

SAFETY AND EFFICACY OF ULTRASOUND AND FLUOROSCOPY-GUIDED RADIOFREQUENCY THERMAL ABLATION IN OSTEOARTHRITIS HIP PAIN

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Background and Aims

Osteoarthritis hip pain significantly impacts quality of life. When conservative treatments fail and surgery is not viable, less aggressive strategies are needed. Thermal radiofrequency ablation has emerged as a minimally invasive alternative for pain control. Ultrasound and fluoroscopy have refined the precision targeting neural structures. The aim of the study is to evaluate the safety and efficacy of associating ultrasound and fluoroscopy to guide hip joint denervation for the treatment of osteoarthritis hip pain.

Methods

An analysis of clinical records and patient interviews were conducted from January 2022 to January 2025. Patients with hip osteoarthritis experiencing severe pain and undergoing ultrasound and fluoroscopy-guided thermal radiofrequency ablation of the articular branches of the femoral, obturator, and accessory obturator nerves were included. Pain and functional outcomes were assessed with Numeric Pain Scale and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Additionally, adverse effects and analgesics use were documented.

Results

A total of 32 patients were included, 60% male, with a mean age of 64.09 ± 13.98 years. Symptoms persisted for 40.91 ± 38.98 months. Radiographic Tönnis classifications were distributed between grade II (53%) and III (47%). Additionally, 56% of patients presented associated pathologies, mainly femoroacetabular impingement (83%). Pre-intervention pain scores averaged 8.39 ± 1.47 , reducing 4.78 ± 2.35 ($p < 0.001$). The initial mean WOMAC score was 72.91 ± 12.41 , decreasing 38.39 ± 18.09 ($p < 0.001$). The mean time from procedure to reassessment was 7.17 ± 3.89 months. Regarding obesity, no statistically significant relationship was found with pain reduction efficacy ($p = 0.8684$) or functional improvement ($p = 0.8303$). Concerning analgesics consumption, 19 patients discontinued pain medication entirely. Regarding procedural safety, no adverse effects were reported.

Conclusion

Ultrasound and fluoroscopy-guided radiofrequency nerve ablation represented an effective strategy, significantly reducing osteoarthritis hip pain, with notable improvements in functional scores. However, larger prospective studies with well-defined follow-up periods are necessary to better understand the duration of the therapeutic effect and the factors associated with a better prognosis.

Keywords: Hip; Osteoarthritis; Pain; Radiofrequency; Denervation