

Rounded Atelectasis - A Case Report

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Introduction

Rounded atelectasis (RA) is a form of non-segmental peripheral pulmonary collapse that may mimic a primary lung or pleural neoplasm. It is often associated with asbestos exposure [1,2]. RA is not so uncommon entity and we present here such a case.

Case Report

A 45 year old ex-serviceman reported to the hospital for surgical correction of his inguinal hernia. On routine investigation for his surgery, on chest X-ray, he was found to have a soft tissue density mass abutting the pleura in the anterior aspect of the right lower lobe (Fig 1 a,b). He underwent CT examination and it revealed anteriorly located pleural-based opacity with bronchovascular markings converging to it (Fig 2, a, b). He was diagnosed as a case of RA and was treated conservatively and follow up CT scan after 3 months suggested persistence of the lesion without increase in size.

Discussion

RA is a form of peripheral atelectasis that is variable in size and usually about 3-5 cm in diameter. It is most commonly located basally and dorsally and is composed of a swirl of atelectatic parenchyma adjacent to thickened pleura [3]. Other names for this condition are Blesovsky's syndrome, Helical atelectasis, Folded lung, Pleuroma, Atelectatic pseudotumour, Shrinking pleuritis and pulmonary pseudotumour. The lesion is probably the residue of a previous exudative pleural effusion, which may be caused by a variety of inflammatory processes including asbestos [1,4] with symphysis of the visceral and parietal pleura and resultant infolding and entrapment of a peripheral portion of the underlying lung. Although conventional radiography and tomography may demonstrate characteristic findings, especially a comet like tail feature adjacent to the medial aspect of the mass produced by pulmonary arteries and bronchi entering the focal atelectatic lung. CT can be helpful in depicting the full extent of the benign disease process and confirming the diagnosis [5].

Doyle and Lawlers have proposed seven criteria for the diagnosis of RA. (1) Rounded, peripheral lung mass never completely surrounded by lung. (2) A mass that

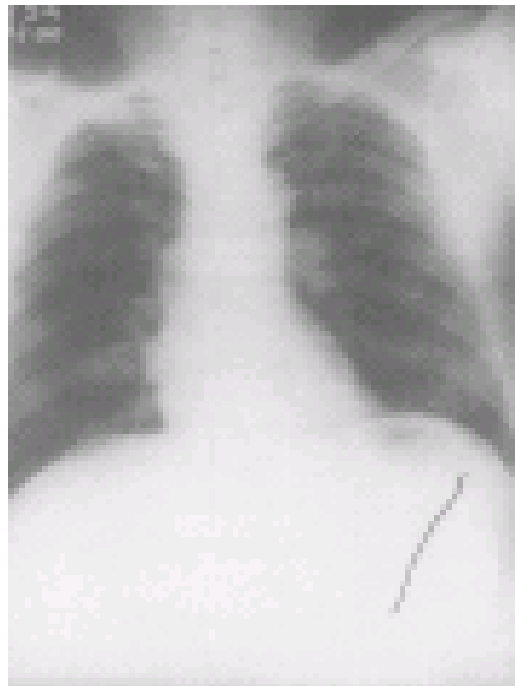


Fig. 1a & b : Chest radiograph PA and lateral views showing soft tissue density mass abutting the chest wall in the anterior aspect of the right lower lobe.

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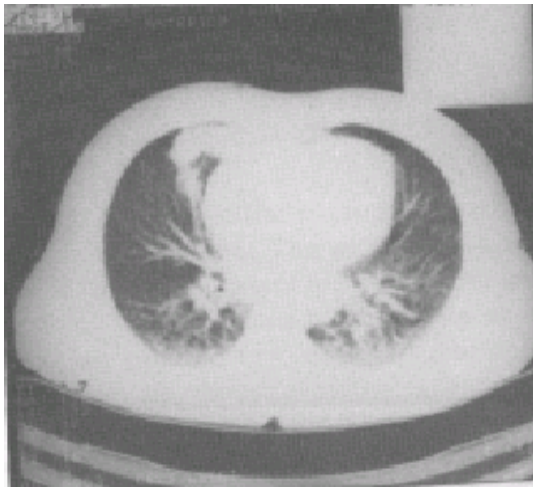
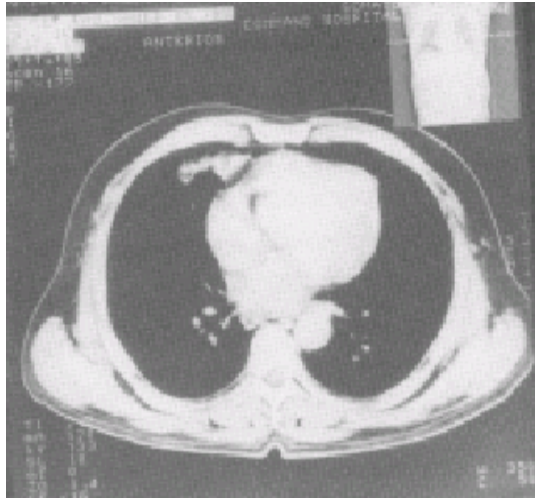


Fig. 2a & b : CT scans of thorax, both mediastinal and lung window revealing anteriorly located pleural-based opacity with bronchovascular markings converging to it.

is most dense at its periphery. (3) A mass that forms acute angle with pleurae (4) Adjacent pleural thickening. (5) Vessels and bronchi that curve towards the mass (6) A blurred centrally directed edge. (7) Presence of an air bronchogram. Other CT features may include notable contrast enhancement of the atelectatic lung, adjacent hyperinflated lung and presence of volume loss in the ipsilateral haemothorax including fissural or mediastinal displacement. [6] However, the diagnosis is usually based on the presence of the classical radiological triad of round mass abutting the pleura, converging bronchovascular markings and pleural thickening adjacent to the mass [7]. In our case, all these findings were present in the CT.

Sandomenico F et al reported the usefulness of Helical CT in depicting the comet tail vascular pattern of enhancement, which permitted identification of

angiogram sign in RA [8]. Evaluation of patients with RA using 2 - (18-F)-Fluoro-2-deoxy D-glucose, PET imaging suggests that RA is not metabolically active. Thus FDG-PET scans can play a role in differentiating round atelectasis from malignancy, when there are few or atypical features of RA on chest radiograph of CT [9].

RA usually remains stable on serial radiologic studies, although very slow growth or regression may occur. Nakagara Y, et al have reported a case of RA that developed 7 years after the start of the follow up. They claim that it was the longest interval between initiation of follow up and development of RA so far reported [10]. In the majority of cases, the CT findings are so distinctive that further evaluation usually is not necessary. However, if the CT findings are equivocal, percutaneous needle biopsy of the mass can be valuable for clarification, a specimen demonstrating fibrosis, only solidifies the diagnosis. Otherwise, radiologic follow up or surgical resection is required for indeterminate lesions [3].

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