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Erector spinae plane block: a new modality of pain relief in a difficult situation

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Letter to the Editor

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Ankylosing spondylitis (AS) can present significant challenges to the anesthesiologist because of potential difficult airway, technical issues with neuraxial anesthesia and associated cardiovascular and respiratory complications [1]. It is a chronic inflammatory disease of the axial skeleton with fusion of joints of the spine and multisystem involvement. It is also an independent risk factor for epidural hematoma, therefore, placement of an epidural catheter requires an X-ray or ultrasound guidance [1]. Hence inadequate postoperative pain relief can be a major issue in these patients.

We report a case of open total gastrectomy with Roux-en-Y anastomosis and feeding jejunostomy (FJ) performed under general anesthesia and bilateral continuous erector spinae plane (ESP) block in a patient with AS. Appropriate patient consent was obtained prior to the procedure carried out in October 2019.

A 58-year-old male weighing 60 kg who was a known case of AS, was diagnosed with adenocarcinoma of the stomach and posted for open total gastrectomy with Roux-en-Y anastomosis and FJ. Airway examination revealed severe restriction of neck movements. However, Mallampati classification (class II), thyromental distance (6 cm), and inter incisor gap (4 cm) were normal. He had difficulty in lying supine without a high pillow under his head. He had no other comorbidities and all investigations including echocardiogram were normal. General anesthesia was induced and monitoring done as per institutional protocol. McGRATH video laryngoscope (McGRATH MAC®, Aircraft Medical Ltd., UK) and 14F and 70 cm-long Frova Intubating Introducer (Cook Incorporated, USA) aided in the intubation.

The patient was positioned in right lateral position for ESP block. A 13–6 MHz linear ultrasound probe (Sonosite X-Porte, SonoSite Inc., USA) was placed in the sagittal plane, 3 cm from the midline at the level of T7 transverse process, and the trapezius and erector spinae (ES) muscles were identified. An 18 gauge Touhy needle was inserted in cephalad direction until the tip touched the transverse process and lay deep to the ES muscle. One ml of bupivacaine 0.25% was used to confirm the space. Twenty-five ml 0.25% bupivacaine with 8 mg dexamethasone was injected on each side followed by bilateral epidural catheter insertion deep to the ES muscle. An infusion of Ropivacaine 0.2% with fentanyl (2 μg/ml) was initiated on both sides at 7 ml/h. Anesthesia was maintained with a combination of air, oxygen, and isoflurane (1%). Any increase in pulse rate or blood pressure above 30% of the baseline was planned to be managed by bolus doses of fentanyl (1 μg/kg). However, we did not have to give opioid supplementation throughout the surgery. Patient also received regular doses of intravenous paracetamol (1 gm thrice daily) in the postoperative period. After extubation, the patient did not require any additional opioid analgesia, and ropivacaine infusion was continued for 5 days. He was able to participate in deep breathing and coughing exercises and was mobilized on postoperative day (POD)

1. During intensive care unit stay, his numeric rating scale (NRS) for pain was maintained below 2/10. At the time of discharge (POD 10), he was comfortable and pain-free.

Postoperative pain in upper abdominal surgeries causes significant pulmonary complications, worsens outcomes, and prolongs hospital stay [2]. Inadequate pain relief has been shown to be responsible for 23.3% of readmissions after surgery [2]. The modes of postoperative analgesia are limited in a patient with AS.

ESP block under ultrasound guidance is the solution to these issues. We decided to give the block at T7 with catheters inserted bilaterally. Drug injected at this level spreads in cephalic and caudal direction resulting in adequate somatic and visceral analgesia. This is an advantage over other abdominal wall blocks. We introduced the catheters preoperatively to reduce the stress response during surgery. We found that the patient remained hemodynamically stable in contrast to a continuous epidural infusion in which frequent episodes of hypotension are often encountered [3,4]. He did not require additional doses of fentanyl intraoperatively after the initial dose at induction. During the postoperative period, the patient maintained an NRS of less than 2. Avoidance of opioids helped prevent nausea, vomiting, and excessive sedation. The use of bilateral continuous block ensured ongoing pain relief [2]. There is a lack of consensus on the type, dose, and concentration of local anesthetic for this block [3]. We used ropivacaine 0.2% with fentanyl 2 μg/ml at the rate of 7 ml/h, which provided adequate analgesia. The chance of dislodgement of these catheters are remote because the catheters' site was far removed from the surgical site. Good analgesia and absence of motor blockade helped early mobilization, which played an important role in the prophylaxis against deep vein thrombosis. It also ensured active participation in incentive spirometry and chest physiotherapy. ESP block is also believed to have an antiemetic effect, which is advantageous in gastrointestinal surgery [2]. Although ESP block has been used extensively in thoracic, cardiac, and laparoscopic surgery, there are very few reports on its use in upper abdominal surgery [3–5].

ESP block is technically easy to perform with excellent safety profile, which can be considered for postoperative analgesia in upper abdominal surgeries, in patients in whom neuraxial techniques are difficult or contraindicated.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

Author Contributions

Nisha Rajmohan (Conceptualization; Data curation; Formal analysis; Investigation; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing – original draft)
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