



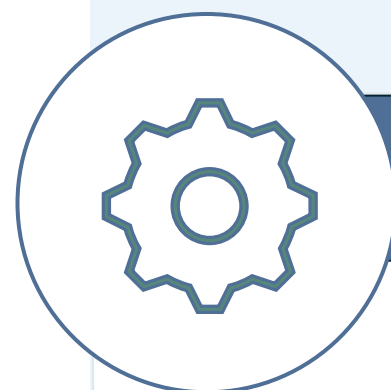
# Cervical Regional Anesthesia to Prevent Shoulder Pain After Minimally Invasive Lung Resection

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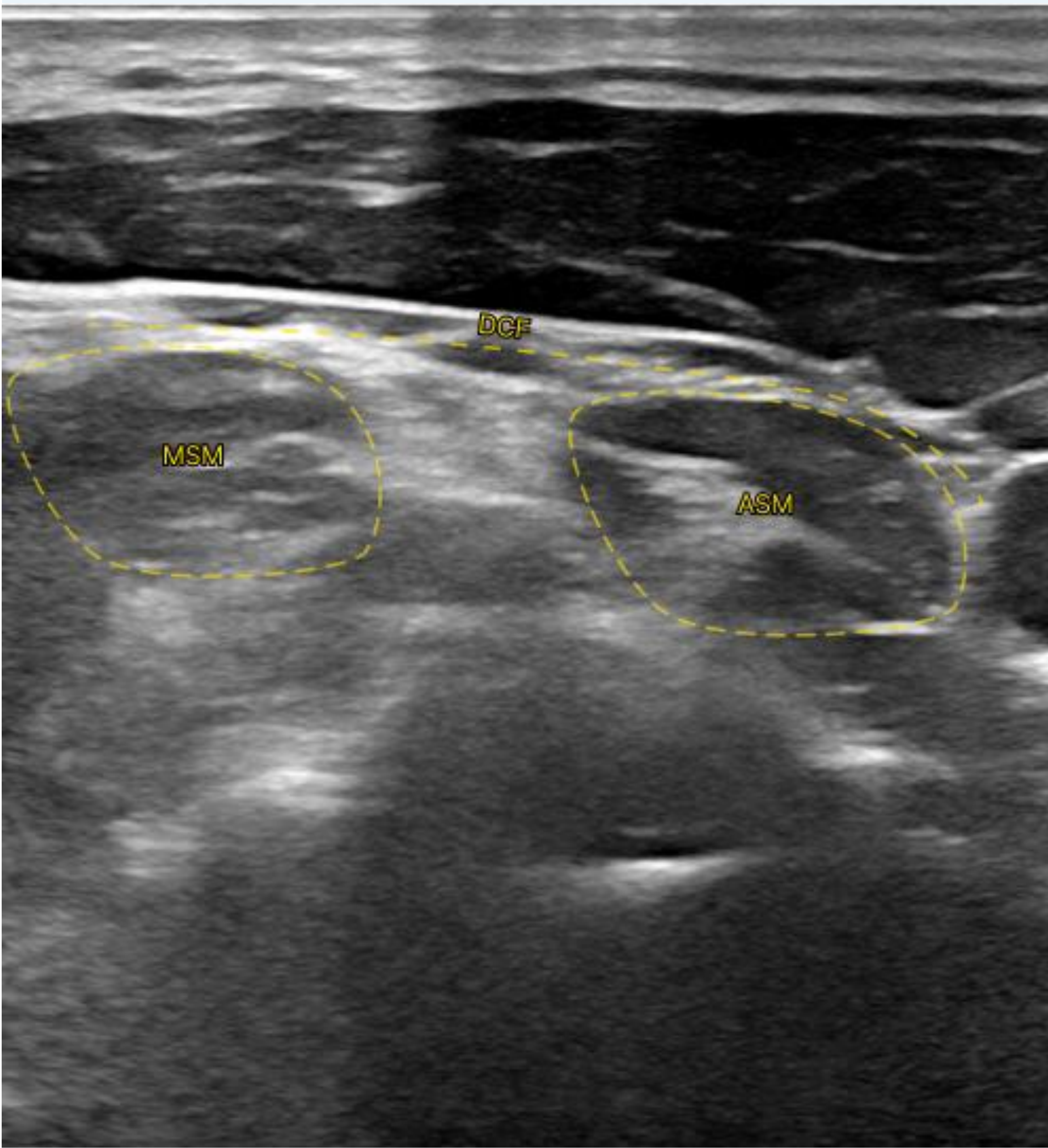
## BACKGROUND

- Postoperative shoulder pain remains common after minimally invasive thoracic surgery
- Shoulder pain is often poorly responsive to standard thoracic regional analgesia
- Cervical innervation may contribute to referred shoulder pain
- Cervical regional anesthesia in thoracic surgery remains scarcely described



## METHODS

- Prospective single-center case series including 13 consecutive adult patients
- Minimally invasive pulmonary resection via mini-thoracotomy
- Standardized general anesthesia and multimodal analgesia
  - PVB (Ropivacaine 0.5%, 20 mL) + ESPB (Ropivacaine 0.25%, 20 mL)
- Ultrasound-guided combined interscalene and intermediate cervical plexus block performed at the end of surgery
  - Ropivacaine 0.1%, 20 mL total volume
- Evaluated outcomes:
  - postoperative pain (NRS)
  - shoulder pain
  - upper-limb motor function
  - respiratory and neurological complications

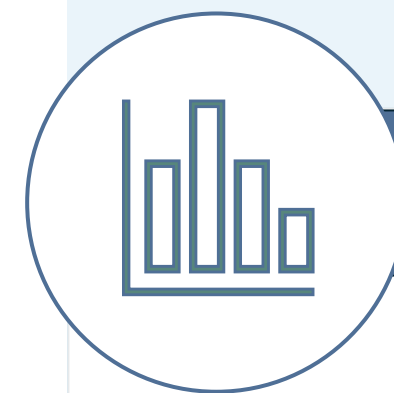


Ultrasound view of the interscalene space and deep cervical fascia



## AIM

To evaluate feasibility and analgesic efficacy of combined interscalene and intermediate cervical plexus block after minimally invasive lung resection



## RESULTS

**13**

**patients**

- No respiratory impairment observed
- No hemidiaphragmatic elevation

**0/13**

**shoulder pain**

- No complete upper-limb motor block, transient upper-limb weakness in 3 patients

**NRS <4**

**during first 48 h**

- No local anesthetic systemic toxicity
- Technique feasible and well tolerated



## CONCLUSIONS

Combined interscalene and intermediate cervical plexus block may represent a feasible adjunctive analgesic strategy to prevent postoperative shoulder pain after minimally invasive thoracic surgery

Larger prospective studies are warranted