Nodular Foot Myxedema
Masquerading as Lymphedema

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Lymphedema is the chronic, progressive swelling because of inadequate lymphatic function. The accumulation of protein-rich fluid in the interstitial space causes subcutaneous adipose deposition. Secondary lymphedema occurs after injury to lymphatic vessels or lymph nodes. Primary (idiopathic) lymphedema is rare, affecting 1:100,000 persons.\(^1\) We report a patient referred to our Lymphedema Program because of “swollen” toes who instead was diagnosed with foot myxedema.

**CASE REPORT**

A 59-year-old woman developed soft-tissue overgrowth of the right foot during the previous year. She complained of pain and difficulty fitting shoes. Her only risk factor for lymphedema was a history of morbid obesity. She underwent a bariatric weight-loss procedure 13 years previously and decreased her body mass index from 63 to 30 kg/m\(^2\). She denied a family history of lymphedema, travel to areas endemic for filariasis, or inguinal trauma (ie, operations, lymphadenectomy, radiation). The patient was healthy except for hypothyroidism, which was treated with levothyroxine 0.2 mg/d.

Physical examination showed dorsal overgrowth of the large and adjacent toe of the right foot (Fig. 1). Although soft-tissue overgrowth can occur with lymphedema, the feet did not exhibit signs commonly present with the disease: pitting edema and a Stemmer sign (ie, the skin of the dorsum of the foot cannot be pinched between 2 fingers). Because the patient had a risk factor for lymphedema (previous body mass index > 60) and overgrown soft tissue of the toes, a lymphoscintigram was performed to determine whether or not she had lymphedema. Lymphoscintigraphy showed normal lymphatic function in both lower extremities (ie, normal transit time, absence of dermal backflow).\(^2,3\) To improve her symptoms, the soft-tissue overgrowth was resected. Histopathological examination illustrated cutaneous myxedema.

**DISCUSSION**

Patients with an overgrown extremity are often labeled with “lymphedema” regardless of the etiology of their condition. One-fourth of individuals referred to a Lymphedema Program have...
another disease.\textsuperscript{4,5} The differential diagnosis of lymphedema includes vascular anomalies, venous insufficiency, lipedema, obesity, systemic conditions (eg, cardiac, renal, hepatic dysfunctions), hemihypertrophy, orthopedic pathology (eg, ligament sprain, tenosynovitis), and rheumatologic conditions.\textsuperscript{4,5} In this report, we describe a patient who was referred with “lymphedema” because of overgrown toes who was diagnosed instead with localized myxedema.

Localized myxedema is also known as pretibial myxedema or thyroid dermopathy.\textsuperscript{6} It affects up to 4\% of patients with thyroid disease; 91\% have hyperthyroidism, 6\% are hypothyroid, and 3\% are euthyroid.\textsuperscript{7} Eighty percent of patients are female, and the mean age at diagnosis is 53 years.\textsuperscript{7} The pretibial area is affected in 93\% of patients; the feet are the second most common site (4\%).\textsuperscript{7} There are 4 forms of the condition: nonpitting edema (43\%), plaque (27\%), nodular (19\%), and elephantiasic (3\%).\textsuperscript{7} Histopathological examination shows separation of collagen by mucin in the reticular dermis and large amounts of glycosaminoglycans.\textsuperscript{7}

The pathophysiology of localized myxedema is unclear. It is hypothesized that thyroid-stimulating hormone receptor antibody might stimulate fibroblasts to produce glycosaminoglycans.\textsuperscript{7} The pretibial area may be most susceptible because of dependent positioning in an area subjected to stress forces.\textsuperscript{6} Localized myxedema can improve over time; one study showed 50\% remission in patients with 17 years of follow-up.\textsuperscript{7} The most commonly used treatment for symptomatic lesions is topical corticosteroid; other interventions have included compression dressings, intralesional octreotide or corticosteroid, systemic corticosteroid, immunoglobulin, plasmapheresis, and resection.\textsuperscript{7}

The patient presented in this report had a less common presentation for localized myxedema because she was hypothyroid, the foot was affected, and she had the nodular form of the disease. Although pa-
tients with lymphedema can have hyperkeratosis and lymphatic vesicles, massive soft-tissue overgrowth isolated to 2 toes over a period of 12 months is not consistent with the disease. Localized myxedema should be included in the differential diagnosis of lymphedema.

Arin K. Greene, MD, MMSc
Department of Plastic Surgery and Oral Surgery
Boston Children’s Hospital
300 Longwood Ave., Boston
MA 02115
E-mail: arin.greene@childrens.harvard.edu

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