

## CASE REPORT

# Thoracic paravertebral block for breast surgery in a patient with ischemic heart disease

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## ABSTRACT

We report a case of 50 years old female diagnosed with carcinoma of breast posted for modified radical mastectomy. Her comorbidities included ischemic heart disease with global ischemia on 2D echo. The surgery was successfully completed under thoracic paravertebral block. Regional techniques like paravertebral block are preferred modalities in high risk cases and gives good intraoperative conditions with adequate postoperative analgesia and with least hemodynamic alterations

**Keywords:** Paravertebral block; Carcinoma breast; Postoperative analgesia

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## INTRODUCTION

Regional anesthesia using paravertebral block (PVB) is an ideal alternative to general anesthesia for breast cancer surgery.<sup>1</sup> Benefits include reduced postoperative nausea/vomiting and prolonged postoperative pain relief and increased potential for ambulatory discharge.<sup>2</sup>

Thoracic PVB involves injection of local anesthetic solution (LA) at the site where spinal nerves emerges from intervertebral foramen. The PVB space contains dorsal and ventral rami and sympathetic chain, hence infiltration of this space results in unilateral sensory, motor and sympathetic blockage.<sup>3</sup>

PVB when compared to general anesthesia is an alternative technique for breast surgeries that may offer pain relief superior to general anesthesia alone.<sup>4</sup>

## CASE REPORT

We report a case of 55years old non diabetic, non-hypertensive female with invasive ductal carcinoma of right breast scheduled for modified radical mastectomy. Her co-morbidity included Ischemic Heart Disease with dyspnea grade-III NYHA classification with inferolateral wall ischemia on ECG. Her 2D echo revealed global ischemia with ejection fraction 45% and grade I diastolic dysfunction and minimal pericardial effusion. Her physical score was assessed to be ASA-III.

In view of her cardiac status, thoracic PVB with superficial cervical plexus block was planned for the proposed surgery. Anesthetic procedure was explained and written informed consent was taken. Starvation was confirmed and standard monitors were connected to the patient.

Intravenous access was established with 18G cannula and thoracic PVB was given at T2, T4 and T6 levels on right side in sitting position under all aseptic precaution. Skin was infiltrated with inj. lignocaine around the point of insertion 3 cm lateral to the spine on right side. Contact was made with the transverse process and needle was walked off caudad 1-1.5 cm of the initial depth till loss of resistance could be elicited and local anesthetic solution was injected. Total volume of local anesthetic solution was 15 ml containing 0.5% levobupivacaine and 1.5% lignocaine with adrenaline and 100 mcg of clonidine. 5 ml was given at each level after repeated aspiration to avoid accidental intravascular injection. The patient was positioned supine and superficial cervical plexus block with 10 ml of 0.25% levobupivacaine was given.

Adequacy of the block was checked by sensory loss in the surgical field to pin prick before incision and response to cold. Surgical incision was made about 20 min after completion of the block and standard monitoring was done with her pulse 88 per min regular and BP 130/90 mm Hg. Hemodynamic parameters were maintained throughout the surgery. The surgery lasted for 2 hours and VAS score

was 0 and 2 at the end and after 3hrs after the surgery respectively. Postoperative analgesia was supplemented with paracetamol infusion.

## DISCUSSION

Thoracic PVB is a useful alternative analgesic technique for breast surgery.<sup>5</sup> The administration of bupivacaine in PVB space in the form of multiple injections at various consecutive cervical and thoracic levels has been successful in providing adequate analgesia for breast surgery.<sup>4,1</sup>

Pusch et al described single injection of high volume of bupivacaine in thoracic PVB and reported effective anesthesia for breast lump excision as well as mastectomies with axillary clearance.<sup>6</sup>

Thoracic PVB also provides better hemodynamic stability, reduces blood loss and has got superior post operative pain control than any other technique.<sup>4</sup> Although it is an invasive procedure, recent reviews have showed it is safe technique.<sup>7</sup>

Our patient being a case of Ischemic Heart Disease needed a technique with minimal hemodynamic alterations and avoidance of poly pharmacy, therefore thoracic PVB was chosen over general anesthesia owing to its superior safety profile.

Thoracic PVB also preferred over epidural anesthesia for

patients with underlying disease, offers reliable anesthesia and stable hemodynamic response and provides rapid recovery without nausea vomiting and preserves respiratory functions.<sup>8</sup> Generally PVB has low rate of side effect and complication, moreover it was reported that time for tumor recurrence decreased with thoracic PVB.<sup>9,10</sup>

According to recent meta analysis, PVB is highly safe and efficacious technique and provides anesthesia and post operative analgesia during breast surgery. It is easy to learn and has got high success rate and incidence of chronic postoperative pain after chemotherapy and surgery is decreased.<sup>9</sup>

Richardson's assertion states that PV B is a 'gold standard' block and afferent block of choice for unilateral surgery<sup>9</sup> and we opted for loss of resistance technique described by Eason & Wyatt.<sup>11</sup> Thus considering the nature of cardiac involvement of our patient, our choice of thoracic PVB was a good option. In recent days ultrasound guided technique have been employed for further safe administration of this block.

## CONCLUSION

Thus thoracic PVB is safe and efficacious technique which provides good hemodynamic stability intraoperatively and superior post operative analgesia.

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