Anterior Chest Wall Mass in a 46-Year-Old Woman*

George S. Stoica, MD; Harry N. Steinberg, MD; and Leonard J. Rossoff, MD

A 46-year-old Guyanese-born woman was referred for a chest radiographic abnormality and a 3-week history of dry cough. She denied having shortness of breath, chest pain, fever, chills, or hemoptysis. There was no history of paroxysmal nocturnal dyspnea, orthopnea, or reflux, and her exercise tolerance was normal. She was a lifelong nonsmoker with a 15-year passive exposure to cigarette smoke. She worked as a dietary aid in a nursing home, had a positive purified protein derivative reported 12 years previously, and had undergone bacille Calmette-Guérin vaccination as a child. Type 2 diabetes mellitus diagnosed 9 years previously was controlled by oral hypoglycemic medications. She reported an asymptomatic chest lump, first detected approximately 4 years prior, that had not apparently changed in size. There was no history of chest or other trauma. Her surgical history included a hysterectomy at age 36 years for endometriosis, a left breast lumpectomy for a benign lesion, and bilateral cataract surgery.

On physical examination, she was afebrile with a BP of 160/98 mm Hg, heart rate of 76 beats/min, respiratory rate of 18 breaths/min, and normal temperature. Examination of the head, eyes, ears, nose, throat, and neck was normal. Palpation revealed a hard mass approximately 3.5 to 4 cm over the right sternoclavicular junction. The mass was immobile and not adherent to overlying skin. There was no history of chest or other trauma. Her surgical history included a hysterectomy at age 36 years for endometriosis, a left breast lumpectomy for a benign lesion, and bilateral cataract surgery.

What is the diagnosis?

*From the Division of Pulmonary and Critical Care Medicine, Long Island Jewish Medical Center, The Long Island Campus of the Albert Einstein College of Medicine, New Hyde Park, NY. Manuscript received January 3, 2001; revision accepted February 12, 2001.

Correspondence to: Leonard J. Rossoff, MD, Long Island Jewish Medical Center, The Long Island Campus of the Albert Einstein College of Medicine, Room C-20, 270-05 76th Ave, New Hyde Park, NY 11042; e-mail: lrossoff@lij.edu
Figure 1. Posteroanterior chest radiograph.

Figure 2. CT scan of the chest.
Diagnosis: Clavicular hyperostosis

The differential diagnosis includes chronic osteomyelitis, Paget disease, osteochondroma, fibrous dysplasia, and sclerotic metastases. The asymptomatic presentation, unremarkable laboratory evaluation, and otherwise unremarkable CT scan favored a benign etiology.

A fluoroscopically guided needle aspiration and biopsy detected evidence of hyperostotic spongiosclerosis, osteitis, rare mature lymphocytes, but no malignant cells. Culture findings were negative.

Discussion

Sternocostoclavicular hyperostosis was first described in 1974.1 It is a chronic osteitis characterized by hyperossification of the medial ends of the clavicles that could involve the upper anterior sternum and the first ribs, with periostitis and new bone formation of periarticular structures.2 Sternocostoclavicular hyperostosis is more common in women (1.3/1), with an average age of 47 years at detection.2 Local inflammation, pain, swelling, local heat, and tenderness over the mass area have been reported in approximately 70% of patients and can be exacerbated by increased cold or humidity.3 Palmar and plantar pustulosis, a recurrent condition, occurs in >50% of cases. Subclavian vein thrombosis due to narrowing of the thoracic outlet by hyperostotic bone has also been reported.3–5

Hyperostosis is thought to be a result of osteomedulloperiosteal remodeling.6 Bone marrow histology may show chronic inflammatory changes, with a predominance of plasma cells. Other disorders characterized by osteosclerosis and plasma cell infiltration of the bone marrow are plasma cell granuloma, sclerotic myeloma, POEMS (plasma cell dyscrasia with polyneuropathy, organomegaly, endocrinopathy, M protein in the serum, and skin changes), and chronic symmetrical plasma cell osteomyelitis of childhood.

The original diagnostic criteria included pain and swelling of the upper anterior chest, radiographic evidence of abnormal ossification between the clavicle and first ribs, and the absence of infection or neoplasm. It may be confused with chronic osteomyelitis. Hyperostosis occurs in the clavicle or costoclavicular ligament ossification in 45%, with rib/sternal involvement in about 50%, and sternal hyperostosis in 40%.2

The disease is benign and has a good prognosis. Treatment is usually symptomatic and involves non-steroidal anti-inflammatory agents, corticosteroids, and local low-dose irradiation.4 Partial or wide resection of the ossified mass and the medial end of the clavicle and/or first rib is reserved for patients with unremitting pain or symptoms of thoracic outlet obstruction who do not respond to conservative therapy.7

References