

Interscalene Brachial Plexus Block following Cryoablation of Shoulder Fibromatosis

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Introduction

Desmoid fibromatosis of major joints causes significant pain due to adjacent neurovascular compression and the space-occupying nature of the tumor itself

- **Cryoablation** - effective for extra-abdominal fibromatosis, requires GA, and can cause significant post-procedural pain.¹
- **No clear standardized approach to pain management**

We describe the use of interscalene brachial plexus blockade (ISB) for both chronic and post-procedural pain following a shoulder cryoablation procedure for progressive fibromatosis.

Clinical Images

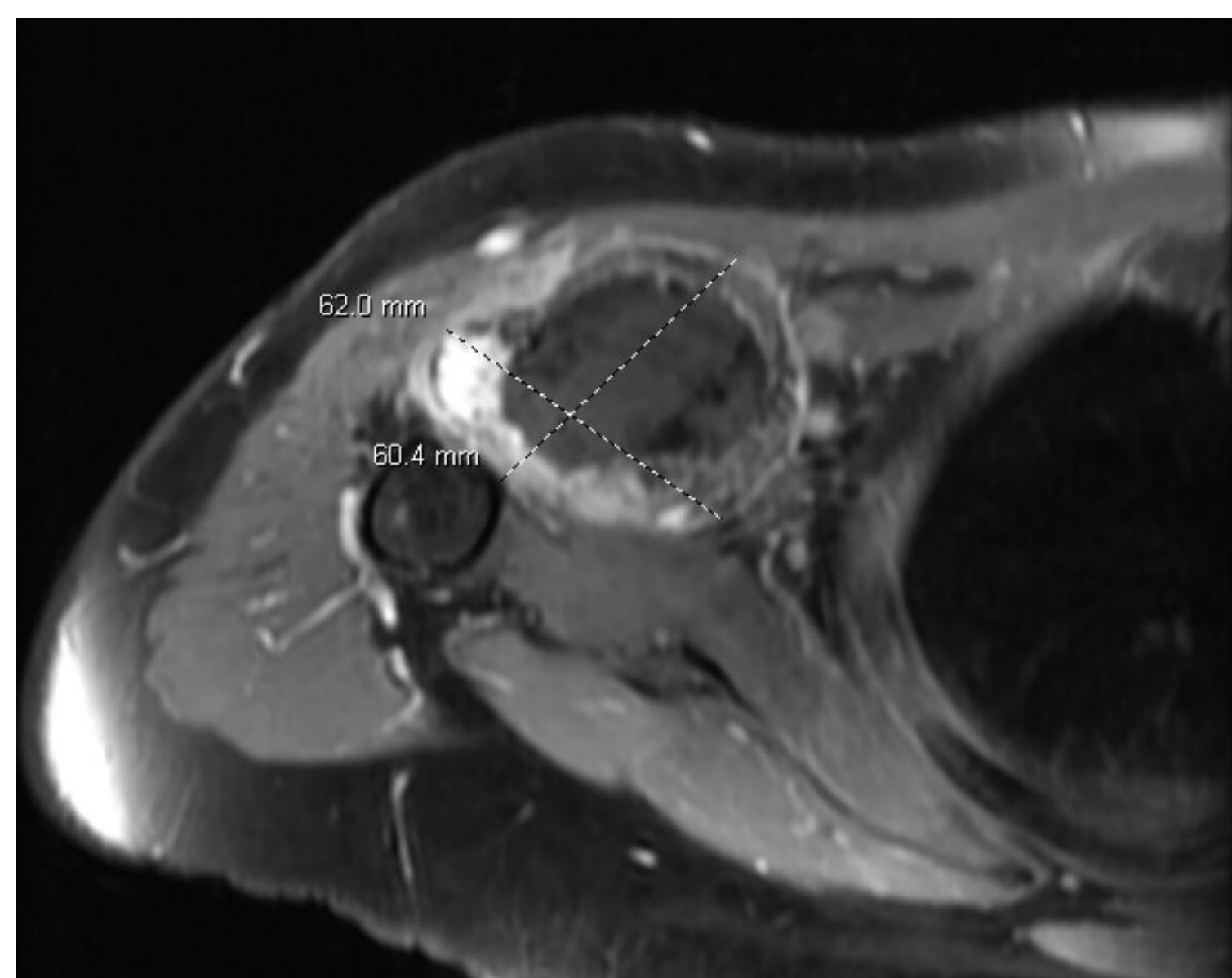


Figure 1: MRI depicting fibromatosis involvement along anterior shoulder joint capsule

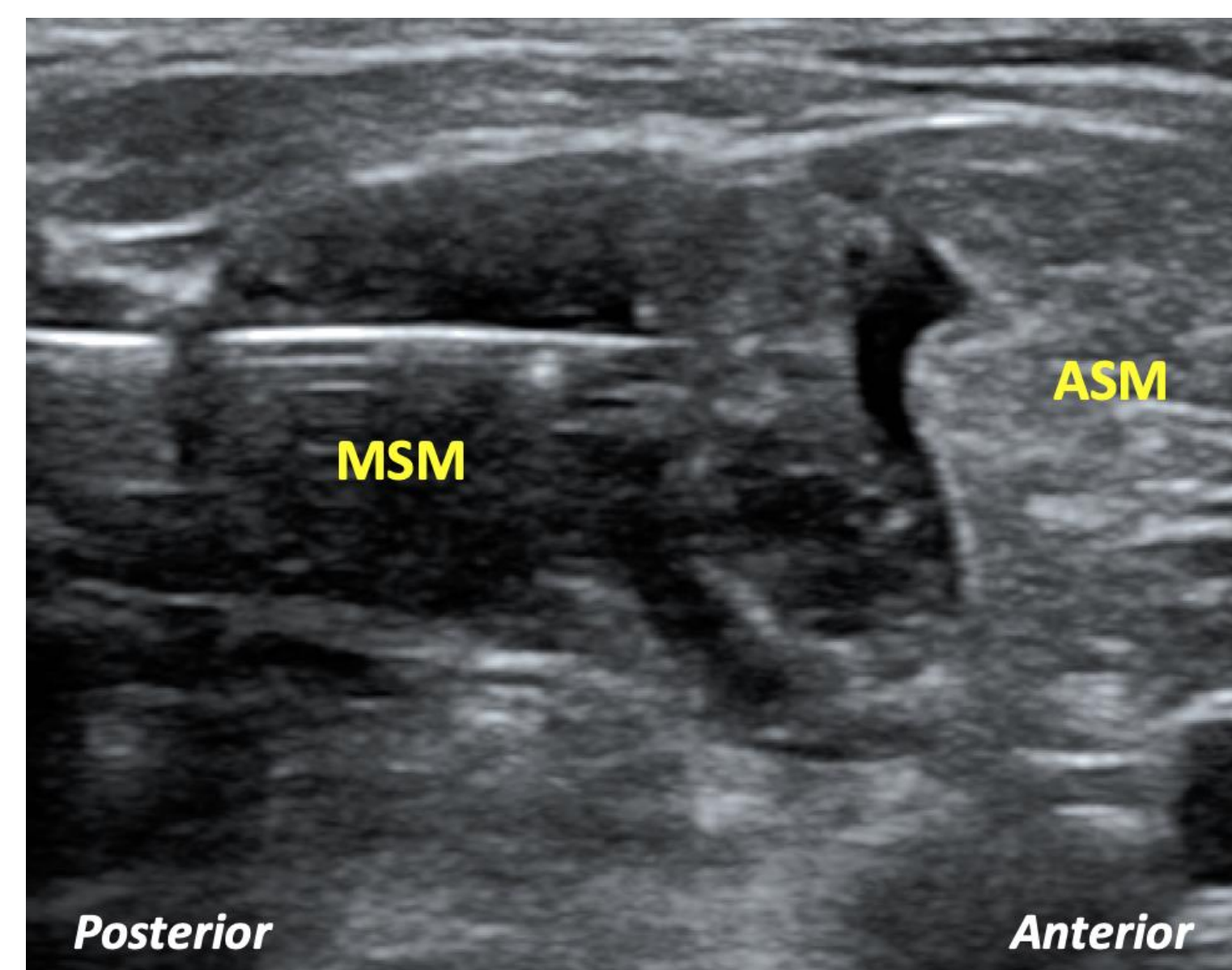


Figure 2: Ultrasound of ISB. ASM: Anterior Scalene; MSM: Middle Scalene Muscle

Case Report

46-year-old woman with **progressive right anterior shoulder desmoid fibromatosis** underwent **serial cryoablation** after failed chemotherapy and surgical resection. Following cryoablations, she noted improvement with range of motion, but also significant pain in axilla and upper arm.

- Gabapentin 300 mg TID and oxycodone 15 mg PRN
- **Uncontrolled and debilitating pain over right shoulder**

Third cryoablation procedure schedule after MRI findings revealed persistent nodular involvement involving joint capsule, chest wall, and brachial plexus (**Figure 1**).

- Due to pre-existing persistent pain, acute pain team consulted
- Intra-op: GA, multimodal analgesia, uneventful
- Post-op: **ISB block** (10 ml of 1.3% liposomal bupivacaine and 10 ml of 0.25% bupivacaine) (**Figure 2**), with **supplementary pecto-serratus fascial plane block** (20 ml 0.25% Bupivacaine).

Post-procedure, pain scores improved (3-6/10) from baseline and remained consistent for 48 hours. Multimodal regimen included acetaminophen, ketorolac, gabapentin, and methocarbamol.

- Patient required overall less oxycodone for breakthrough pain in comparison to home regimen
- **Patient endorsed overall effective pain management with only minimal pain at discharge**

Discussion

Desmoid neurofibromatosis causes chronic and recurring symptoms, often necessitating recurrent treatment. In scenarios where pain arises from deranged innervation or neurovascular compression, patients require **escalating opioid regimens**.²

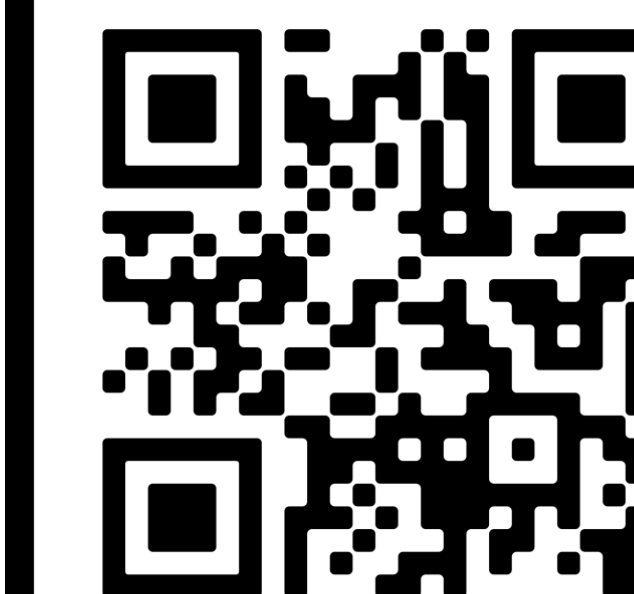
- **Limited evidence exists on optimal pain management techniques** following recurrent excisions of neurofibromas.³

Although cryoablation is an effective tumor destruction modality, peri-procedural pain continues to be a challenge

- **Post-cryoablation pain requires extended analgesic care, ranging 4 weeks to 4 months**, despite the non-invasive technique
- ISB is effective, but **utility in recurrent extremity tumors** is unclear

Our case demonstrates the use of ISB along with a pecto-serratus plane block for more comprehensive blockade of relevant targets contributing to the patient's clinical symptoms. This strategy also helped act as an effective bridge to the patient's home opioid regimen.

*With **no consensus** on optimal pain management techniques for patients undergoing cryoablation procedures, utilization of regional anesthetic techniques in the non-OR setting can effectively **reduce postoperative pain scores** and limit chronic opioid use during recovery.*⁵



Abstract