

## A Case of Round Pneumonia in an Elderly Adult Mimicking Bronchogenic Carcinoma

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**Abstract:** Round pneumonia or spherical pneumonia is a type of pneumonia usually only seen in paediatric patients, uncommon in adults. We report a case of round pneumonia in an elderly female presenting as solitary non homogeneous coin lesion. With treatment, complete radiological clearance was achieved in five days.

**Keywords:** round pneumonia, Spherical pneumonia, Coin lesion

### INTRODUCTION

Round pneumonia describes any pneumonia presenting as coin lesion or nodule. It accounts for less than 1% of coin lesions of lung [1]. It is more common in children. It may present as sub-acute or acute illness. We report a case of round pneumonia presenting as acute illness with complete radiological resolution following treatment.

### CASE REPORT

A 60-year-old female patient presented to our outpatient department with high grade fever of 10 days duration. She complained of cough productive of scanty white sputum, dull aching chest pain on right side and breathlessness associated with wheeze of five days duration. She complained of acute onset of hoarseness of voice since five days. Patient had loss appetite. There was no significant past history. There was no smoking history.

Physical examination revealed a temperature of 101°F, respiratory rate of 40/min, blood pressure of 110/70 mm Hg, pulse of 110/min and a saturation of 93%. Respiratory system examination revealed bilateral biphasic polyphonic wheeze and fine crackles in right interscapular and infrascapular areas. Examination of vocal cords revealed congestion and oedema.

Chest X-ray revealed non homogenous circular coin like lesion in right mid zone not silhouetting right heart border. Patient was treated with broad spectrum antibiotics and bronchodilators for five days. Patient improved subjectively and a follow up x-ray revealed on day 5 revealed complete radiological resolution of the lesion.



Fig. 1: Chest X ray showing round non homogenous opacity with air bronchogram



Fig. 2: Chest x ray following treatment showing complete resolution

## DISCUSSION

In 1964, Greenfield and Gyepes described a pneumonia variant resembling bronchogenic carcinoma [2]. Later on it was recognized as round pneumonia [3]. It is a well-known in children, uncommon in adults; 1% of pneumonia being round lesions. Nearly less than 1% of coin lesions in an adult chest radiograph correspond to round pneumonia [1].

Usually, round pneumonia mimics pulmonary or mediastinal masses and thus a broad differential diagnosis should be considered [1]. Most of these present as slightly dense or ill-defined masses in the posterior subpleural region of the lower lobe and is suggested by a history of cough, fever, elevated WBC and CRP and a recent chest radiograph with normal findings [4].

Though pathogenesis of round pneumonia is unknown, it is often hypothesized that atypical dissemination of exudative fluid of early pneumonia through interalveolar communication (pores of Kohn and channels of Lambert) is responsible for the nonsegmental pattern and centrifugal distribution, distinguishing it from healthy lung tissue [5, 6]. Agents that cause round pneumonia include *Streptococcus pneumoniae*, *Klebsiella pneumoniae*, *Haemophilus influenzae*, *Mycobacterium tuberculosis*, *Chlamydia psittaci* and *Coxiella burnetii* (*Rickettsiae*) and virus such as coronavirus [6].

It should be noted that, unlike in our case, round pneumonia usually affects patients at a younger age.

Patient's symptoms point towards an infectious etiology and its radiological appearance mimics lung cancer. Radiological resolution can safely rule out malignancy. Even imaging techniques of a more advanced nature have failed to differentiate round pneumonia from lung cancer [6, 7].

## CONCLUSION

Round pneumonia is more common in children. It is a case of a case of round pneumonia in an elderly female presenting as solitary non homogeneous coin lesion. Patient was being evaluated for bronchogenic carcinoma and simultaneously treated with antibiotics for her exacerbation of obstructive airway disease. Incidentally lesion showed complete resolution in five days. Therefore the importance of recognizing round pneumonia lies in its radiological appearance that mimics bronchogenic carcinoma.

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