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Pectoserratus+interpectoral plane block is safe in patients receiving anticoagulant therapy?

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To the Editor,

Ultrasound (US)-guided regional anesthesia techniques have become increasingly prevalent for the effective management of analgesia during breast surgery. Research has demonstrated that the employment of US-guided pectoralis nerve block II (PECS II), now recognized as Pectoserratus+Interpectoral Plane Block (PSPB+IPPB) following a recent standardized nomenclature study,[1] is effective in providing sufficient analgesia for breast surgeries.[2] Despite an extensive search on PubMed yielding over 1400 publications on pectoral nerve block up to the year 2019, a limited number of these papers addressed complications. Based on contemporary sources assessing the bleeding risk following fascial plane blocks in anticoagulant-using patients, deep nerve blocks should adhere to guidelines established for neuraxial procedures, while there is no standardized recommendation for superficial nerve block procedures.[3] Herein, we aimed to share our experience concerning pectoral muscle hematoma in a patient receiving anticoagulant therapy after PSPB+IPPB administration.

Informed consent for publication was obtained from the patient. A 70-year-old female, standing at a height of 165 cm and weighing 80 kg, was slated to undergo a radical mastectomy due to a confirmed breast cancer diagnosis. The patient presented with a medical history marked by diabetes, hypertension, a prior cerebrovascular event, and coronary artery bypass grafting, and her pharmacological regimen included acetylsalicylic acid (ASA). Preceding the surgery, routine preoperative laboratory assessments and imaging studies yielded results within the normal range, indicating a hemoglobin level of 10.6 g/dL, a platelet count of 189000, and an international normalized ratio (INR) of 0.95. Following preoperative medical consultations, a consensus was reached to stop the administration of ASA five days prior to the scheduled surgical procedure. Additionally, it was determined that a regimen of low molecular weight heparin (LMWH) therapy should commence, utilizing a dosage of 2x8000 anti-Xa international units (IU). The patient, classified as ASA III, underwent surgery under general anesthesia. During surgery, a multimodal analgesic approach included 1 g of intravenous (IV) paracetamol and 20 mg of IV tenoxicam. At the end of surgery, US-guided PSPB+IPPB was performed uneventfully with 40 mL of a local anesthetic mixture (20 mL 0.25%bupivacaine+10 mL lidocaine+10 mL saline). The patient stayed hemodynamically stable in the postoperative care unit (PACU) with a VAS score <4 and was discharged to the ward without complications.

At the 12th hour after surgery, the patient received a dose of 8000 IU of LMWH and continued with subsequent doses at 12-hour intervals. However, on the second day after the surgery, the patient reported experiencing weakness, fatigue, and dizziness, and

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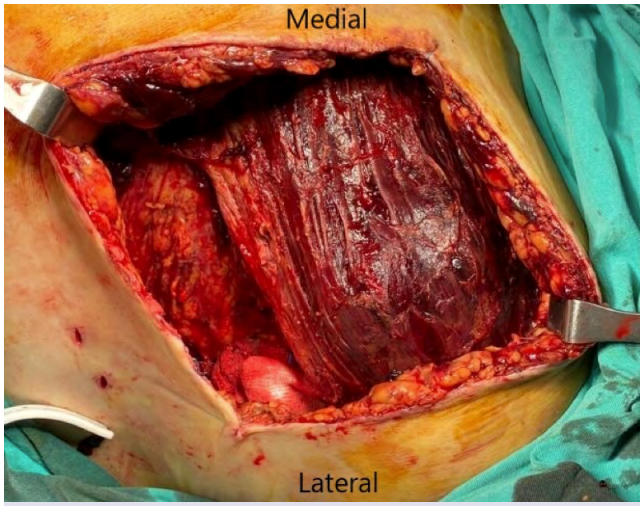

Figure 1. Image of the surgical site and pectoral hematoma during re-exploration.

Figure 2. Doppler sonographic view of the thoracoacromial artery.

SC: Subcutaneous tissue; PMM: Pectoralis major muscle; Pmm: Pectoralis minor muscle; R3: Third rib; PTA: Pectoral branch of the thoracoacromial artery.

her overall condition started to deteriorate. Upon physical examination, it was noted that there was significant bleeding around the drain sites, along with areas of pronounced ecchymosis extending to the axillary region and forearm. Following the patient's clinical deterioration, the surgical team conducted a repetition of routine laboratory assessments. With a hemoglobin level of 5 g/dL, the patient underwent a second surgery for hemostasis control. Upon exploration of the surgical field during this intervention, extensive bleeding zones were identified, manifesting as subcutaneous tissue leakage, drain entry points, and involvement of the axillary region. Additionally, a substantial hematoma had formed between the pectoral muscles, as depicted in Figure 1. The hematoma was successfully evacuated by aspirating approximately 700 mL of blood. Subsequently, the patient was transferred to the intensive care unit (ICU) while being intubated and accompanied by inotropic drug support. A total of three units of erythrocyte suspension and three units of fresh frozen plasma were transfused in a 1:1 ratio in the operating room and ICU. After 24 hours, the patient was extubated and then transferred to a regular ward 48 hours later. Remarkably, on the fifth day, she exhibited a complete recovery, leading to her discharge from the hospital.

Emphasizing the importance of thorough training in mastering sonoanatomy, gaining ample experience, and prioritizing the use of Doppler ultrasound before administering any regional anesthesia technique is critical for mitigating these risks effectively, particularly considering factors such as the presence of the thoracoacromial artery in chest wall blocks (Fig. 2).

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