Anesthetic approach of thoracic metastatic bone tumor surgery

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Background

Cancer is one of the major causes of morbidity and mortality worldwide. Primary malignant bone tumors constitute less than 1% of all cancers in adults, being osteosarcoma the most common primary malignant tumor of the long bones(1). Pulmonary metastasis are common, however a variety of atypical locations and presentations of osteosarcoma metastasis can occur in the thorax like isolated chest wall deposit without lung involvement(2). Perioperative management of patients undergoing musculoskeletal tumor surgery may be quite challenging due to the extensive surgical excisions. (3) PECS II block associated with interscalenic block allows the surgical excision of metastatic lesion at the anterior thoracic level with the margin extended to the level near shoulder.

Case report

Female, 45 years old, 75 kg, 165 cm, ASA III, with an history of distal femur osteosarcoma, with a recent diagnosed chest wall metatasis without lung involvement. Patient with a normal physical examination and laboratorial values was admitted in theater, proposed for excision of right metastatic soft tissue thoracic lesion of a bone tumor. Standard ASA monitoring was applied and venous access was provided. The administration of 2 mg of midazolam was made in order to provide greater comfort to the patient. Ultrasound in-plane interscalene block was performed with levobupivacaine 1% 12 ml. Then, ultrasound-guided PECS II block was performed with levobupivacaine 0,5%, being the first injection of approximately 10 ml made between the pectoral major and minor muscles, and a second injection of 15 ml made between the pectoralis minor and serratus anterior muscles. Surgery started 25minutes after the block with patient awake on spontaneous ventilation with oxygen supply. Sustained hemodynamic stability was achieved during the entire procedure. Surgery ended without any complications. During the procedure and in the 16h after surgery patient reported pain EN 0/10, with no need for any intravenous analgesic therapy. Recovery from sensory block took 16 hours. Patient was discharged 72 hours after surgery.

Figure 1: Patient supplied with O2, in spontaneous ventilation

Figure 2: Standard patient monitoring

Figure 3: Surgical approach

Conclusion

In this case, given that it is an excision of a soft tissue lesion in an area innervated by the medial and lateral pectoral nerves, thoraco-dorsal, long thoracic, intercostal branches and still encompass part of the antero-medial region of the shoulder, the association of interscalene blockade and PECS II allowed the surgery to be performed with no need of a general anesthesia association. This technique promoted cardiovascular and respiratory stability and provided optimal intra and postoperative analgesia, thus removing the need for opioid administration and decreasing pain scores.

References:

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