

Myositis from intramuscular oil injections in a bodybuilder

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A 32-year-old amateur bodybuilder presented with bilateral upper-arm erythema, pain and swelling. He had previously received treatment with antibiotics for presumed unilateral cellulitis of his left arm 6 times and right arm twice over the past 5 years. He described numerous intramuscular injections of site enhancement oil, commonly known as synthol, 10 years earlier. The injections had been predominantly into his biceps, but also into his triceps and deltoids, and had produced immediate painful muscle enlargement. His left arm had a well-demarcated erythematous patch that was warm and nontender over his distal bicep (Figure 1A). Both biceps were tender, irregular and firm, with decreased elbow extension. Serologic testing for rheumatologic and infectious conditions was negative (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.191500/-/DC1).

Magnetic resonance imaging of the patient's left arm (Figure 1B–D) showed plaque-like, multinodular heterogeneous tissue throughout the superficial biceps, consistent with chronic granulomatosis. T_1 - and T_2 -weighted sequences showed extensive nonuniform edema-like signal and mild fatty atrophy, with 2 regions of marked hyperintensity. The short tau inversion recovery sequences showed nodular areas of marked signal hypointensity, extending beyond the corresponding T_1 - and T_2 -weighted images, depicting the absence of water. These findings confirmed the presence of a lipid intramuscular foreign body.

Core biopsies of the patient's superficial bicep showed no microorganisms. Histopathology (Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.191500/-/DC1) showed fibrosis, a chronic lymphocytic infiltrate and multinucleated foreign-body giant cell reaction directed against histologically clear material.

We prescribed 5 days of 50 mg prednisone, and the patient's symptoms improved within 2 days. However, after multiple recurrent steroid-responsive flares, he is awaiting surgical resection of both bicep lesions for definitive management.

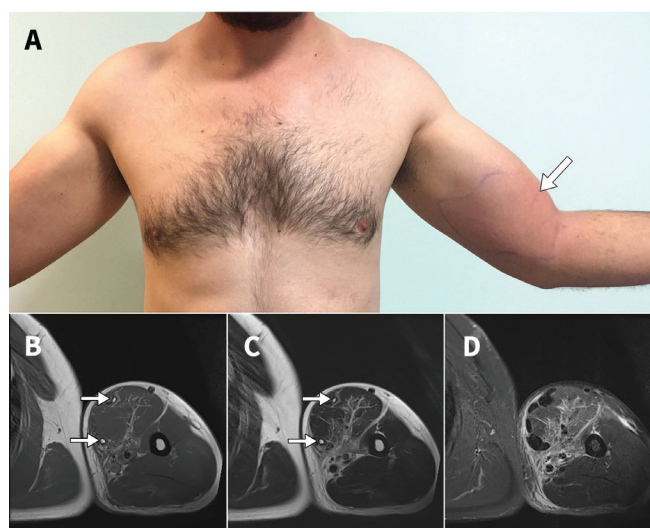


Figure 1: (A) Photograph of a 32-year-old amateur bodybuilder showing an erythematous patch over his left bicep (arrow), (B) axial T_1 -weighted magnetic resonance imaging (MRI) and (C) axial T_2 -weighted MRI showing hyperintensity (arrows), and (D) axial short tau inversion recovery MRI showing nodular areas of marked signal hypointensity.

Site enhancement oils are marketed online as intramuscular bulking agents, and they have been associated with delayed, painful inflammatory muscle fibrosis.^{1,2} Surveys suggest these products are used by about 5% of bodybuilders.^{1,3,4}

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