Pectoral nerve block (Pecs block) with sedation for breast conserving surgery without general anesthesia

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Introduction

Most regional anesthesia in breast surgeries is performed as postoperative pain management under general anesthesia, and not as the primary anesthesia. We performed Pecs I and Pec II block simultaneously as primary anesthesia under moderate sedation with dexmedetomidine for breast conserving surgery. Block was uneventful and showed no complications. Thus, We suggest that Pecs block with sedation could be an alternative to general anesthesia for breast surgeries.

Case

A 49-year-old female (154.6 cm / 50.8 kg) presented with a mass on her left breast that was diagnosed with invasive ductal carcinoma by core biopsy. Because the patient was reluctant to general anesthesia, we prepared for the Pecs I and II block with monitored anesthesia care (MAC).

For Pecs I block, the needle was advanced to the tissue plane between the pectoralis major muscle and pectoralis minor muscle at the vicinity of the pectoral branch of the acromiothoracic artery and 10 mL of 0.25% levobupivacaine was injected. For Pecs II block, 20 mL was deposited at the level of the third rib above the serratus anterior muscle with intent to spread the local anesthetics over the axilla.

The overall procedure of Pecs block took about 15 minutes, and the onset time of analgesia was an average of 3 minutes after completion of the procedure. However, sufficient analgesia for surgical procedure was obtained after 15 minutes from that time. We confirmed the anesthetic area over T2 – T6 of dermatomes by a pinprick test. Subsequently, dexmedetomidine was infused with a loading dose of 1 mcg/kg for 10 min, followed by a maintenance dose of 0.2 - 0.7 mcg/kg/h with titration, for targeting Ramsay sedation scale of 3, responding to verbal commands.

Discussion

Pecs block is a peripheral nerve block that has been described recently. Considered a safe and efficient procedure, anesthesiologists increasingly prefer Pecs block to thoracic paravertebral blocks (TPVB) and thoracic epidural analgesia. Pecs block has some advantages, including no risk of sympathectomy that is usually associated with TPVB and epidural blockade. Additionally, the Pecs block has less restrictions on the use of anticoagulants, as compared to TPVB or neuraxial blocks.

Although the Pecs block has lower risk of intravascular injection than TPVB, it has possibility of injection into the pectoral branch of the acromiothoracic artery. In addition, upper limb fistula can occur in Pecs block. However, these complications can be easily avoided with proper ultrasound training and determining the right pattern of spread of the local anesthetics. Many breast surgeries are performed on an outpatient basis; hence, this may be a safer anesthetic technique for shortening hospital stay and improving bed rotation rate.

Most cases of Pecs block are performed under general anesthesia (GA) for postoperative pain management. Despite the reportedly better outcomes of Pecs block with GA than GA alone, we selected Pecs block as the primary anesthesia with MAC. As a result, the patient felt better satisfaction, also she didn’t have postoperative nausea and vomiting (PONV), and GA-associated complications.

Also, MAC with dexmedetomidine was generally known to have some beneficial to the patient and surgeon, due to its analgesic, sedative, anxiolytic and sympatholytic properties. Interestingly, intravenous dexmedetomidine may prolong the duration of sensory block on spinal and peripheral nerve blocks. Hence, we thought intravenous dexmedetomidine with Pecs block is expected to have a supporting role.

Fig. 1 For Pecs I block, the needle was advanced to the tissue plane between the pectoralis major muscle and pectoralis minor muscle. The landmark is the pectoral branch of the acromiothoracic artery. For Pecs II block, the needle was advanced to the tissue plane between the Pmm and serratus anterior muscle at the level of the third rib.

Thus, the combination of Pecs blocks with MAC is helpful in patients undergoing simple breast surgeries. Although Pecs blocks have only recently been described and lack experimental evidence, they hold great promise due to their simplicity and relative lack of contraindications and complications. Pecs blocks could be recommended as an alternative to GA in certain breast surgeries. Prospective studies are required for better outcome in the future.

Reference