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Case Report

Pulmonary inflammatory myofibroblastic tumor: report of 2 cases with radiologic-pathologic correlation

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ABSTRACT

Inflammatory myofibroblastic tumor is a rare benign tumor that affects most commonly children and young adults. In the lung, it comprises less than 1% of all neoplasms. The authors describe the clinical, radiological, and pathologic features of 2 cases of incidentally discovered pulmonary inflammatory myofibroblastic tumors.

Introduction

Inflammatory myofibroblastic tumor (IMT) is a rare, indolent, and benign tumor that typically affects children and young adults with no gender predilection [1,2]. Its clinical and radiologic manifestations are variable and most commonly nonspecific, being frequently found incidentally. Diagnosis is difficult based on imaging alone, and surgical biopsy is often required [1]. We describe the clinical, radiologic, and pathologic features of 2 incidentally discovered pulmonary IMTs.

Case 1

A 12-year-old boy presented at another institution with a weeklong history of cough. A chest radiograph was initially performed, and a solitary pulmonary nodule in the right

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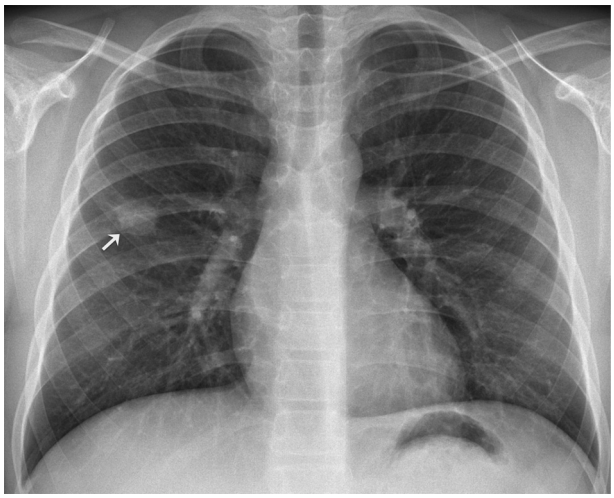

Fig. 1 – Posteroanterior chest radiograph depicts a solitary pulmonary nodule in the middle third of the right hemithorax (arrow). Slight spiculation of its contour can be appreciated.

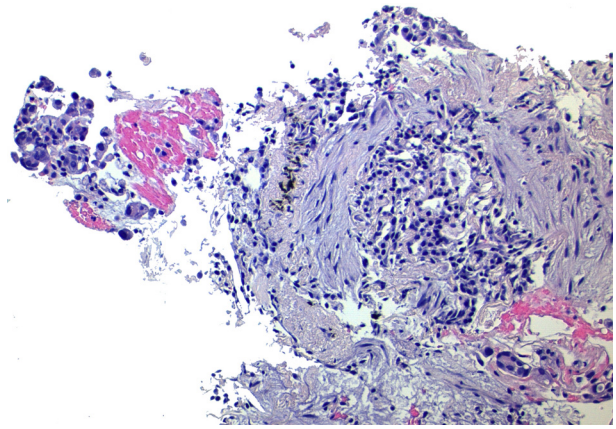

Fig. 3 – Histological specimen from the core-biopsy (hematoxylin-eosin [H-E], ×200 magnification). Fibromyxoid tissue and duct-like spaces lined by cuboidal epithelium without atypia. This was insufficient to provide a definitive diagnosis.

hemithorax was reported. Physical examination was unremarkable, and there was no relevant past medical or family history. Laboratory tests were within normal limits, except for a slightly elevated C-reactive protein of 15.4 mg/L (normal values <3.0 mg/L). Tuberculin skin test (Mantoux) was negative. He was treated with a course of antibiotics (amoxicillin/clavulanate) with symptomatic improvement, after which he was referred to our institution for pulmonary nodule workup.

A chest radiograph was repeated at our institution, 1 month after the patient presented to medical care (Fig. 1). A 3-cm solitary pulmonary nodule was present in the right middle lung field. Some spiculation was noted. There were no other nodules, consolidation, or evidence of pleural effusion, and no hilar lymphadenopathy was present.

The patient was referred for computed tomography (CT)–guided transthoracic lung biopsy (Fig. 2). CT examination confirmed the presence of a spiculated mass in the right upper lobe. No other pulmonary abnormalities were present. Transthoracic core needle (20G) biopsy was performed without complications.

Pathologic analysis of the biopsy specimen was inconclusive, but the diagnosis of a hamartoma was suggested (Fig. 3).

At multidisciplinary meeting, it was decided to perform a surgical excisional lung biopsy. The surgical specimen measured 60 × 25 × 17 mm, weighted 8 g, and was occupied by a firm, circumscribed mass with a fleshy white cut surface measuring 17 mm (Fig. 4). Three-millimeter thick sections were harvested from the lesion and embedded into paraffin blocks after routine tissue procedures.

The material was examined under the light microscopy. Sections showed a fascicular pattern tumor. Tumor elements consisted of cells with oval- and spindle-shaped nucleus with indistinct borders, thin chromatin distribution, and inconspicuous nucleoli. There was no cytological atypia or mitosis. These cells were accompanied by an inflammatory infiltrate composed mainly of plasma cells and lymphocytes. Immunohistochemical studies showed diffuse expression of smooth muscle actin in spindle cells, and there was no staining with antibodies against anaplastic lymphoma kinase (ALK) and CD34 (Fig. 5). The final pathologic diagnosis was IMT.

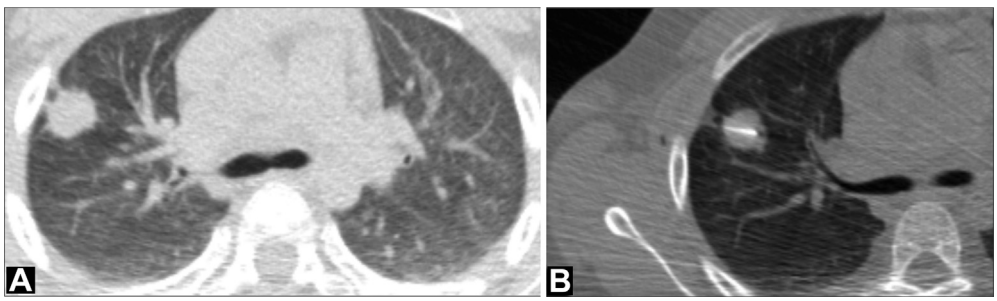

Fig. 2 – Axial CT image, lung window setting (A) shows a peripheral spiculated 3 cm mass in the anterior segment of the right upper lobe. Some pleural tails can be noted extending to the visceral pleura. Core needle biopsy of the lung nodule was performed under CT guidance (B). CT, computed tomography.