

Case report 593

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Radiological studies

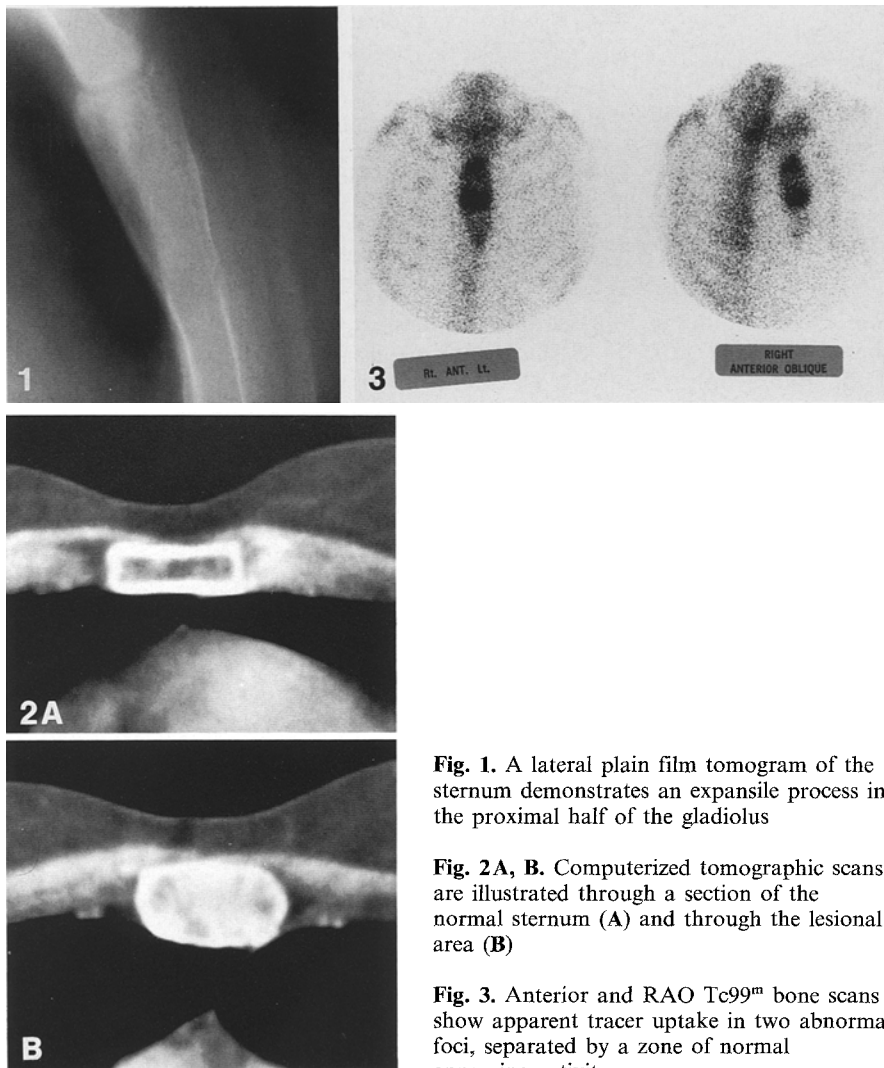


Fig. 1. A lateral plain film tomogram of the sternum demonstrates an expansile process in the proximal half of the gladiolus

Fig. 2A, B. Computerized tomographic scans are illustrated through a section of the normal sternum (A) and through the lesional area (B)

Fig. 3. Anterior and RAO Tc99^m bone scans show apparent tracer uptake in two abnormal foci, separated by a zone of normal appearing activity

Clinical information

This 38-year-old woman complained of excruciating pain in the midanterior area of the chest, following a friendly scuffle with her husband. She gave a history of similar intermittent pain for 15 years, the most recent episode being 2 years previously and following severe nausea and retching. Physical examination revealed only slight prominence and tenderness of the superior aspect of the sternal body.

Lateral tomograms of the sternum were obtained (Fig. 1). Additional studies included both computerized tomography (Fig. 2A and B) and bone scanning (Fig. 3).

A surgical excision of the sternal lesion was performed.

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Diagnosis: Hemangioma of sternum

The radiological appearance of the lesion is non-specific and since most tumors of the sternum are malignant [4, 7], biopsy and/or removal of the lesion are mandatory.

Discussion

Primary sternal tumors arise slightly more frequently from the manubrium than from the body. The xyphoid is rarely involved.

Since benign sternal tumors are extremely rare, with chondromas reportedly most common, all sternal tumors must be considered malignant until proved otherwise [4, 7]. While metastatic disease remains the most common sternal lesion with breast, lung, kidney, and thyroid the most frequent sources, primary malignant tumors of the sternum do occur. In descending order of their predominance, these lesions include chondrosarcoma, myeloma/plasmacytoma, primary lymphoma of bone and osteosarcoma [4, 6, 7]. An extensive search of the literature has failed to uncover even one previous report of this exceptionally rare sternal hemangioma. Dahlin found only one benign sternal lesion in 2865 primary bone neoplasms [2]. In a recent series including 53 primary chest wall tumors, there were only four sternal tumors, two of which were benign chondromas. No hemangiomas were reported [5]. Jaffe states that when vertebral and calvarial hemangiomas

Histological sections

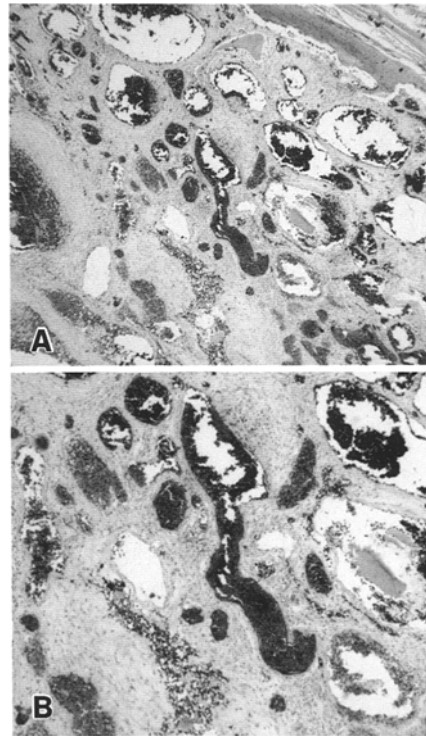


Fig. 4A, B. A low power photomicrograph of the resected specimen shows the expanded medullary cavity containing blood-filled endothelially lined spaces supported by fibrous connective tissue (A). Magnified view of the same section is shown in B

are excluded, solitary osseous hemangiomas are rare [3]. Bucy and Capp found only 15 reported cases of hemangiomatous lesions outside the vertebral column and cranium, none being sternal hemangiomas [1]. Other benign sternal tumors that have been reported include chondro-

ma, aneurysmal bone cyst, giant cell tumor, osteoma, dermoid cyst, neurofibroma, and chondromyxoid fibroma [4].

In *summary*, a 38-year-old woman presented with an expansile lesion of the sternum. Plain film tomograms and computed tomography showed an expansile lesion of the sternum. Bone scanning revealed increased uptake in the sternum. The neoplasm was surgically excised and proved to be a hemangioma (Fig. 4a and 4b). The rarity of this neoplasm in the sternum was stressed. An extensive search of the literature failed to reveal a single previous report of a sternal hemangioma. A differential list of other primary benign and malignant sternal tumors was presented.

References

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