Lytic Bone Lesion: Presenting Finding of Sarcoidosis

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Sarcoidosis is a benign systemic disease that involves several organ systems. We present a case of sarcoidosis presenting with lytic bone lesions and pulmonary involvement.

PATIENT DESCRIPTION

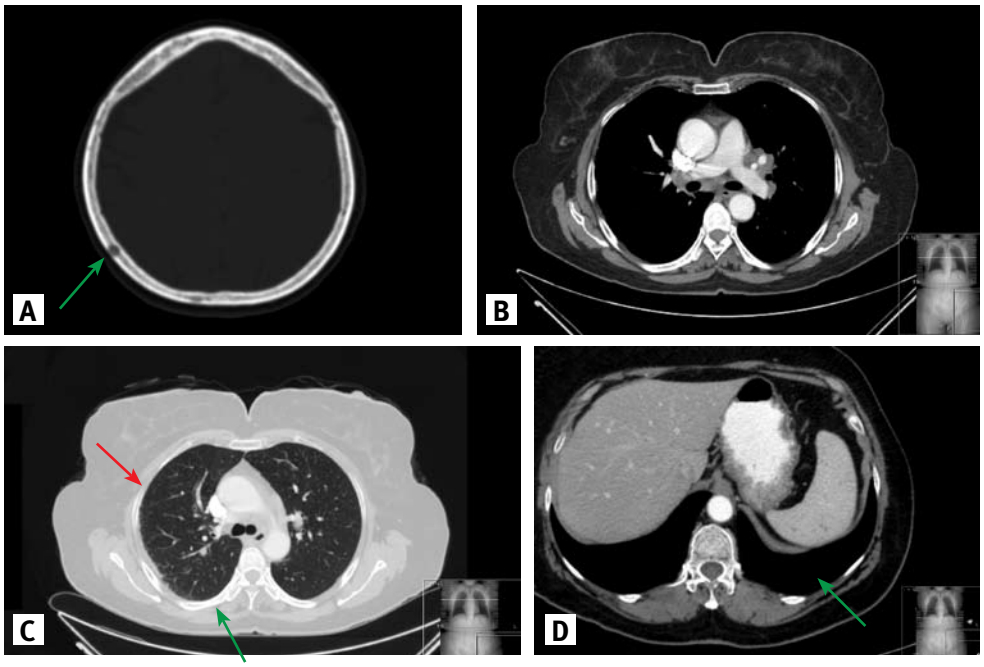
A 53 year old woman was admitted with a 2 month history of right-sided headache. Elevated blood pressure up to 180/98 was observed on several occasions and essential hypertension was diagnosed. Therapy with valsartan was initiated. Head computed tomography revealed skull lytic lesions [Figure A]. No weight loss or anorexia was reported. Her past medical history was remarkable for osteoporosis, which was treated with calcium and vitamin D. She was admitted for investigation.

Physical examination was normal. Her blood pressure was 106/70 mmHg, heart rate 80 beats per minute and temperature 36.7°C. There was no tenderness while palpating the skull. Blood tests were normal, including complete blood count, wide chemistry, protein electrophoresis, and erythrocyte sedimentation rate. Urine was negative for Bence-Jones proteins.

Skeletal X-rays of legs, arms, forearms, hands, spine and pelvis were normal. Bone marrow biopsy showed normal hematopoiesis. Bone scan showed slightly increased uptake in the right parietal posterior aspect of the skull. Abdominal and thoracic CT showed mediastinal and hilar lymphadenopathy, with 1.5 cm lymph nodes [Figure B], small bilateral lung nodules [Figure C] and small hypodense multiple nodules in the spleen [Figure D]. Blood angiotensin-converting enzyme level was normal (45 U/L). Spirometry showed air flow rates in the lower normal limit (forced expiratory volume in the first second 80%), improving with bronchodilators.

Fiberoptic bronchoscopy showed a normal trachea-bronchial tree. Biopsy was obtained from the right upper and lower lobes, and histopathological examination revealed non-necrotizing granuloma with multi-nuclear giant cells and no fungi or acid-fast bacilli, findings compatible with sarcoidosis. Electrocardiogram was normal, and ophthalmologic examination – both slit lamp and ophthalmoscopy – showed no evidence of ocular involvement. Sarcoidosis was confirmed and the patient is being feeling well. No treatment was indicated.

[A] Axial CT image shows small lytic skull lesion in the parietal lobe with thinning of the tabula externa (green arrow)
[B] Axial CT image after IV contrast injection shows bilateral hilar lymphadenopathy
[C] Axial CT image (lung window) shows one of many small pulmonary nodules along the bronchovascular bundle (red arrow), with sub-pleural changes (green arrow), findings compatible with sarcoidosis
[D] Axial CT image shows multiple tiny hypodense lesions in the spleen in the same patient (green arrow)



COMMENT

Sarcoidosis is a systemic granulomatous disease of unknown etiology, affecting mainly the lungs, lymph nodes, eyes and skin. Skeletal involvement is reported to occur in 1–14% of patients [1,2]. The

typical involvement is cystoid osteitis, an asymptomatic lesion localized to the small bones of the hands and feet [1,3]. Other rare lesions that have been described include lytic bone lesions, permeative lesions showing progressive "tunneling" with remodeling of trabecular and cortical architecture, and destructive lesions with rapid progression resulting in pathological bone fractures [3].

A Medline search for "sarcoidosis lytic bone lesion" revealed only nine articles reporting only 34 patients with bone involvement in sarcoidosis. Of these patients, lytic lesions were described in 29 patients (85%) [3-5]. Our patient is the 30th to be reported with lytic bone sarcoid lesions, and only the second with skull involvement. Other reports described a rare case of multiple osteoblastic bone lesions caused by sarcoidosis in a 36 year old black male, and a patient with a solitary lesion in the left hemisphere with overlying bony infiltration and erosion noted on CT. There were two cases with lytic lesions of the sternum; these were reported by Yona et al. [4] and Oven et al [5]. All the described patients had been diagnosed after a bone biopsy was obtained, showing the typical non-caseating granulomas. Our patient is the first to be diagnosed without a biopsy, and continues to be symptom free after 18 months follow-up.

Since bone lesions may remain asymptomatic for years and may be discovered incidentally, the exact nature, distribution and progression of lesions remain unknown. Osseous sarcoidosis responds poorly to corticosteroids as well as to other treatments used to treat the illness. Symptomatic relief may be achieved by colchicine and non-steroidal anti-inflammatory drugs. Chloroquine and hydroxychloroquine were found to be effective [1].

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