Ultrasound guided bi-level thoracic and lumbar erector spinae plane block as surgical anaesthesia method for inguinal hernia repair in a high-risk patient: Case report

Sir,

Erector spinae plane (ESP) blocks have been used for surgical anaesthesia at thoracic and abdominal regions previously in very few cases.[1-4] The analgesic effect of ESP block in groin surgery was also reported in paediatric cases.[5,6] We would like to report successful implementation of ESP block for surgical anaesthesia in open inguinal hernia repair.

Written informed consent has been obtained from the patient for this publication. The patient was a 61-year-old male and an elective inguinal hernia repair was planned. Preoperative assessment revealed a medical history of hypertension, congestive heart failure with 20% ejection fraction, coronary artery disease, chronic renal failure, heavy smoking and a recent cerebrovascular ischaemia. His previous medication included aspirin 100 mg and clopidogrel 75 mg. After cardiology, neurology, nephrology and gastroenterology consultations, we concluded that operation of the patient under general anaesthesia was at high risk. Our plan of anaesthesia was unilateral, bi-level thoracic + lumbar ESP block. There is controversy about performing ESP block in patients receiving dual antiplatelet therapy usage. Therefore, antiplatelet drugs were stopped five days before the operation, and administered low molecular weight heparin, which was also stopped 12 h before the block. ESP block was performed at right lateral position and the injection was done to the left side of the patient. A high-frequency linear ultrasound probe (Logiq P6 Pro, GE Healthcare, IL) was used with enlarged scan area setting in order to cover multiple transverse processes. The US probe was placed over the transverse processes of vertebrae in paramedian sagittal orientation. An in-plane, single-insertion-double-injection technique was used. We injected a total of 30-ml local anaesthetic mixture (Bupivacaine 0.5% 20 ml + Lidocaine 2% 10 ml): 15 ml at T12 vertebra level and 15 ml at L1 vertebra level [Figure 1]. Block onset time was 20 min and the operation started after confirmation with a pinprick test. The surgery started with 8-cm incision uneventfully. Intraoperative management continued with administration of midazolam 1 mg intravenous and 18 ml of prilocaine subcutaneous infiltration, which was performed by the surgeon when the patient felt discomfort during cauterisation of subcutaneous tissues. The patient reported pain at the 15th minute of the operation during peritoneum traction. The pain was relieved by intravenous administration of fentanyl 50 μg. The surgery completed uneventfully after 50 min. In the post-operative follow-up period,

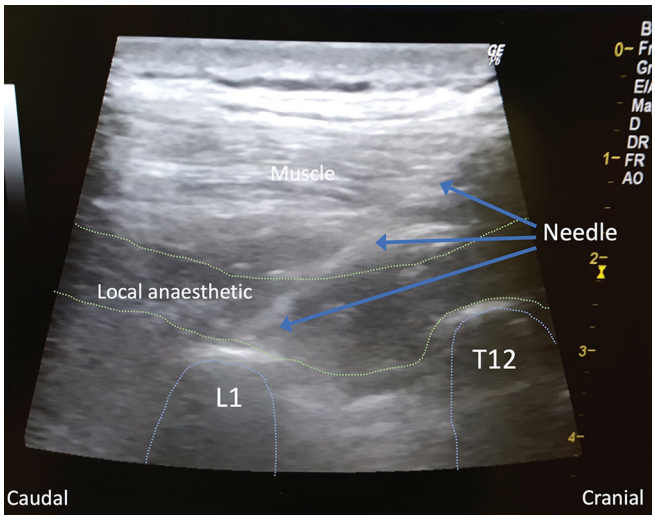

Figure 1: Ultrasound image of bi-level erector spinae plane block performance at T12 and L1 vertebra level. The needle was first advanced to T12 transverse process with in plane, cranial-to-caudal insertion. After local anaesthetic injection, the needle was withdrawn slightly and advanced to L1 vertebra transverse process. The tip of the needle is over the L1 vertebra transverse process in the image. Both transverse processes and local anaesthetic distribution are marked with dotted lines

the patient reported no pain and he was discharged to the ward. Pain was followed up using the Wong Baker Face Scale due to cooperation difficulty. Wong Baker scores were 0/10 at 1st and 2nd postoperative hours, 2/10 at 6th, 12th and 24th postoperative hours. The patient received intravenous acetaminophen 1 g after his pain was evaluated as 4/10 when he was mobilised at 18th postoperative hour. He did not require any more analgesics after that time.

The mechanism of ESP block was described as distribution of the local anaesthetic drug to paraspinal area that results in blockage of dorsal and ventral rami of spinal nerves and intercostal nerves at multiple vertebra levels.[7,8] Bi-level ESP blocks are not always used. Theoretically, bi-level injection may enlarge the distribution of the injected drug. The injected drug usually spreads multiple levels within the fascial plane, however spread around the ventral and dorsal rami of spinal nerves may vary.[7,8] Therefore, we preferred bi-level injection to guarantee an extensive spread at both dorsal and ventral rami in order to ensure a complete surgical anaesthesia and multiple-level distribution in our case.

Benefit of the ESP block in our case was to serve as a surgical anaesthesia method for groin surgery in a high-risk patient with assistance of mild sedation and local anaesthesia infiltration. However, ESP block may not provide efficient surgical anaesthesia in cases involving deeper surgical areas, peritoneal irritation or when muscle relaxation is required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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