Continuous erector spinae plane block in paediatric patient undergoing thoracotomy surgery

The ESP block is a novel block during which an area local anesthetic is deposited between the erector spinae muscle and the underlying transverse process. It is an easier technique than the ultrasound-guided paravertebral block, which is technically challenging, time-consuming, and related to important risks.[1] We describe two cases of thoracotomy surgery performing ultrasound-guided continuous erector spine plane (ESP). In both cases, we obtained parental informed consent for publication. Case 1 was of a 2-year-old male child weighing 10 kg ASA I having empyema thoracis scheduled for thoracotomy under general anesthesia. After induction of anesthesia, continuous ESPB was performed at the level of the T5 transverse process. After placing a linear USG probe (M-Turbo, Fujifilm Sonosite, Inc, Bothell, WA, USA) parallel to the vertebral axis, we found the T5 transverse process and three associated muscles (trapezius, rhomboid major, erector spinae muscle). From this point, a 19-G Tuohy needle was inserted toward the three muscles and the transverse process of T5 in a cephalad-to-caudal direction. We administered two ml saline to confirm the location of the needle (deep to ESP). Thereafter 5 ml of 0.125% bupivacaine was injected. This also facilitated the insertion of epidural catheter in the desired plane. We fixed the catheter using double tunnelling [Figure 1] with 2 cm of the catheter in the fascial plane between the muscle and transverse process. Double-tunneling allows the catheter to circle the bridge of skin created between two loops of the catheter. Catheter dislodgement is prevented due to the tightening of the bridge of the skin in case any untoward force pulls it. Intraoperatively, hemodynamically stable no systemic analgesics were needed apart from the scheduled paracetamol. The patient was extubated, and emergence from anesthesia was uneventful. He had a maximum FLACC (face, legs, activity, cry, consolability) scale score of 1 in 24 h. Postoperative multimodal analgesia consisted of intravenous paracetamol 15 mg/kg every 6 h combined with an intermittent bolus dose of bupivacaine 0.125% 5 ml injected via an indwelling catheter every 8 h for 3 days. He was discharged without any complications. Case 2 was of a 5-year-old male child weighing 14 kg having hydatid cyst ASA I who was scheduled for thoracotomy under general anesthesia. After induction of anesthesia, ultrasound-guided ESPB was performed; postoperative multimodal analgesia was performed according to the acute pain service protocol of our hospital, as in Case 1. The FLACC score was maintained between 0 and 1 for a week after surgery. The patient was discharged without any complications.

The use of the ESP block is limited to the thoracic region in the pediatric population, and to date, there is no recommendation about the optimal dose of local anesthetic for use in an ESP block in children. Hernandez et al.[2] used a volume of 0.2 ml/kg of 0.25% bupivacaine to perform an ESP block for inguinal hernia repair in a 2-month-old male patient. They also reported that adequate anesthetic spread and analgesia with a volume of 0.2–0.3 ml/kg in pediatric patients undergoing thoracic surgery. Continuous ESP block as an adjunct to general anesthesia provides effective surgical analgesia and satisfactory postoperative pain control in pediatric thoracotomy surgery.

**Consent**

Taken from the parent.

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**Conflicts of interest**

There are no conflicts of interest.

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Dear Editor,

Post laryngectomy patients with tracheal stoma undergoing any other surgery under general or regional anesthesia pose unique perioperative anesthetic challenges. There is meagre literature on anesthetic management of such patients.

A 47 years old male (58 kg), (consent for publication obtained from patient) who had undergone total laryngectomy with left hemithyroidectomy 10 yrs. back for transglottic carcinoma was now scheduled for Transurethral resection of bladder tumor confined posterior bladder wall. Patient was on tablet Thyroxine 75 mcg. There were unique challenges associated with managing this patient. Communication with these patients during pre-anesthetic check-up is provocative. Though, he was trained for esophageal speech, but attendant help was required for better history taking. These patients should cover stoma with a surgical mask in addition to face & mouth to prevent spread of covid-19 infection to others.

Determination of tracheostomy tube size is a daunting task which was facilitated by otorhinolaryngologist consultation and roentograph of neck (AP & lateral view). Stoma was healthy and Tracheostomy tube size 8/7.5 mm was determined to be suitable in case of need. Such patients have possible difficult central venous catheter insertion due to distorted neck anatomy and difficult IV access post chemo & radiotherapy.

Following informed written consent and adequate preoperative counselling, patient was planned for surgery under Subarachnoid block with 2.2 ml of 0.5% bupivacaine heavy with 20 mcg fentanyl targeting block level up to T 10 for this case. Lithotomy position was given only after block level had fixed for prevention of ascent of the level. Assessment of height of spinal anesthesia block was next road blocker. With the help of sign language taught in the preoperative area, spinal block height was estimated. Obturator nerve block was not administered as tumor was not involving lateral wall of urinary bladder.

Oxygenation in these cases is not feasible through any of the oxygenation devices attached to the face. Oxygenation was done via stoma using auxiliary port tubing along with capnometer as depicted in Figure 1.

Stoma was covered with a sterile gauze piece from above to prevent entry of any foreign body which can be detrimental to the patient. Intraoperative course was uneventful, and patient was shifted to post anesthesia care unit post-surgery.

Figure 1: (a) Tracheal stoma with oximeter port (b) Capnometer attachment

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