



INTRODUCTION

Scapular fractures present significant challenges in orthopedic trauma due to their complex anatomy and the potential for associated injuries.

Historically, scapular fractures were considered rare and often associated with high-energy trauma. However, recent studies have observed increased incidence (up to 2.2% of all trauma)¹, partly attributed to enhanced diagnostic imaging techniques improving detection rates.

Regional anesthesia techniques such as cervical paravertebral blocks, selective dorsal scapular nerve blocks, interscalene blocks, erector spinae blocks, and rhomboid intercostal blocks have provided adequate analgesia for surgical repair.² However, there is limited consensus on the optimal approach.

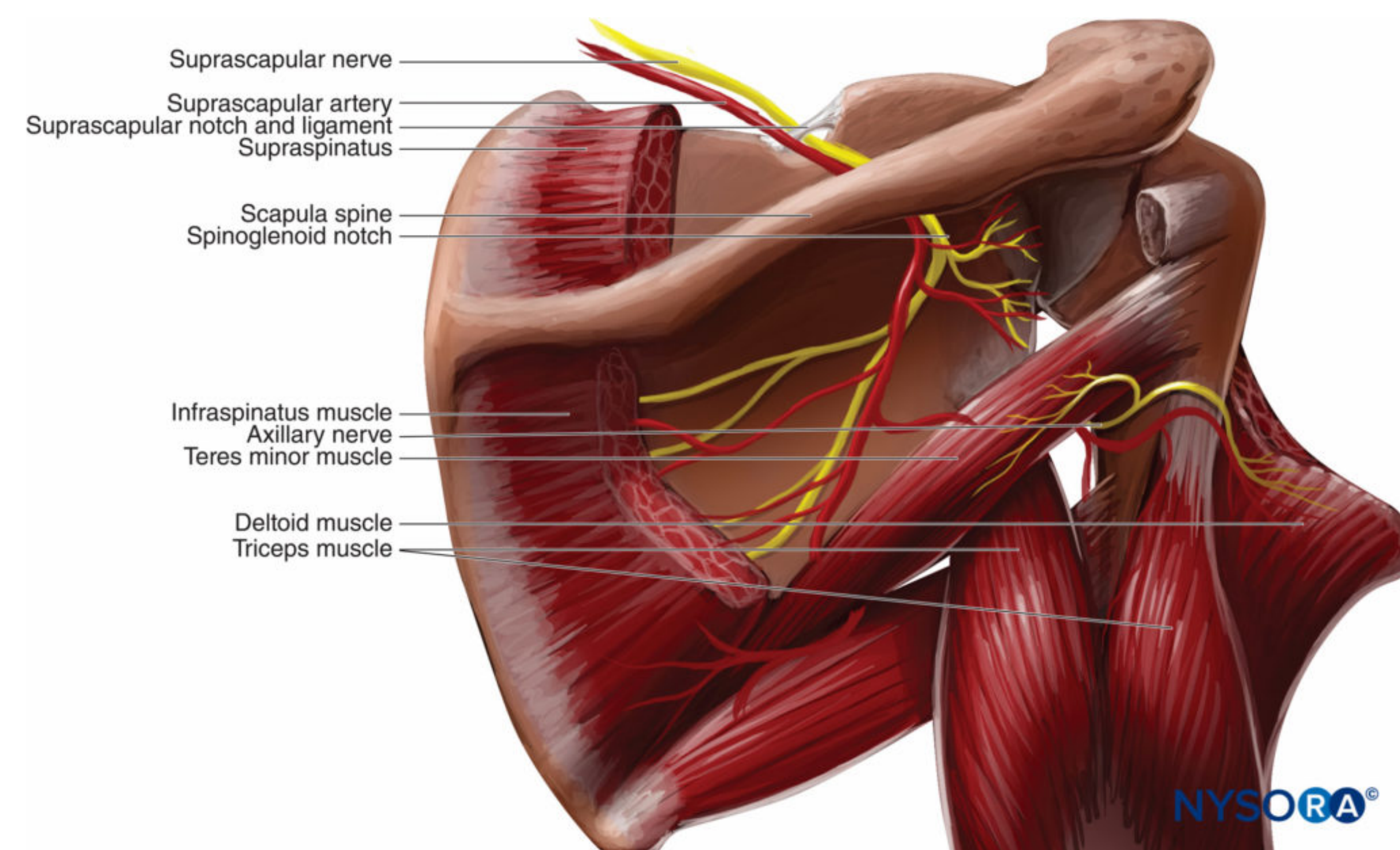


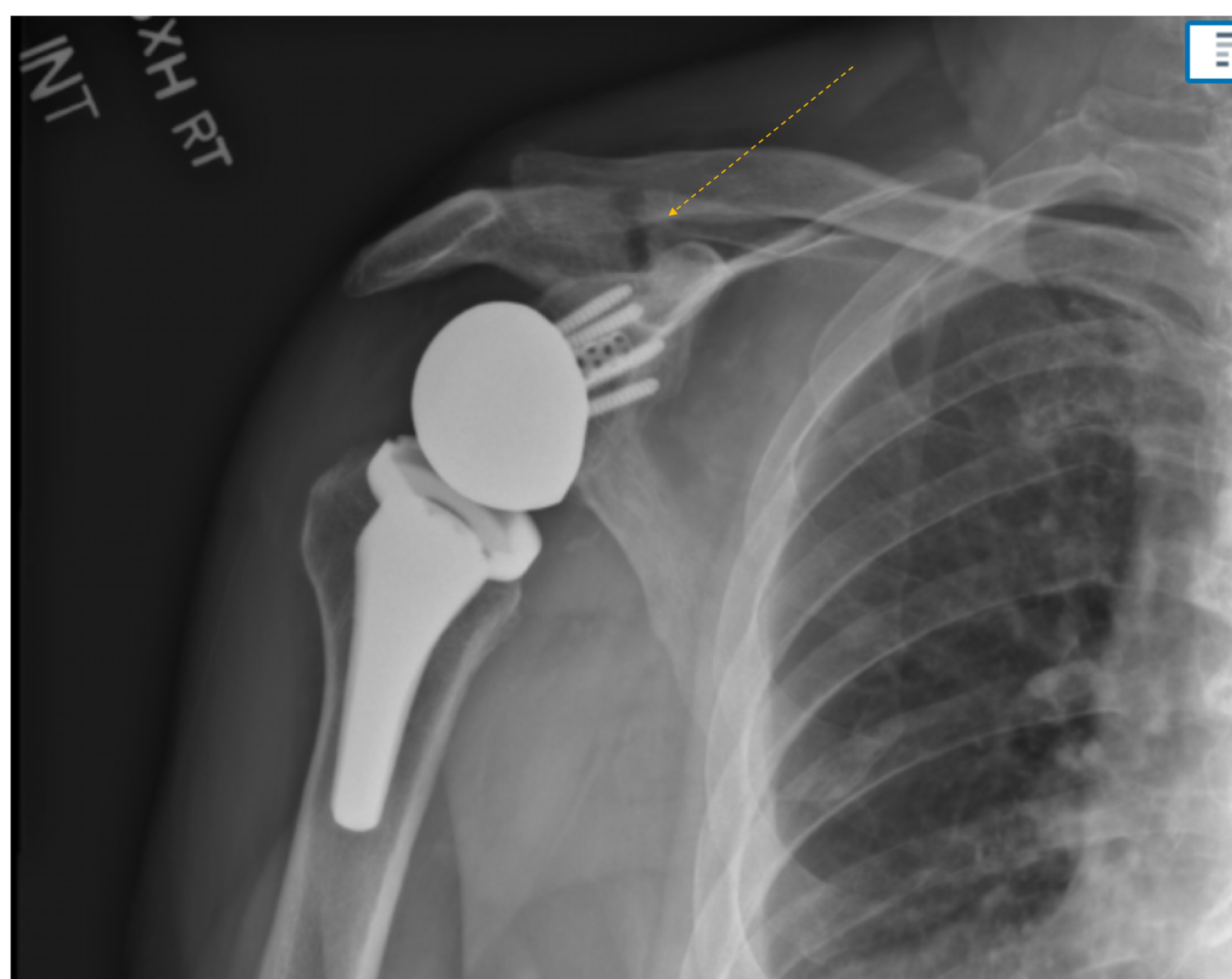
Figure: Scapula, Suprascapular Nerve, and Related Anatomy
NYSORA “Cutaneous Blocks for the Upper Extremity” Accessed Feb 2025

CASE

A 73-year-old gentleman with a displaced scapular spine fracture originating from the superior screw of a reverse total shoulder arthroplasty performed 3 months earlier.

Given the patient’s history and surgical requirements, we used a dual regional anesthesia technique consisting of a thoracic paravertebral block and an anterior suprascapular nerve block (both in a seated position) to optimize analgesia.

The blocks provided immediate pain relief, with the patient’s pain score decreasing from 8/10 to 2/10, improving shoulder range of motion without causing total motor weakness. The case proceeded under general anesthesia, requiring no additional narcotics intraoperatively or postoperatively.



Paravertebral Block

The T2 and T3 spinous and transverse processes were identified with a curvilinear probe, and the relative depth to the transverse process was noted.

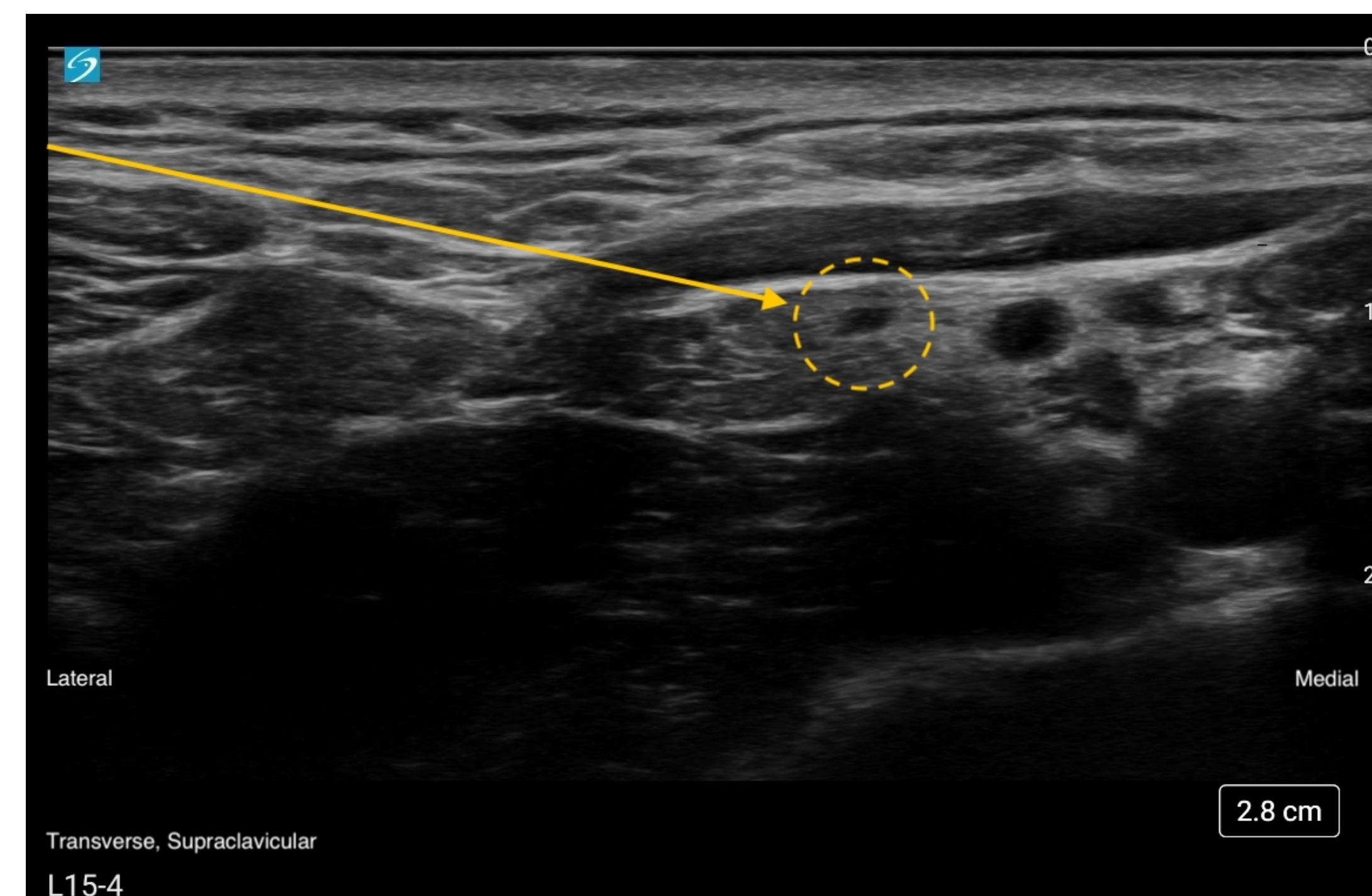
A 22Gx8cm Tuohy needle was inserted to contact the transverse process, then withdrawn to the subcutaneous tissue and redirected caudad.

The needle was advanced 1 cm beyond the depth of the transverse process to enter the paravertebral space. 6mL of 0.5% ropivacaine was deposited at each level (T2/T3 and T3/T4).

Suprascapular Nerve Block

From the supraclavicular nerve block anatomy, the suprascapular nerve was identified as the most lateral branch of the superior trunk, exiting laterally and posteriorly under the omohyoid muscle to enter the shoulder joint.

Under ultrasound guidance and nerve stimulation, a 22Gx5cm insulated needle was inserted in-plane, from lateral to medial, and 10mL of 0.5% ropivacaine was deposited near the suprascapular nerve, avoiding adjacent vessels.



DISCUSSION

- Regional anesthesia for scapular surgery encompasses a variety of techniques targeting the innervation of the scapula and surrounding musculature.
- Interscalene or erector spinae blocks, alone, are often insufficient to cover the multidimensional pain pathways involved in scapular fractures. Combination techniques, as in this case, may provide more comprehensive analgesia.
- The paravertebral block offers segmental coverage of thoracic spinal nerves, addressing somatic and sympathetic pain pathways.
- The suprascapular nerve block targets the supraspinatus and infraspinatus muscles, along with a significant portion of the scapular periosteum without causing significant motor weakness.
- This multimodal approach ensured adequate intraoperative anesthesia and postoperative analgesia.

REFERENCES

- Lim D. Scapula fractures: a review. EFORT Open Rev. 2021;6(6):518-525.
- Sonawane K et al. Scapular Block: An Innovative Procedure-Specific Regional Anesthesia Technique for Scapula Surgery- A Case Report. A A Pract. 2020;14(14):e01365.

