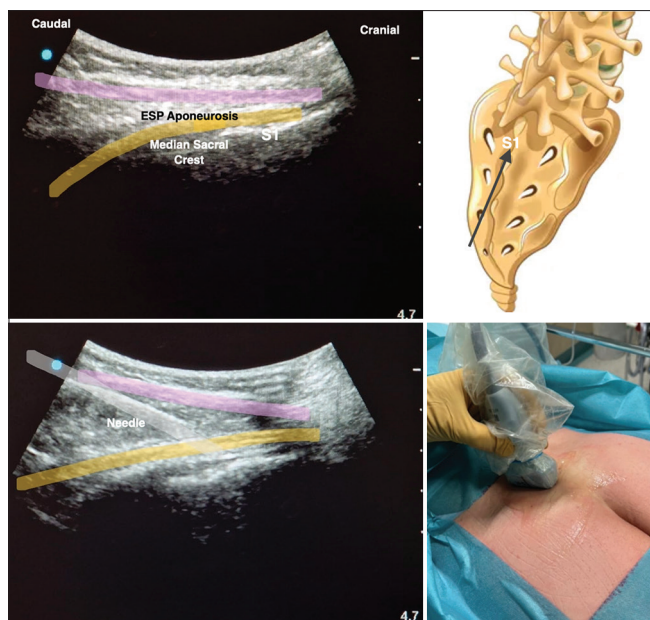


Figure 1: The sacral ESP block involves injecting medication into the plane of the sacral erector spinae muscles (multifidus muscle in particular). It is a relatively simple and superficial technique to perform. The sacral ESP block has been hypothesized to affect posterior branches of the sacral nerves as they come out of the dorsal sacral foramina together with the lumbar plexus due to potential local anesthetic cephalad spread. Figure shows “median” sacral approach in caudo-cranial direction with injection under the plane of erector spinae muscle aponeurosis. The spread of the injectate under the plane of erector spinae muscle aponeurosis was observed

The S-ESP was described in 2019 as new technique for sensory blockage of posterior branches of sacral nerves in pilonidal cyst surgery. Since then the S-ESP block, a simpler technique than lumbar ESP or neuraxial procedures, with reduced risks of complications, has been administered to offer post-operative pain relief for many surgeries (anorectal, perineal and orthopedic) even in the context of painful surgical procedures as in gender reassignment surgery.^[3] Its use in hip fracture in the elderly was also recently reported.^[4] The mechanism of action of the sacral ESP block is likely related to the block of dorsal roots of sacral nerves emerging from sacral foramina but also to the potential cephalad spread of injectate from the sacral foramina to the anterior sacrum via the spinal nerves between S2 and S5 (median approach) and along the bilateral erector spinae muscles between the L2 and S3 horizontal planes (intermediate approach).^[5] The sacral ESP block offers advantages such as ease of placement, lack of contraindications associated with some medications (anticoagulant or antiplatelet) and the absence of limb motor weakness. Potential drawbacks include the slow onset time and unpredictable dermatomeric coverage.

In our experience, the sacral ESP revealed to be useful for intra- and post-operative pain management in a case of discectomy for hernia repair without side effects or complications. Further studies are needed to better

understand its mechanism of action and to define more appropriate clinical indications.

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Conflicts of interest

There are no conflicts of interest.

FRANCESCO MARRONE, SAVERIO PAVENTI, MARCO TOMEI, CARMINE PULLANO¹

ASL ROMA 1, UOC Anestesia e Rianimazione, Ospedale Santo Spirito, Rome, ¹Villa Pia Clinic, Rome, Italy

Address for correspondence:

Dr. Francesco Marrone,
ASL ROMA 1, UOC Anestesia e Rianimazione, Ospedale Santo Spirito, Rome, Italy Lungotevere in Sassia 1 Rome, Italy.
E-mail: francesco.marrone@aslroma1.it

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