

## **THYROID ACROPACHY**

### **An Unusual Feature of Graves' Disease and Related Disorders**

© Elaine Moore

Thyroid acropachy is characterized by soft tissue swelling and periosteal bone changes, which usually occur in the fingers, toes and lower extremities, causing clubbing.

#### **Changes in Thyroid Acropachy**

Thyroid acropachy is an extreme manifestation of autoimmune thyroid disease that causes soft tissue swelling and clubbing primarily in the fingers, toes, and lower extremities. Usually associated with pretibial myxedema, thyroid acropachy is usually only seen in patients with moderate to severe thyroid eye disease.

#### **Who is Affected?**

Women are affected about 4 times as often as men. Although not all cases are reported or diagnosed, reports in the scientific literature estimate that about one percent of all patients with thyroid eye disease are affected with thyroid acropachy and about 20 percent of patients with pretibial myxedema may develop acropachy. Thyroid acropachy has been known to occur up to 30 years after the initial diagnosis of Graves' disease, and it is more likely to be seen in patients treated with radioiodine ablation for hyperthyroidism and in smokers.

Most patients with acropachy have an initial diagnosis of Graves' disease although acropachy may also occur in patients with Hashimoto's thyroiditis and euthyroid Graves' disease. Rarely, acropachy may develop before the emergence of thyroid disease, thyroid eye disease, or pretibial myxedema emerge.

#### **Symptoms**

Acropachy is primarily seen in patients with severe forms of pretibial myxedema, a disorder that it may be confused with. However, in acropachy soft tissue swelling is the prominent feature compared to skin lesions in pretibial myxedema. The tissue swelling in acropachy may also cause a periosteal reaction (increased growth of new bone caused by increased collagen or increased production of the subperiosteal bone layer) of the distal phalangeal bones, and rarely articular manifestations of the distal joints. Joint pain is sometimes noted.

Clubbing or thickening of the upper extremity of the fingers or toes with thickening of the skin over the digits is frequently seen in acropachy. The nails in acropachy may also have characteristic changes, particularly clubbing or a spoon-shaped appearance. Other symptoms of acropachy include:

- \* Nonpitting edema
- \* Elephantiasis, occurring especially in the feet
- \* Pure plaque form lesions
- \* Pure nodular form
- \* Mixed nodular and plaque
- \* Chronic obstructive lung disease
- \* Painful extremities

In a study of patients with acropachy conducted at Mayo Clinic , most patients did not notice their symptoms. Rather, the symptoms were noted during the clinical examination in patients with Graves' ophthalmopathy and pretibial myxedema.

### **Treatment:**

Treatment for acropachy includes local corticosteroid therapy, surgical excision, intralesional injections of corticosteroids, and intravenous immunoglobulin therapy. Conditions that May be Confused with Acropachy

Clubbing, which is also known as hypertrophic osteoarthropathy, may occur in other conditions. Conditions causing clubbing include lung cancer, pulmonary fibrosis , aneurysm, Crohn's disease, Goldbloom's syndrome, Pierre Marie-Bambergerter disease, cyanotic heart disease, osteosarcoma, and liver diseases.

However, the clubbing and periostitis seen in thyroid acropachy is distinguished by the uniform presence of thyroid eye disease and pretibial myxedema, which are seen in nearly all cases. Imaging test results are also different in patients with acropachy compared to patients with other conditions causing clubbing. In patients with thyroid acropachy, there is less involvement of the long bones although rarely long-bone involvement can occur. The periosteal reaction in acropachy is usually asymmetrical, meaning that both sides of the body are not evenly affected.

Changes on radiographs, particularly fusiform soft swelling of the digits and periosteal bone information usually involving the metacarpals, the proximal and middle phalanges of the fingers, and the metasarsal and proximal phalanges of the toes, are seen in 50 percent of the patients with acropachy who have radiographic studies.

### **Resources:**

Elaine Moore, Graves' Disease, A Practical Guide, Jefferson, NC: McFarland and Company Publishers, 2001.

Vahab Fatourechi, Debra Ahmed, and Kara Schwartz, Thyroid Acropachy: Report of 40 Patients Treated at a Single Institution in a 26-Year Period, The Journal of Clinical Endocrinology & Metabolism; 2002; 87 (12): 5435-5441.

The copyright of the article Thyroid Acropachy in Autoimmune Disease is owned by Elaine Moore. Permission to republish Thyroid Acropachy in print or online must be granted by the author in writing.