

# Case Report on PEC I and PEC II Block for Post-Operative Analgesia in Patient Undergoing Modified Radical Mastectomy

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**Abstract:** Carcinoma breast is the most common cancer in women worldwide. Acute post-operative pain is quite challenging. Extensive breast surgeries can be tackled with various modalities of post-operative analgesia. We report a 50 year old female who is a case of carcinoma breast undergoing modified radical mastectomy which was supplemented with PEC1 and PEC2 block given under ultrasound guidance. Outcome was measured as patient reported intensity of pain according to the visual analogue scale (VAS) at rest.

## 1. Introduction

Breast cancer is the most common type of cancer in women in the world and the second most common cancer in India. [1,2]. Poor pain control in acute phase can also lead to the development of chronic pain syndrome. [3,4]. (PEC1 and 2) pectoral nerve block which is an interfascial plane block, can be performed under ultrasound guidance between pectoralis major, minor and serratus anterior which is used to provide post-operative analgesia in patients of modified radical mastectomy. Degree of pain is later assessed by using Visual Analogue Scale (VAS).

## 2. Case Report

A 50 year old female, American Society of Anesthesiologists status II, came with history of left breast carcinoma to the general surgery department with history of left breast swelling along with acute onset of pain. She also gave history of chronic morphine addiction and history of right breast lumpectomy 10 years back.

On pre-anesthetic evaluation, patient had left breast swelling. She was 164 inches tall and weighed 60 kg with pulse rate of 88/min, regular in rhythm, good volume and Blood pressure of 120/60 mm Hg taken on right upper arm in supine position. On airway assessment the patient had adequate mouth opening, no loose teeth, caps or crowns with Mallampati criteria II. Preoperative laboratory workup revealed Hemoglobin of 10.5 gm/dl. Platelet count, total blood count, prothrombin time, international normalized ratio were within normal limits.

General anesthesia was planned for modified radical mastectomy along with post-operative PEC 1 and 2 block under usg guidance. Informed consent was obtained after explaining risks regarding general anesthesia and PECS block, possible blood transfusion and related complications were explained to the patient. One 18 G intravenous line was inserted and secured. In the operation room, monitors were applied and baseline vitals were recorded. The patient was premedicated with Inj Ranitidine 50 mg, Inj Glycopyrrolate 0.2 mg, Inj Midazolam 1mg and Inj Fentanyl 100 µg. Induction was carried out using Inj Propofol 100mg. Inj vecuronium 6mg was administered to facilitate intubation with cuffed endotracheal tube of 7.5 F

and fixed at mark 20cm after confirmation of bilateral air entry. Anesthesia was maintained with titrated doses of isoflurane, nitrous oxide and oxygen.

On completion of surgery prior to extubating, usg guided PEC1 and PEC2 block was given using 20ml inj bupivacaine 0.25%.

## 3. Discussion

Patients that are posted for MRM under GA require opioids [5,6] further increasing the risk of opioid related adverse effects [7]. Pectoral nerve blocks are known to provide satisfactory pain relief after breast surgery and reduce the need for opioids [8,9]. PEC1 block is given between pectoralis major and minor muscle, targeting the medial and lateral pectoral nerves. PEC2 block is given between pectoralis minor and serratus anterior muscle, targeting the anterior and lateral divisions of thoracic intercostal nerves T2-T6 which run in between intercostal muscles. In addition, PEC2 block provides analgesia of the long thoracic nerve arising from C5-7 innervating the serratus anterior muscle, and thoracodorsal nerve arising from C6-8, innervating latissimus dorsi muscle. Hence, PECS block can be used for extensive breast surgeries like modified radical mastectomy or tumor resection surgeries.

Blanco and colleagues first performed PECS block by ultrasound technique. [10,11]. For PECS1 usg probe was positioned below lateral half of clavicle in the parasagittal plane. The pectoral muscles (major and minor) were identified. 23G spinal needle was introduced using in-plane technique, from medial to lateral and 10ml of 0.25% inj Bupivacaine was injected after careful intermittent aspiration. For PECS2 probe was placed caudally to the lateral third of clavicle locating the first rib slowly moving distally towards axilla visualizing the 3<sup>rd</sup> rib. The potential space between pectoralis minor and serratus anterior was identified. Using in-plane technique 23G spinal needle was advanced further and volume of 20ml of 0.25% inj bupivacaine was injected

Post-operative analgesia is monitored according to the visual analogue scale (VAS).

VAS score ranged from 0 (no pain) to 10 (worst pain).

Patient had a VAS score of zero upto 12 hours post operatively.

Wabha [12] in his study compared PECS1/2 blocks to paravertebral blocks at T4 in patients that were posted for MRM. The study found that patients who received PECS block had lower intraoperative opioid consumption and better pain control postoperatively.

Bashandi [13] in his study compared PECS1/2 blocks plus GA versus GA. Patients in PECS1/2 group had significantly lower VAS pain scores, lower intraoperative fentanyl use, shorter PACU stay, lower PACU sedation scores and shorter post operative hospital stay.

#### 4. Conclusion

PECS (1 and 2) block is a good choice of analgesia in patients undergoing modified radical mastectomy reducing the need of post-operative opioids and NSAIDS.



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