Dermatol Surg. 2013 Oct;39(10):1446-51. doi: 10.1111/dsu.12269. Epub 2013 Jul 18.

Noninvasive lipoma size reduction using high-intensity focused ultrasound

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PMID: 23866057 DOI: 10.1111/dsu.12269

Abstract

Background: Lipomas are common benign mesenchymal tumors commonly removed using excision, but in certain cases, surgery is undesirable or ineffective. High-intensity focused ultrasound (HIFU) offers a noninvasive tumor ablation tool increasingly used in the clinic.

Objective: To evaluate the efficacy and safety of a noninvasive lipoma size reduction technology using HIFU.

Materials & methods: Twelve lipomas in nine patients were treated. Patients underwent four treatment sessions with a 3-week interval between treatments. Blood and urine tests and tolerability based on a standard visual analogue scale (VAS) were used to monitor patients for adverse effects. Lipoma volume was determined by measuring width and length (manually) and depth (ultrasonically).

Results: The range of lipoma size was 2.7-169.4 cm3 before treatment and 0.2-119.8 cm3 after treatment. Mean volume reduction was 58.1 ± 22.8%. When palpated, the lipomas felt much softer than before treatment. The average VAS score was 4.1 ± 2.4. No significant adverse effects were noted.

Conclusion: The treatment was shown to be effective in noninvasively reducing lipoma size. The average volume reduction was substantial and statistically significant. The treatment was safe and well-tolerated. HIFU may be an alternative treatment modality in cases of lipoma.

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