Published in final edited form as:

Arthritis Rheumatol. 2016 July ; 68(7): 1636. doi:10.1002/art.39693.

Thyroid acropachy: rheumatologic and imaging manifestations.

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A 53-year-old Caucasian male with a 25-year history of Graves' disease presented for evaluation of progressive skin change. His disease course was characterized by orbital decompression surgery and by prior treatment with radioiodine. He endorsed chronic tobacco use. His chief complaint upon presentation was that of progressive swelling of the lower extremities with more recent onset of tightness and redness of the dorsal surface of his hands. Examination demonstrated multiple firm, non-pitting asymmetric plaques on the shins as well as verruciform nodules involving both feet (A). Clubbing of the fingers with diffuse, moderate swelling and nodularity of the hands and forearms were present (B). The patient was determined to be euthyroid but with thyrotropin receptor antibody detected at high titer. Age related cancer screening was negative. X-rays of his hands revealed hyperostosis most evident along the diaphysis of the second through fifth proximal phalanges, at the ulnar aspect of the fifth metacarpal shaft, and also at the level of the distal radial metaphysis (C). The periostitis was fluffy and spiculated. Prominent irregular periosteal new bone formation in the distal medial tibias was seen bilaterally (D). Based upon the clinical presentation and X-ray findings in the setting of negative age- appropriate cancer screening, the diagnosis was assigned as thyroid acropachy. Thyroid acropachy is an extreme manifestation of autoimmune thyroid disease. It presents with digital clubbing, swelling of digits and toes, and periosteal reaction of extremity bones. It is almost always associated with ophthalmopathy and thyroid dermopathy. In acropachy, radiographs show a characteristic subperiosteal spiculated, frothy, or lacy appearance quite different from the laminal periosteal proliferation of classic pulmonary osteoarthropathy. This case highlights the fact that the periostitis of thyroid acropachy may affect the tubular bones of the hands as well as the long bones of the legs.

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Financial disclosures/funding sources statement: There is no potential conflict of interest. None of the authors in this manuscript received any financial support before or during the production of this manuscript.

Publisher's Disclaimer: This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version record. Please cite this article as an 'Accepted Article', doi:10.1002/art.39693