



A case of breast surgery under serratus anterior olane block

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Citation this Article: Dr Aayushi Tomar, “A case of breast surgery under serratus anterior olane block”, IJMSIR- September - 2022, Vol – 7, Issue - 5, P. No. 102 – 104.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

In breast surgery, local anesthesia is primarily used instead of primary anesthesia for postoperative analgesia. Serratus anterior block is a new method of ultrasound-guided chest wall block. It is less invasive than traditional local anesthesia and is relatively safe. We report a case of breast surgery under serratus anterior block as primary anesthesia with supervised anesthesia in a 70-year-old patient with a history of moderate mitral valve stenosis.

Conclusions: Serratus anterior block may be a simple and effective technique for breast surgery when the lesion is lateral.

Keywords: Breast Surgery; Supervised Anesthesia Care; Serratus Front Plane Block.

Introduction

Breast surgery under local anesthesia is rarely performed. However, local anesthesia with thoracic epidural, thoracic paravertebral block, intercostal nerve block or thoracic nerve block has been used to manage postoperative pain after thoracic surgery¹. The serratus anterior block is a new method of ultrasound-guided chest wall block and pectoral muscle block². There are no reports of its complications. It is relatively

simple and reduces complications such as hematoma, pneumothorax, or local anesthetic toxicity¹. Here, we present breast surgery using serratus anterior block as primary anesthesia with supervised anesthesia management to avoid complications associated with general anesthesia and control postoperative pain.

Case Report

A 70-year-old female patient (height: 152 cm, weight: 43 kg) was admitted with breast cancer and was scheduled to undergo excision and sentinel lymph node biopsy. The lesion was 3 cm lateral to the nipple of her left breast. She had a history moderate mitral valve stenosis. She also had a history of congestive heart failure, controlled hypertension.

Her physical condition was classified as American Society of Anesthesiologists III. A recent transthoracic echocardiogram showed a left ventricular ejection fraction of 68%. Her pulmonary systolic arterial pressure was her 40 mmHg and she had no focal her wall motion abnormalities. Based on her medical history and her surgical sites, we decided to operate under regional anesthesia. Detailed information was provided and informed consent was obtained from patients and family members.

No premedication was given. Standard monitoring included electrocardiography, noninvasive blood pressure measurement, and pulse oximetry after the patient entered the operating room.

Before the patient was sedated, an ultrasound guided block (Sonosite) was performed in the left lateral decubitus position using a convex transducer (1-7 MHz), facing towards the head. Arm was raised above the head. Her skin was disinfected with betadine. The ultrasound probe and cable were protected with sterile vinyl wrap. The probe was placed under the axillary region after identifying the 5th rib. After confirming the position of the serratus anterior and latissimus dorsi muscles, the 60-mm Quincke needle of 23 gauge was used to inject 0.25% Bupivacaine plus 1% lignocaine adrenaline 20c into the fascial plane between the serratus anterior and latissimus dorsi muscles. Twenty minutes after the block was administered, the alcohol sponge cold test was used to check for sensory loss in the anterolateral hemithorax lateral to the midclavicular line in the T2 to T7 dermatomes. After that, the patient wanted to sleep. We began monitoring dexmedetomidine and remifentanil anesthetic supplies. Sentinel Lymph node biopsy was followed by surgery with lesion excision. The total working time was 1 hour and 20 minutes.

At dissection of the axillary fascia and pectoralis major, a local infiltration of 5 mL of 1% lidocaine was injected to relieve local pain in the patient. Her intraoperative vital signs were stable. After surgery, she was transferred to post-anesthesia ward. The patient did not complain of postoperative pain at the surgical site. Her pain score at 6 and 12 hours postoperatively was 0-1/10 on a numeric rating scale.

Discussion

This case demonstrates the use of a serratus anterior muscle block as primary anesthesia to avoid

cardiopulmonary complications associated with general anesthesia and to control postoperative pain. Monitored anesthesia care can be provided to reduce patient anxiety and prevent possible pain caused by incomplete occlusion.

Blanco et al.² first described the local anesthetic technique of serratus anterior block injected above or below the serratus anterior space. This method can block the intercostal nerves and the lateral cutaneous branches of the thoracodorsal nerves T2-T9. The lateral cutaneous branch of the intercostal nerve is separated from the posterior of the costal angle. At it passes through the serratus anterior. This nerve divides into the anterior branch and the posterior branch. The anterior portion of the nerve is responsible for cutaneous innervation to the midclavicular line.³ The serratus anterior block provides analgesia to the axillary fossa and lateral thorax. The analgesic effect of this method has been reported in thoracic surgery, thoracotomy, and multiple rib fractures⁴⁻⁶. In this case, lesion was located outside the nipple. For this, we used the Serratus anterior plane block. However, it had some drawbacks. The serratus anterior block alone did not anesthetize the entire hemithorax. It's useless without ultrasound. Also, depending on the skill of the administrator, there is a risk of failure and the development of pneumothorax¹.

Other conventional techniques such as thoracic epidural block, intercostal block, and paravertebral block are associated with spinal infections, epidural hematomas, severe nerve damage, inadvertent intrathecal injections, pneumothorax, epidural or intrathecal diffusion, and puncture with the risk of local anesthetic toxicity by blood vessels^{7,8}. In addition, local anesthetics are rapidly absorbed, resulting in relatively high plasma concentrations in intercostal, interpleural, and paravertebral blocks, which may increase the risk of local

anesthetic systemic toxicity. As previously mentioned, the local anesthetic toxicity of serratus anterior block is probably less than alternative techniques. This is because the technique is performed under ultrasound guidance in areas with few blood vessels¹. Local anesthesia with monitored anesthetic administration provides her benefits of safe sedation, anxiolysis, and effective pain control.

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