Case of the Month:

July/August’s Diagnosis

Graves’ Disease

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A skin biopsy revealed thickening of the epidermis and deposition of large amounts of mucin predominantly in the upper and mid reticular dermis without inflammation typical of pretibial myxedema (PTM).

PTM, also known as infiltrative dermopathy or localized myxedema, is the least common of the mucocutaneous manifestations of Graves’ disease. Other classic manifestations include exophthalmos and thyroid acropathy (digital clubbing and osteoarthropathy of the phalanges). It typically develops during the second year of disease often after thyroid abnormalities have been corrected. PTM is rare, occurring in 15% of patients with exophthalmos and only about 5% of patients with thyroid acropathy. In the majority of cases, patients have exophthalmos, which usually precedes the development of PTM. The incidence of PTM may be on the decline as thyroid disease is now detected and treated at earlier stages than in the past. Rarely this infiltrative dermopathy is seen in patients with autoimmune thyroiditis or no evidence of thyroid disease.

Lesions most often occur bilaterally on the lower legs as asymptomatic discrete and confluent brownish-red plaques and nodules. Lesions also are seen on the neck, shoulders, arms, hands, and at areas of trauma including scars and donor skin graft sites. Usually these nodules are limited in number and size; however, extensive bilateral lower-extremity involvement has been well described and can take on an elephantiasis-like presentation, usually associated with very high titers of antithyroid-stimulating hormone receptor antibodies.

Biopsy of affected skin reveals a thickened dermis with fragmented collagen bundles and dermal deposition of mucin with rare extension to the subcutaneous fat. The mucin is predominantly composed of hyaluronic acid, and several theories have been proposed to explain why and from where these mucopolysaccharides are produced. Thyroid hormones probably are not important in disease as the lesions do not vary with thyroid hormone levels and often develop following treatment when patients are in a euthyroid state. Several studies have shown that patients’ serum contains immunoglobulins A anti-antibodies that bind to dermal and retro-ocular fibroblasts. However, the antigens for these antibodies have not been identified, and no causative role has been established experimentally. Alternative theories implicate lymphocyte-derived cytokines in fibroblast stimulation and subsequent production of glycosaminoglycans.

Treatment may include topical or intralesional corticosteroids. Correction of the thyroid abnormalities to a euthyroid state has no effect on the lesions, and systemic steroids are of no proven benefit. In most patients, the lesions are only of cosmetic concern, thus aggressive and costly treatment strategies such as intravenous immunoglobulin, plasmapheresis, and immunosuppressive medications are not warranted in most cases.

References

Dr. Cowan is a fellow assistant resident; Dr. Cohen is Acting Chief, Dermatology, Johns Hopkins Hospital, Associate Professor of Dermatology and Pediatrics, Johns Hopkins University School of Medicine, Baltimore, Maryland. For similar cases see Dr. Cohen’s website dermatlas.org.

CASE OF THE MONTH

AMA PRA or AAFP CME Credits can be obtained online only, at no charge

Goal
The goal of Johns Hopkins Advanced Studies in Medicine and this activity is to provide continuing medical education to primary care physicians and reinforce their existing dermatology and clinical pathology knowledge base.

Target Audience
This activity is designed for primary care physicians. No prerequisites required.

Learning Objectives
The Johns Hopkins University School of Medicine takes responsibility for the content, quality, and scientific integrity of this CME activity. By participating in this activity, physicians should be able to:
• Enhance their diagnostic acumen
• Reinforce their existing knowledge base of diseases pertaining to dermatology and clinical pathology
• Enhance their current understanding of the presented diseases

Accreditation Statement
The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

Credit Designation Statement
The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 0.25 category 1 credits toward the AMA Physician’s Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity.

The actual time to complete this educational activity: 0.25 hours (15 minutes).


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Instructions
By going online at www.JHASIM.com, clinicians can participate in the Case of the Month (following page) and earn 0.25 category 1 credits. To earn credit, at no charge, clinicians must read the diagnostic clues provided and examine the pictures closely to specifically identify the clinical disorder. By following the online instructions completely, you will be provided with the correct answer, and a certificate awarding 0.25 category 1 credits will be downloaded to your printer upon completion of the program evaluation. Step-by-step instructions for online access are on page 375.