LETTER TO THE EDITOR

Localized Myxedema of the Foot: A Rare Presentation of Graves' Dermopathy

Dermopathy or pretibial myxedema is a rare manifestation of Graves' disease, which occurs in up to 4–5% patients. The pretibial area is the most commonly involved (99.4%) region. We report a case who presented with localized myxedema of her right foot with no involvement of the pretibial region. The patient is a 43-year-old woman who was diagnosed to have Graves' disease in 2007, and her condition was managed with antithyroid drugs. Her initial antibody (Ab) titer was high [TSH receptor Ab (TRAb), 46%, and antithyroid peroxidase Ab, 1:2500], and her hyperthyroidic status was treated with methimazole (5–30 mg/day). She had no symptoms of ophthalmopathy. However, a painless, well-demarcated nodule about 5 cm in diameter developed over the dorsal side of her right foot (Figure 1A) with no involvement of the pretibial region since July 2011. She visited a plastic surgeon and received local excision of the nodule. After excision, the nodule developed again within 5 months (Figure 1B). The pathological report revealed interstitial fibrosis and hyalinization with some degree of interstitial mucin deposition (Figure 1C), which is compatible with Graves' disease-related dermopathy.

The majority of patients with dermopathy had ophthalmopathy (97.0%). The most common time of onset of dermopathy is 12–24 months after the diagnosis of hyperthyroidism, but 12% of patients develop dermopathy 4–12 years after the diagnosis of thyrotoxicosis. This patient developed dermopathy about 4 years after diagnosis and she had no symptoms of ophthalmopathy. Graves' hyperthyroidism results from direct stimulation of thyroid follicular cells by TRAb, and dermopathy is often seen associated with higher concentrations of TRAb. Generally, thyrotoxicosis develops first, followed by ophthalmopathy, and finally dermopathy in patients who have all of such manifestations. Therefore, we concluded that development of dermopathy takes longer because of a more severe immune process. In this case, the dermatological lesion was unilateral and localized on the right foot only. No pretibial lesion was seen. In addition, a consequent ophthalmopathy was not seen in this patient, despite her hyperthyroidic status. Graves' dermopathy results from accumulation of glycosaminoglycans in dermis that is secreted by fibroblasts under cytokine stimulations, which results in retention of fluid, separation of fibers, and expansion of connective tissues. Classic histopathologic features show normal collagen in the papillary dermis and separation of the collagen bundles by mucin. Mucin staining demonstrated abundant diffuse mucin within the dermal fenestrations as increased levels of glycosaminoglycans in the reticular, with hyaluronic acid concentrations often 6–16 times higher in these lesions than in normal skin.

Treatment of dermopathy starts with minimizing risk factors, such as avoiding tobacco, weight reduction, and normalizing of thyroid function. High-potency topical corticosteroids with or without Figure 1 Graves' dermopathy of the right foot. (A) Prior to surgery: the lesion was firm, nonpitting, and limited to the foot. (B) Five months after surgery the nodule developed again. (C) Photomicrograph of the nodule shows fibroadipose tissues and vascular channels. Focally, interstitial fibrosis or hyalinization was seen with some degree of interstitial mucin deposition (hematoxylin and eosin; origin magnification, x40).
occlusion or intraregional corticosteroids are the best approach. Long-standing dermopathy may be resistant to all forms of therapy. Surgical excision has also been tried, but trauma almost always precipitates a recurrence of the disease and should not be attempted.⁷

References


Anne Chang, An-Tsz Hsieh* Division of Endocrinology and Metabolism, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan

* Corresponding author. An-Tsz Hsieh, Division of Endocrinology and Metabolism, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan. E-mail: A.-T. Hsieh <antsz@tmu.edu.tw>

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