

Post operative analgesia using Modified PEC 2 Block in patient posted for Modified Radical Mastectomy - A Case Series

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Abstract

Patients undergoing modified radical mastectomy (MRM) experience lot of pain and require higher doses of analgesics. The modified pectoral nerves (m-PEC 2) block for post-operative analgesia for patients undergoing MRM has proven highly efficacious and best alternative to avoid high dose opioid induced side effects. The m-PEC 2 block was given to 5 patients undergoing modified radical mastectomy for post operative analgesia, decrease in the VAS score was noted and decrease need of rescue analgesia was seen.

Key words: Modified PEC 2 Block, Modified radical mastectomy, post op analgesia.

Introduction

Patients undergoing modified radical mastectomy (MRM) under general anaesthesia require higher doses of opioids for analgesia putting them at a risk of developing opioid induced side-effects^[1]. Regional anaesthesia reduces the need for perioperative opioids and thus may improve the outcome. Pectoral nerve (PEC) blocks have been shown to provide satisfactory analgesia after breast surgery and decrease opioid consumption^[2,3,4].

Conventionally in PEC1 block, injection is made between pectoralis major and minor muscle. The m-PEC 2 block is performed by injecting drug between Pectoralis Minor and Serratus Anterior through a catheter placed under direct vision. This technique blocks the pectoral nerves, long thoracic nerve, thoracic intercostal nerves from T2-T6, and thoracodorsal nerve and can be effectively used as a postoperative analgesic for MRM surgeries^[5].

Case series

Patients admitted to HSK Hospital, Bagalkot diagnosed of breast cancer of American Society of Anaesthesiology (ASA) class I and II were posted for MRM under General Anesthesia. We performed m-PEC 2 block in 5 patients to provide post-operative analgesia.

In all patients, General Anesthesia with positive pressure ventilation via Ambu AuraGain Laryngeal mask airway of size 3 and 4 was given. After the surgery before closure of the skin 18 G Touhy needle (Smith's Medical, Czech Republic) was pierced below clavicle and catheter retrieved through it and placed between Pectoralis Minor and Serratus Anterior under direct vision. Following skin closure, the catheter was fixed by the surgeon and covered by tegaderm (Image A, B & C). The surgical drains were clamped for 15 mins before injecting drug in each patient and 30ml of 0.25% bupivacaine was injected through the catheter in each patient. Visual Analog Score (VAS)^[6] was assessed post operatively every 3 hours thereafter. In 4 out of 5 patients only one top up dose of 15ml of 0.25% Bupivacaine was required when VAS score exceeded 4. In one patient two top up doses were given. No rescue analgesia was required for any of the patients.

CASES

Case 1

A 40 year old female belonging to ASA class II, diagnosed with carcinoma of left breast underwent MRM under general anesthesia. Patient was given m-PEC 2 block with 30ml of 0.25% inj. bupivacaine plain through the catheter after the closure of skin.

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Patient complained of pain around 9 hours after the surgery with VAS score of 5. Patient received top up with 15ml of 0.25% inj. Bupivacaine through the catheter. There was no requirement of second top up or rescue analgesia.

Case 2

A 43 year old female belonging to ASA class II, diagnosed with carcinoma of right breast underwent MRM under general anesthesia. m-PEC 2 block was given similar to as in case 1.

Patient complained of pain around 9 hours after the surgery with VAS score of 6. Patient received top up with 15ml of 0.25% inj. Bupivacaine through the catheter. There was no requirement of second top up or rescue analgesia.

Case 3

A 50 year old female belonging to ASA class II, diagnosed with carcinoma of left breast underwent MRM under general anesthesia. Patient received m-PEC 2 block in a similar fashion as in case 1.

Patient complained of pain around 6 hours after the surgery with VAS score of 6. Patient received top up with 15ml of 0.25% inj. Bupivacaine through the catheter. Patient received 2nd top up with 15 ml of 0.25% inj. Bupivacaine plain as she complained of pain at 12th hour with VAS score of 5. There was no requirement of rescue analgesia.

Case 4

A 35 year old female belonging to ASA class II, diagnosed with carcinoma of right breast underwent MRM under general anesthesia. m-PEC 2 block was given as in the case 1.

Patient complained of pain around 9 hours after the surgery with VAS score of 5. Patient received top up with 15ml of 0.25% inj. Bupivacaine through the catheter. There was no requirement of second top up or rescue analgesia.

Case 5

A 57 year old female belonging to ASA class II, diagnosed with carcinoma of right breast underwent MRM under general anesthesia. Patient received m-PEC 2 block similar to the case 1.

Patient complained of pain around 6 hours after the surgery with VAS score of 5. Patient received top up with 15ml of 0.25% inj. Bupivacaine through the catheter. There was no requirement of second top up or rescue analgesia

Discussion

Currently, an increase in usage of peripheral nerve blocks as a part of comprehensive anaesthesia care regimens is seen. Even single-shot regional techniques seem to give excellent analgesia^[2]. Blocking the sensory supply to breast, axilla, and over the pectoral muscles provides adequate analgesia in the postoperative period.

A study conducted by Goswami et. al., demonstrated that both PEC1(Pectoral nerve block 1 requires an interfascial injection of Local anesthetic between the pectoralis major and pectoralis minor muscle at the level of the third rib) and mPEC2 provide a good quality of postoperative pain relief, when catheters are placed under direct vision before wound closure in patients undergoing MRM. However, mPEC2 provided significantly better quality and long duration of pain relief than PEC1. In our study, m-PEC 2 block was performed on the patients undergoing MRM, and a catheter was placed and thus providing good post-operative analgesia.

In breast surgeries done under general anesthesia, opioids form the back bone of perioperative analgesia, thus putting the patient at risk for opioid induced side effects. None of the patients in our study group required rescue analgesic in the recovery room or postoperative ward.

Image A



Image B



Image C



Images A, B and C showing catheter insertion and placement for m-PEC 2 block.

Nerve blocks for postoperative analgesia when given along with general anesthesia do not require a high concentration of local anesthesia. We used bupivacaine for this study due to its efficacy in control of postoperative pain.

Conclusion

Postoperative analgesia provided by m-PEC2 block is superior, complete and decreases need of rescue analgesia. As catheter is placed under direct vision after surgery there is no hindrance in surgical field.

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