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Ultrasound-Guided Shoulder Radiofrequency Ablation in Chronic Shoulder Pain After Total Arthroplasty: A Technical Description

Topic: Pain

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BACKGROUND

Total shoulder arthroplasty (TSA) is a frequently performed surgery, however, up to 10% of patients may report persistent pain after TSA. Radiofrequency ablation (RFA) is an established technique for the treatment of chronic shoulder pain. Traditional fluoroscopy-guided RFA for chronic pain after TSA is challenging due to metallic interference from implants. In contrast, ultrasound (US) guidance enables precise probe placement, ensuring safe and effective needle positioning while avoiding contact with metal hardware. This technical description outlines a combined US and fluoroscopy-guided approach to optimize needle placement for RFA in post TSA patients.

METHODS

Under ultrasound guidance, the articular branches of the suprascapular (SSN), axillary (AN), and lateral pectoral (LPN) nerves are precisely targeted, allowing for accurate probe placement while ensuring no contact with metal components from the arthroplasty. A curvilinear probe is used to visualize anatomical landmarks for the acromial, superior and inferior branches of the SSN around the superior and posterior glenoid. For the articular sensory branches of the AN and the articular branches of the LPN a high-frequency linear probe is used, targeting the inferior and lateral border of the greater tuberosity and the coracoclavicular space, respectively. Once optimal positioning is confirmed via US, fluoroscopy is used to confirm proper needle location and contrast dye.

RESULTS

This technique combines US and fluoroscopy to enable precise and safe needle placement. Ultrasound provides visualization for accurate targeting, while fluoroscopy confirms the procedure and contrast spread. This approach enhances effective denervation with minimal risk of implant interference, optimizing both safety and efficacy.

CONCLUSION

Ultrasound-guided RFA combined with fluoroscopy provides an optimized approach for performing nerve ablation in post-arthroplasty shoulder patients. This method enhances precision, safety, and efficacy, making it a valuable technical strategy for clinicians performing shoulder RFA in patients with chronic pain post TSA.

Statement of Disclosures

None

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