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Axillary calcifying fibrous tumor (CFT) in an 8 year old girl

Kevin Xi Cao[a], Andrew E. Rosenberg[b], Joseph Hakim[c], Peter T. Masiakos[a,*]

[a]Department of Pediatric Surgery, Massachusetts General Hospital, Boston, MA 02114, USA
[b]Department of Pathology, Massachusetts General Hospital, Boston, MA 02114, USA
[c]Department of Radiology, Massachusetts General Hospital, Boston, MA 02114, USA

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Abstract Calcifying fibrous tumors (CFTs) are benign soft tissue masses that can occur at many sites. This case report outlines the diagnostic workup for this rare, fast-growing, solitary mass in an otherwise healthy 8 year old patient. We also describe the radiographic and pathological characteristics unique to this lesion.

Calcifying fibrous tumors (CFTs) are uncommon lesions characterized by cytologically benign fibroblasts that produce abundant collagen with scattered lymphocytes, plasma cells, and psammomatous or dystrophic-type calcifications [1,2]. CFTs were first reported as 'childhood fibrous tumors with psammoma bodies' in two patients by Rosenthal and Abdul-Karim in 1988. Since then, nearly 100 cases have been documented in the surgical literature. This has helped characterize this lesion as one that typically occurs in adults. CFTs occur in many locations including the neck, chest wall, pleura, mediastinum, stomach wall, mesentery, GI tract, groin, scrotum, and extremities [3–13]. They are generally a few centimeters in diameter, although some have been described to be up to 15 cm [14]. Presented here is the first pediatric axillary CFT (the only other axillary CFT was discovered in a 33 year old female). We describe the pathology and the clinical management of CFT in this case.

1. Case report

An 8-year-old girl presented to her pediatrician with a 1 cm, solitary left axillary mass. Several weeks prior to this visit the patient had experienced two upper respiratory tract infections, one attributed to influenza H1N1. The mass was initially thought to be reactive lymphadenopathy and, with low suspicion for malignancy, the patient was re-examined in monthly intervals by her pediatrician. Although initially remaining stable in size, between the patient's second and third visit, the mass grew to 5 cm and the patient was referred to us for further management. Physical examination revealed an immobile, non-tender, firm axillary mass. Ultrasound demonstrated a solitary 5 cm × 5 cm deep, non-calcified soft tissue mass resembling a lymph node that abutted the axillary vessels. Because of proximity to the vessels and due to the physical characteristics of the mass, a CT scan was obtained to better define the mass and to delineate the surrounding anatomy. Three dimensional reconstruction of the planar images showed that the mass was well circumscribed, non-calcified, and compressed the axillary artery, and displaced the axillary vein medially

* Corresponding author. Division of Pediatric Surgery, Massachusetts General Hospital, Boston, MA 02114, USA.
E-mail address: pmasiakos@partners.org (P.T. Masiakos).

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(Fig. 1). The surrounding soft tissue and bony structures were unremarkable. Laboratory studies including complete blood count, electrolytes, alkaline phosphatase, ferritin, and LDH were normal. Complete excision was achieved through an axillary incision.

2. Pathology

The excised mass was tan–white and well encapsulated. The transected mass had a gritty consistency and measured 4.3×3.9×2.6 cm (Fig. 2). The tumor was hypocellular and was composed of abundant collagen, cytologically bland spindle and stellate cells that contained small amounts of eosinophilic cytoplasm and nuclei with fine chromatin (Fig. 3). The tumor also contained scattered lymphocytes and plasma cells as well as psammomatous and amorphous calcifications. There were no necrosis and no appreciable mitotic activity.

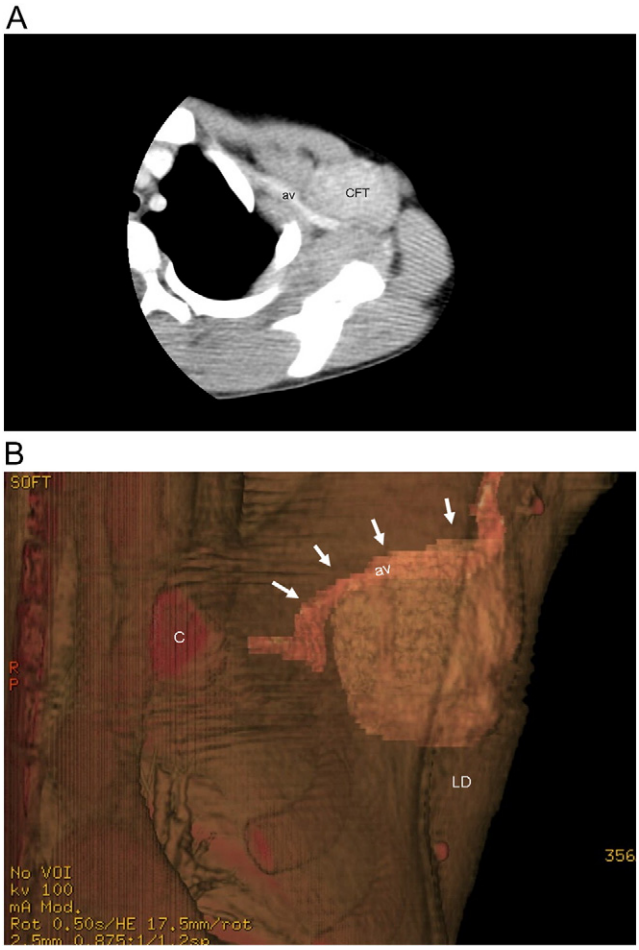

Fig. 1 Coronal (A) and 3D Reconstruction from Computer-Assisted Tomography images (B) of the left axilla. The images demonstrate that the tumor (CFT) displaces the axillary vessels (av) medially and inferiorly (arrows).

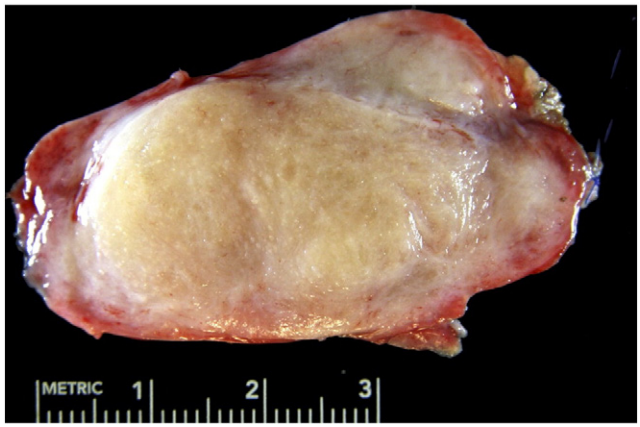

Fig. 2 Bisected gross specimen. Internal tissue shows homogeneous fibro-fatty tissue with speckles of calcification throughout in this well encapsulated mass.

3. Discussion

CFTs were first described in two children [1]. Later, Fetsch et al. (in a report which includes the only other axillary CFT, found in a 33 year-old female) renamed the lesion 'calcifying fibrous pseudotumors', a descriptive name that reflected the composition and biology of the tumor, the broader age-range of patients, as well as their belief that the lesion was fibroinflammatory in nature [2]. Most recently, the World Health Organization re-classified the mass as 'Calcifying fibrous tumor', emphasizing that in very few cases, excision was complicated by local recurrence [15]. These occasional recurrences casted doubt on the predominantly held belief that CFTs are non-neoplastic. CFTs however do not demonstrate clonality or cytogenetic abnormalities even in recurrent lesions and are therefore

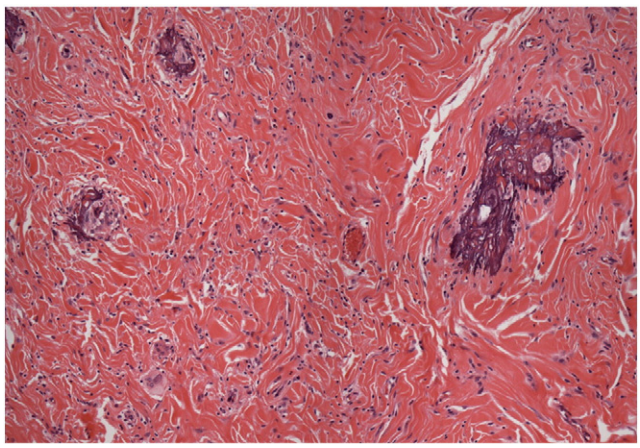

Fig. 3 Magnification demonstrates collagenous nature of mass with areas of psammomatous and dystrophic calcification. Islands of irregular ossification can be seen also as well as scattered small lymphocytes.