

All that grows is not a tumour

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Section: Chest imaging

Area of Interest: Lung Mediastinum

Procedure: Computer Applications-Detection, diagnosis

Procedure: Diagnostic procedure

Imaging Technique: CT

Imaging Technique: Conventional radiography

Special Focus: Neoplasia Pathology Infection Case

Type: Clinical Cases

Authors: S. Ait Batahar, L. Amro, A. Alaoui-Yazidi

Patient: 33 years, female

Clinical History:

A 33-year-old female patient with no past medical history presented with chest pain, cough and dyspnoea. The chest radiograph showed a right dense upper lobe opacity and further investigation with CT of the chest was warranted.

Imaging Findings:

Chest radiograph showed an apical opacity of the right hemithorax (figure 1). Chest CT showed a "tumour-like" lesion of the right upper lobe. The lesion was dense with spiculated borders and nodular satellite lesions demonstrating intimate contact with the mediastinum and the vertebra (figure 2, 3). There were enlarged lymph nodes in the mediastinum and the hilum (figure 4). CT scan raised suspicion of a pulmonary tumour. Investigations for tuberculosis remained negative: sputum acid-fast bacilli test, tuberculin skin test. Bronchoscopy found inflammation of bronchial mucosa and transbronchial biopsy was unremarkable. A transthoracic biopsy revealed a nonspecific inflammatory reaction. Surgery was indicated for both diagnostic and therapeutic purpose. The procedure consisted on an upper right lobectomy by a posterior thoracotomy. Pathologic analysis of the surgical specimen revealed presence of granulomas with epithelioid and giant cells and caseous necrosis. Six month follow-up CT post antituberculosis treatment showed no residual tumour (figure 5).

Discussion:

Pulmonary tuberculosis is the most common form of tuberculosis, the diagnosis is usually straightforward but a pseudotumoural presentation may need to be differentiated from lung cancer [1]. This case shows that a delay in the diagnosis might delay the treatment. It also stresses the rarity of this form of tuberculosis among immunocompetent patients, while it is observed more in immunocompromised patients [2] and its incidence is estimated at 4.3% [3]. The clinical presentation does not have any specificity: chest pain, cough, haemoptysis, dyspnoea and weight loss are all symptoms found in both tuberculosis and lung cancer. The clinicoradiologic and laboratory examinations that are supposed to establish the diagnosis tend to lead to lung cancer especially when the patient is male and or a smoker. The sputum acid-fast bacilli test is negative in the direct examination as well as the culture because the pseudotumoural form of tuberculosis is solid and poorly oxygenated [3, 4].

The chest CT scan usually shows a tumour-like mass that is suggestive of malignancy. Bronchial biopsy under bronchoscopy and CT-guided transthoracic needle biopsy can give a positive diagnosis in some cases [1], However the transbronchial biopsy did not find any signs of tuberculosis in this case. The PET-scan could help but it is not

available in our hospital.

Chaouch and al found 12 cases of tuberculosis pseudotumour among 314 cases of pulmonary tuberculosis over a period of 11 years [1], radiological investigation found consolidation in 5 cases and mass lesion in five cases, bronchoscopy visualized a tumour in 4 cases and a stenosing infiltration in one case. The positive diagnosis was made by: bronchial biopsy (4 cases), transbronchial biopsy (2 cases) and surgical specimen (4 cases). Bouayad and al reported 13 cases of tuberculosis pseudotumour [5]; among them 8 were smokers, the chest CT scan showed a tumour with mediastinal nodes with invasion of soft tissue in one case, the diagnosis was confirmed by: bronchial biopsy in 3 cases, ultra-sound guided biopsy in 6 cases and surgery in 3 cases. Bahlaoui and al reported two cases of pseudotumour tuberculosis, both male and smokers, the CT scan showed a tumour of the Culmen, the diagnosis was confirmed by the bronchial biopsy and the transparietal biopsy [6].

Pseudotumoural tuberculosis is a rare form of pulmonary tuberculosis. The clinicoradiologic presentation is similar to lung cancer. Samples for bacteriological study are usually negative which reinforces the neoplastic aetiology.

Differential Diagnosis List: Pseudo-tumoural pulmonary tuberculosis, Bronchogenic cancer, Other types of lung neoplasms

Final Diagnosis: Pseudo-tumoural pulmonary tuberculosis

References:

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Figure 1

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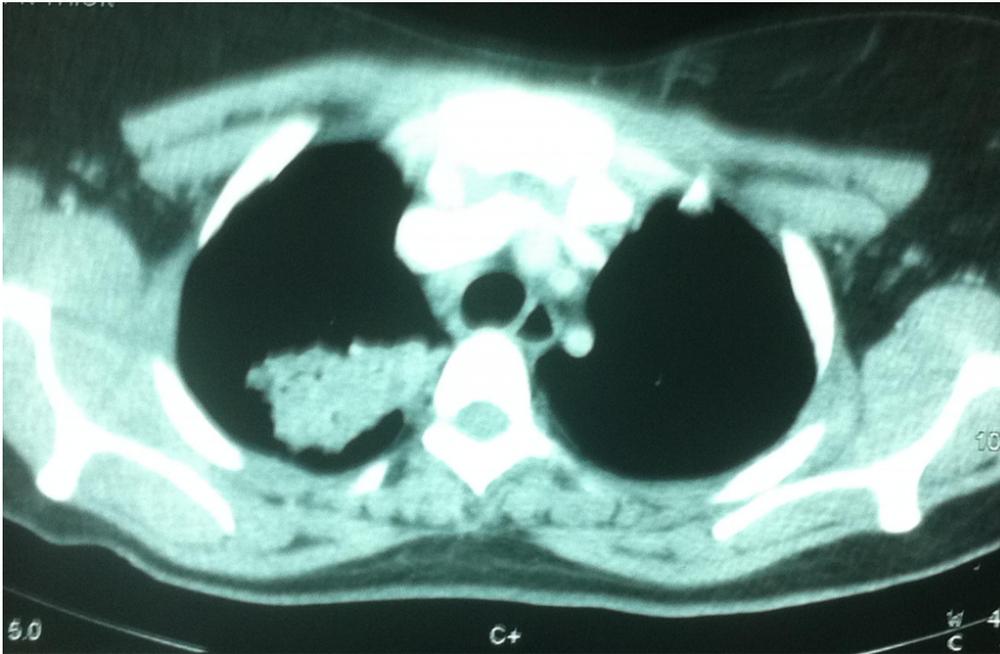


Description: CT of the chest shows a right upper lobe spiculated mass with nodular satellite lesions.

Origin: Ibn Nafis hospital, pulmonary department, PCIM laboratory, FMPM, Marrakech, Morocco

Figure 2

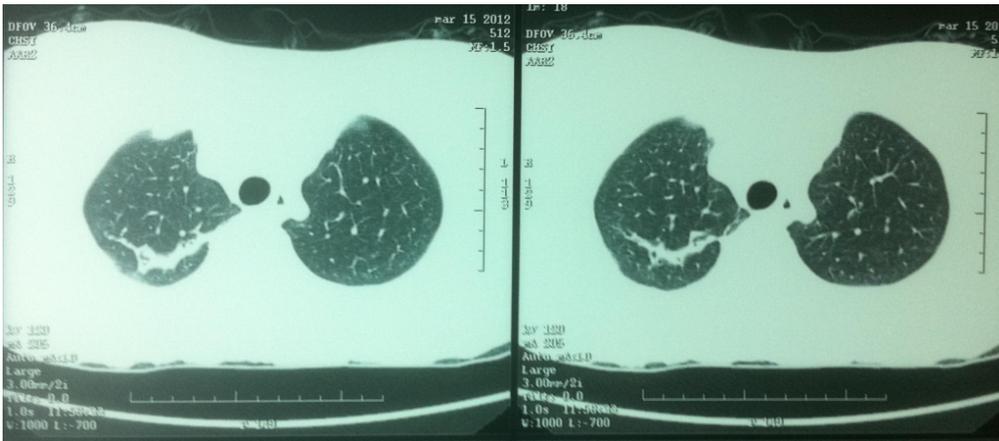
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Description: CT scan on mediastinal windows shows a right upper lobe mass in broad contact with the mediastinum and the vertebral body. **Origin:** Pulmonary department, Ibn Nafis hospital, PCIM laboratory, FMFM, Marrakech, Morocco

Figure 3

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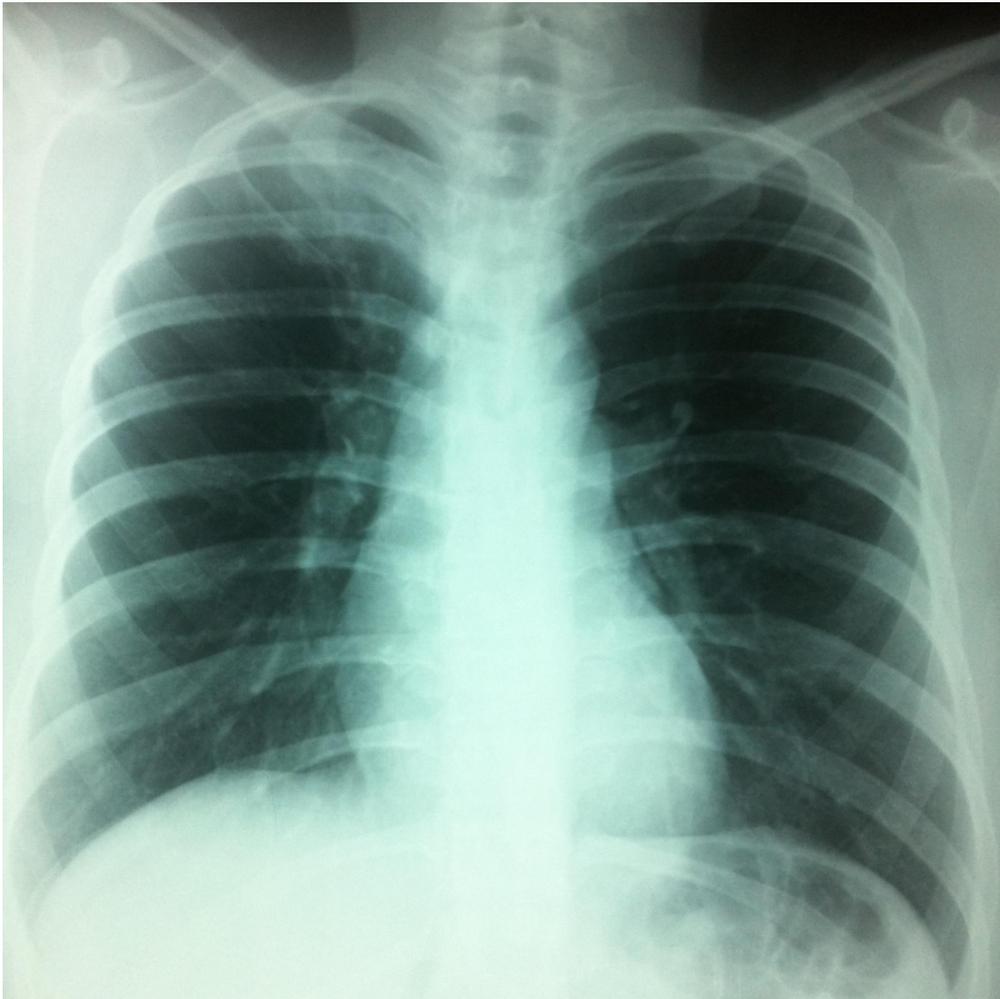


Description: Six-month postoperative CT scan after antituberculous treatment shows no tumour.

Origin: pulmonary department, Ibn nafis hospital, PCIM Laboratory, FMPM, Marrakech, Morocco

Figure 4

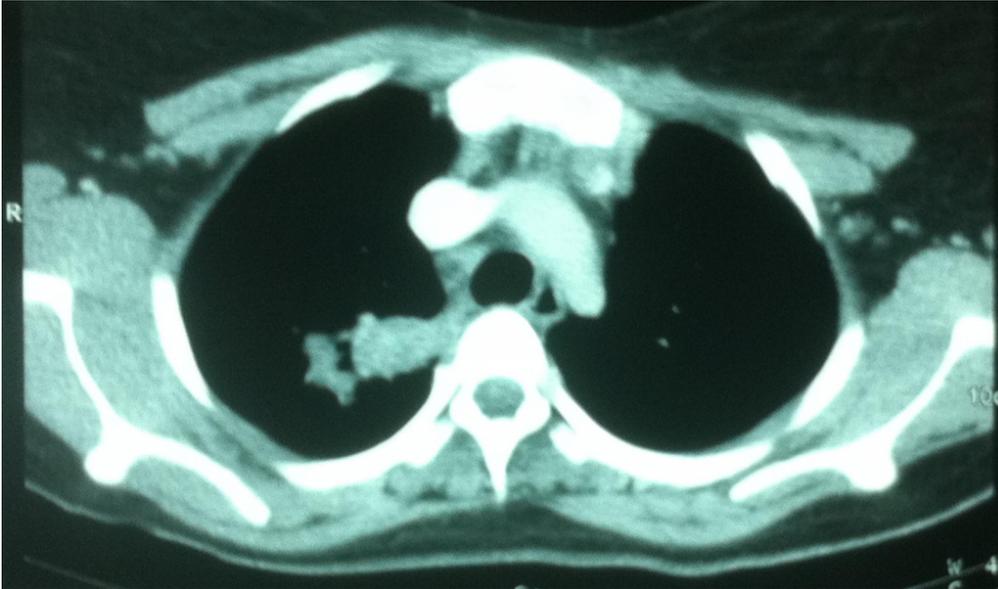
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Description: Chest radiograph shows an apical opacity of the left hemithorax **Origin:** DEpartement of respiratory diseases, Ibn Nafis hospital, PCIM laboratory, Marrakech, Morocco

Figure 5

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Description: CT scan showing enlarged lymph nodes of the anterior mediastinum **Origin:** pulmonary department, Ibn Nafis hospital, PCIM laboratory, Marrakech, Morocco