

Bilateral ultrasound-guided continuous cervical erector spinae plane block in suboccipital craniotomy

The midline suboccipital craniotomy is the preferred approach of exposure for cerebellar vermis, posterior inferior pontine and medullary, foramen magnum, midline cerebellum, and pineal regions. Major portion of the posterior scalp is innervated by greater occipital nerve (GON), which arises from the posterior ramus of the second cervical nerve (C2) root and to a lesser extent from fibers of the third cervical nerve (C3).^[1,2] The GON innervates the skin of the back of the scalp up to the vertex of the skull.^[2] Third occipital nerve is a superficial medial branch of the dorsal ramus of the C3 spinal nerve and innervates the region of the skin below the superior nuchal line after innervating the semispinalis capitis.^[1] Here, we have described our experience of continuous bilateral upper cervical erector spinae plane (ESP) block to provide perioperative analgesia in a 14-year-old male patient scheduled for midline suboccipital craniotomy. Written and informed consent for publication was taken from parents.

Anesthesia was induced with injection fentanyl 2 µg/kg, propofol 2 mg/kg, and vecuronium 0.08 mg/kg. After securing the airway, the patient was placed in the prone position with Mayfield head fixation; US-guided (US machine M-Turbo, Fujifilm Sonosite Edge II, Inc, Bothell, WA, United States) ESP block was given at C2-axis vertebra. The probe was kept transversally in a midline position at the level of the target cervical vertebra. After identification of the spinous process and transverse process, the probe was slid to ipsilateral side. Epidural Tuohy needle (B. Braun, Melsungen, Germany, 18G) was inserted in-plane to target the lateral edge of the transverse process [Figure 1] below the erector spinae muscle. After confirming the needle tip position by hydro-dissection, 10-ml LA solution (0.2% ropivacaine) was injected bilaterally [Figure 1]. Epidural catheter of 20 G was threaded on both sides. The catheter was tunnelled to secure it [Figure 1]. Patient's trachea was extubated after overnight ventilation. Ten-ml volume of 0.2% ropivacaine was given through both catheter every 8 hours during postoperative period. The patient was assessed at 24, 48, and 72 hours postoperatively with numerical rating scale (NRS) being 1/10, 2/10, and 1/10.

The possible mechanism of increased postoperative pain in suboccipital craniotomy could be extended muscle damage during resection of posterior cervical muscles.^[3] Regional analgesia techniques to ameliorate post-craniotomy pain includes scalp nerve block and scalp infiltration with local anesthesia (LA).^[4] Greater occipital nerve block have been used for awake craniotomy to cover posterior component

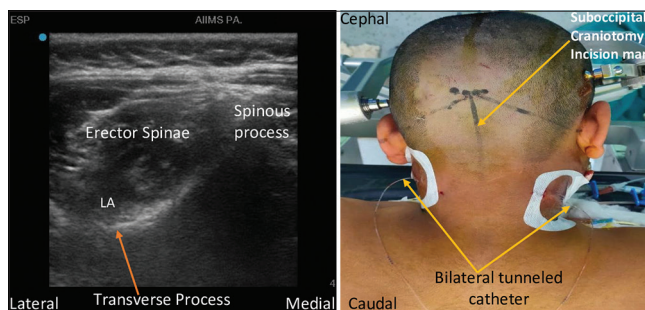


Figure 1: Sonoanatomy of transverse approach to the cervical ESP block, and an in-plane approach to catheter placement

of scalp block. Generally, this block was given by injecting local anaesthetic medial to the occipital artery along the superior nuchal line.^[5] However, this site is not appropriate for continuous GON block because of nearby suboccipital craniotomy incision site. In this case report, we have targeted the greater occipital nerve and third occipital nerve at extracranial region (posterior ramus of C2 and C3 nerve) by bilateral upper cervical ESP block. The continuous catheter technique of this block could provide opioid-sparing regimen of pain management in suboccipital craniotomy.

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Conflicts of interest

There are no conflicts of interest.

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