ABSTRACT
Regional anesthetic techniques have gradually revolutionized the perioperative analgesia in breast surgeries. Recently, midpoint transverse process to pleura block has been described and found to provide excellent opioid-sparing analgesia. We performed the block in a novel out-of-plane technique to decrease the patient-needle interaction time and at the same time achieving good analgesia. The immediate postoperative Numeric Pain Rating Scale score was 0/10 both at rest and on movement, and patient reported a score of 5/10 after 12 h, which get subsided with single dose of nonopioid analgesic.

Key words: Analgesia; breast surgery; midpoint transverse process pleura block

Introduction
Perioperative analgesia in breast surgery has always been a matter of continuing debate owing to its multiple innervations. Till now, there are a number of different modes of analgesia techniques described in literature targeting the different innervations. For example, the evolution started from epidural methods followed by thoracic paravertebral block (TPVB) and recently ultrasound-guided interfascial techniques, namely, pectoral nerves blocks (PECs), serratus anterior plane block (SAP), erector spinae plane block, and midpoint transverse process to pleura (MTP) block. Obviously, the research is still on to find a safe and effective mode of analgesia. The TPVB has claimed to provide excellent analgesia; however, the risk of pneumothorax and neuraxial spread leads to the discovery of safer alternative such as PECs block or SAP block targeting only the lateral branches of intercostal nerve or the pectoral nerves. The analgesic efficacy of TPVB is attributed to the deposition of local anesthetic (LA) in the vicinity of dorsal ramus and subsequent spread to ventral ramus. The recent hypothesis of tissue permeability of LA in these areas further revolutionized the paravertebral mode of analgesia to erector spinae block and MTP, where the LA was deposited more safely avoiding any risk of pleural puncture.

Case Report
Here, we report a case of a 61-year-old female weighing 43 kg with right-sided breast lump, planned to undergo wide local excision and axillary node sampling. Written informed consent was obtained, and we performed the MTP block in preanesthesia room by inserting the block needle (Pajunk, Geisingen, Germany) out of plane to the linear vascular probe (13 to 6 MHz Sonosite Edge, Bothell, WA, USA). Before insertion, we placed the probe 3 cm lateral to the skin in parasagittal plane [Figure 1a]. We then identified the midpoint between the transverse process and pleura, and the distance of the same from the skin was
measured [Figure 1b-d]. The measured depth (1.66 cm) of insertion was marked in the block needle [Figure 2a] and was punctured after infiltrating skin with 2% lignocaine. The needle guide software was made on, in the ultrasound machine and the block needle was inserted out of plane to the probe [Figure 2b] and advanced till the marked depth. Once the point was confirmed, 7 ml of 0.375% ropivacaine was deposited [Figure 2c]. Similar two injections were made at T3 and T5 levels, where the depth was 1.52 cm and 1.58 cm, respectively. After 20 min, before shifting to the operation table, we did the sensory assessment, which showed decreased sensations to the pinprick with 26 g blunt needle from T2 to T6. The anterior limit of dermatomal spread was up to the parasternal level. The patient was then administered standard general anesthesia with intravenous (IV) fentanyl, propofol, and atracurium and maintained with isoflurane delivered with 50% oxygen and N₂O through a supraglottic airway device. Intraoperatively, there was no opioid rescue needed except during infraclavicular area dissection; however, IV ketorolac 30 mg and IV paracetamol 1 g were administered as standard practice of multimodal analgesia. Surgery lasted uneventfully, and the patient was extubated on table. The Numeric Pain Rating Scale (NRS) showed a score 0 out of 10 (both at rest and movement) on awakening. After 1 h, patient was shifted to ward. IV paracetamol 1 g was continued 6 hourly. At 12 h, patient complained moderate pain on movement (NRS 5/10), which got relieved by IV diclofenac 75 mg. Next day morning, patient was mobilized and started on oral analgesic. She was comfortable and had a very good satisfaction regarding her pain.

Discussion

The opioid-sparing perioperative analgesia in breast cancer surgery regained new dimension after the meta-analysis observing lower rate of inflammation and immune response with paravertebral block as compared to general anesthesia and opioid-based analgesia. After that, all the researches were aimed for opioid-sparing analgesia by opting for regional interfacial plane block, and it has been found that there is a significant reduction of opioid consumption and postoperative nausea vomiting in patients where PECs or serratus plane block were administered. However, on the first postoperative day, the morphine-sparing potential is more in TPVB at a cost of more complications, and thus subsequently, the efforts were made to lower the same. ESP block and later MTP block were introduced aiming a safer version of TPVB.

Costache et al. described MTP block as in-plane advancement of needle to the midpoint between transverse process and pleura. He observed excellent analgesia in breast surgery patients, as the LA seeps down through medial-free edges of superior costotransverse ligament to the dorsal and ventral rami, and same he could justify by his cadaveric study. Addressing the specific out-of-plane technique in MTP block arose from our previous experience of the same block in standard manner as described by Costache et al., we noted little patient discomfort, as already described for an in-plane technique where needle had to cover a longer distance for reaching out the target. Although we infiltrated the track with LA before puncture, the requirement of multiple level blocks increased the overall block performance time. However, it may not have...
clinical significance as per the analgesia was concerned. In this patient, we finished the block in lesser needle-patient interaction time, although the overall time was same as we did spend time on measurements. We could achieve excellent postoperative analgesia with maximum NRS of 5/10 (on movement) and a well-satisfied patient. There are still more studies needed to compare the different techniques of MTP block.

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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Conflicts of interest
There are no conflicts of interest.

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