

# Isolated erector spinae plane block (ESPB) for the anesthesia of axillary fossa: A case report

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Received: 2020-10-02.

Accepted: 2020-11-08



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J Clin Med Kaz 2020; 6(60):109-110

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## Abstract

ESPB that has axial and sagittal spreads allows it to be as effective as the central blocks. Although its effectiveness on postoperative thorax analgesia has been vastly reported, the number of studies on its use in combination with other blocks for sedation purposes in the management of breast surgery anesthesia is limited. We present the anesthetic management of a patient for accessory breast tissue surgery by using ESPB block from T1. We observed that the effect of ESPB on skin incision and skin-related tissue retractions was limited while postoperative pain control was sufficiently managed by the skin infiltration with ESPB.

**Key words:** erector spinae plane block, axillary fossa surgery, accessory breast tissue

## Introduction

Currently, regional methods can be used easily and reliably in upper extremity surgeries. The wide range of innervation of the axillary fossa, including cervical and thoracic branches, makes the selection of an isolated block difficult [1]. Neck and shoulder junction blocks either used in isolation or combination may be insufficient for the anesthesia of this region.

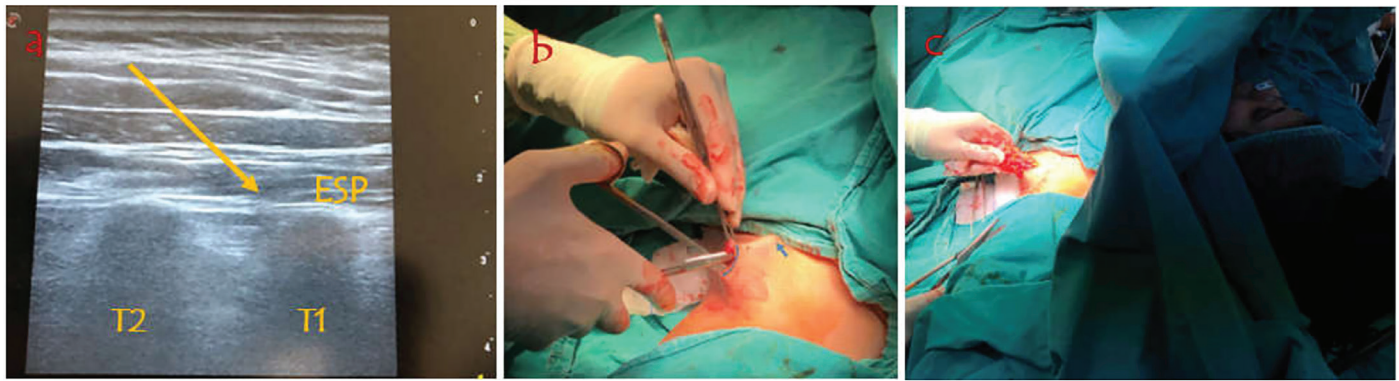
Although Erector Spinae Plane Block (ESPB) has been recently defined, its use for various indications increases the popularity of ESPB. The presence of sagittal and axial spreads from the application point of ESPB leads to an efficiency as much as the central blocks and causes the sustainability of its activation in a wider neural network [2]. Therefore, ESPB can be considered as an alternative approach for blocks in the regions with a wider dermatome line.

Accessory Breast Tissue is the abnormal formation of breast tissue at any point along the embryogenic breast line. It is mostly seen in the axillary region and may present a restrictive pattern [3]. ESPB was chosen for anesthesia in our case with accessory breast tissue covering the axillary fossa due to its location and the patient's preference against general anesthesia.

## Case-presentation

A 41-year-old woman, weighing 70 kg and classified as Class I according to the American Society of Anesthesiologists (ASA) Classification, was scheduled to undergo surgery via the wide resection of a 4×6 cm accessory breast tissue in the left axillary fossa. After written informed consent obtained, 21-Gauge cannulation was performed over the dorsum of the right hand, and sedation with 2 mg dromicum and 50 mcg fentanyl was administered. The prone position was given following pulse oximeter monitoring.

After determining the vertebral corpus of the patient, the area stained sterile was covered. A 10 MHz linear probe was placed into the T1/T2 intervertebral space parasagittally and 3 cm laterally to the spinous process. Then, an 8 cm 21-Gauge block needle was directed towards in-plane position by targeting the T1 process from the level of the T2 spinal process. Immediately after passing the Erector Spinae Muscle, a mixture of 15 mL 0.5% bupivacaine, 10 mL 2% lidocaine, and 5 mL 0.9% NaCl were injected, and a linear spread of the local anesthetic was observed throughout the transverse process. After 15 minutes of the procedure, the sensory block that included the neck, shoulder junction, the inner surface of the humerus, and the area descending to the breast line was obtained as revealed by the cool-pack test.



The response to painful stimuli via the pinprick test in the same region was shown to be moderate.

The patient was taken to the operating room and monitored in the supine position for standard electrocardiogram, pulse oximeter, and non-invasive pressure monitoring. Sterile surgical procedures were followed while the left arm of the patient was positioned at 90° abductions. Moderate pain was observed in the pinprick test applied to check the level of anesthesia just before the operation. Skin anesthesia at the site of incision was performed by 2 mL prilocaine (10 mg/mL), followed by the application of blocks 30 min before the onset of the surgery. No complaints about incision and the deep tissue manipulations were reported by the patient. During the withdrawal period 10 minutes after the onset of the surgery, the patient had mild pain that caused the retraction of the skin tissue, so 50 mcg Fentanyl in addition to 0.5 mg/kg of propofol in bolus was administered to the patient. As the resections were epidermis related in the upper axillary region, no need for propofol was identified after the application of an additional 2 mL prilocaine to the relevant region. During the surgery that lasted for 35 minutes and a total of 120 mg propofol was administered, no hypertensive tendency occurred while the patient's vitals remained stable and a respiratory rate ranging between 10 and 20 was observed.

Visual Analog Scale (VAS) was used for the assessment of pain at the postoperative 5th, 30th, 60th hours, and the scores were observed two hours apart at the postoperative 2nd, 4th, 6th, 12th and 24th hours. No additional need for analgesia occurred at the inpatient clinic.

## Discussion

Applications of the ESPB block involving axillary fossa

are common in breast surgeries that involve axillary lymph node dissections. In those surgeries, ESPB is used in combination with additional plane blocks [4]. To the best of our knowledge, isolated ESPB block has not been previously reported to be used in axillary fossa surgeries.

We observed that ESPB performed on the T1 level was insufficient for anesthetic purposes. Although we demonstrated that it was effective for sensory dermatomes containing the axillary region, skin incision anesthesia could not be obtained by isolated ESPB. In studies that compared ESPB with skin infiltration for the postoperative pain control in thoracic surgeries, it was reported that the application of skin infiltration instead of drains provided a significant pain relief [5]. Because of the thermal-free and pain-free nerve endings in the dermis and epidermis, respectively, it could be suggested that the anesthetic border might have reached this region.

In conclusion, while isolated ESPB block contributes to the analgesia of axillary fossa, some degree of additional sedation for anesthesia is still required. We suggest that future studies are needed to support our results regarding the anesthesia of this region in axillary surgeries.

**Disclosures:** There is no conflict of interest for all authors.

**Acknowledgement:** None.

**Funding:** None.

**Informed consent:** Written informed consent was obtained from patient who participated in this case.

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