

CASE REPORT

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Endobronchial chondrosarcoma presenting as recurrent pneumonia: a rare pulmonary tumour

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Abstract

Background Chondrosarcoma is a group of bone tumours made up of cells responsible for cartilage production. It usually affects the axial skeleton, including the pelvis, scapula and base of the skull with frequent metastasis to the lungs. Primary pulmonary involvement with chondrosarcoma is rarely seen.

Case presentation In this case report, we will discuss a case of endobronchial chondrosarcoma presenting as recurrent pneumonia.

Conclusions Only a few cases of primary pulmonary chondrosarcoma are reported with endobronchial involvement, therefore being quite rare.

Keywords Endobronchial chondrosarcoma, Primary pulmonary chondrosarcoma, Soft tissue tumour of the lung

Background

Chondrosarcomas are classified under tumours of bone and soft tissue according to the World Health Organization (WHO) classification of soft tissue tumours 2020. They affect the axial skeleton like the pelvis, scapula and base of the skull [1]. Chondrosarcomas leading to pulmonary metastasis are frequent, but primary pulmonary involvement is less common in chondrosarcoma. As per our search in available literature, only a few cases of primary pulmonary chondrosarcoma are reported [2] with endobronchial involvement therefore being rare. Due to rare occurrences, very little is known about the clinical presentation, management and prognosis of primary pulmonary endobronchial chondrosarcoma. Here, we are presenting a case of primary pulmonary endobronchial chondrosarcoma presenting as recurrent pneumonia.

Case presentation

A 77-year-old smoker male presented to emergency with complaints of cough and breathlessness for 7 days. Four months back, he was hospitalized for similar complaints and was diagnosed with left upper lobe consolidation. His past history includes hypertension and diabetes for which he was on regular medication.

On presentation at the hospital, his blood pressure was 150/90 mmHg, heart rate was 110/min and respiratory rate was 35/min. He maintained saturation of 67% on room air which improved with oxygen administration. On examination, breath sounds of left hemithorax were diminished, and diffuse wheezes were heard bilaterally. The patient then underwent a chest x-ray which was suggestive of a heterogeneous lesion in the left upper zone.

Following completion of the initial assessment, the patient was started on IV antibiotics, steroids, nebulization and oxygen support with a preliminary diagnosis of left upper lobe consolidation. He started showing gradual improvement in general condition soon after treatment initiation, but dyspnoea persisted with mild exertion.

For further evaluation, a computerized tomography of the thorax was done which revealed a well-defined soft

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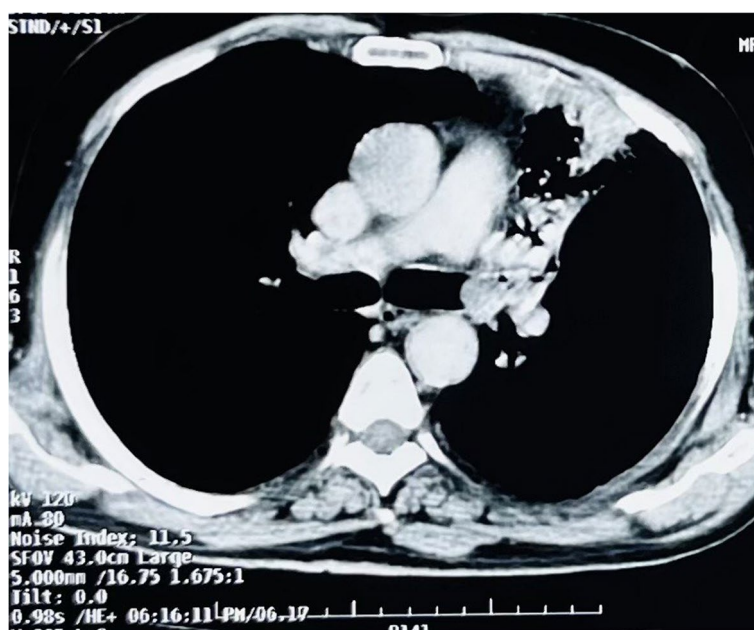


Fig. 1 Computer tomography scan of thorax showing well-defined soft tissue density in left main bronchus just prior to its bifurcation with left upper lobe collapse

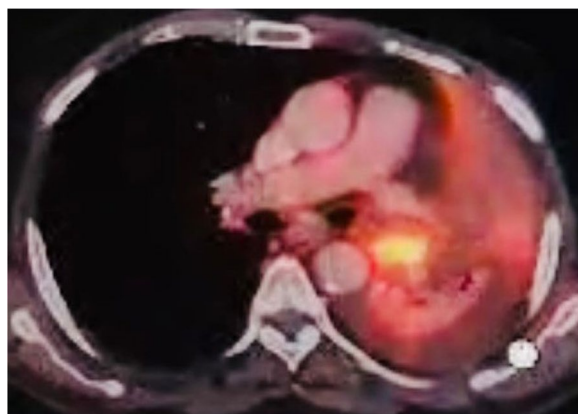


Fig. 2 Positron emission tomography scan showing metabolic active lesion in left main bronchus

tissue density in the left main bronchus just before its bifurcation along with left upper lobe collapse and diffuse panacinar emphysema (Fig. 1). Therefore, the patient was planned for bronchoscopy which revealed a large lobulated exophytic endobronchial lesion causing near-complete occlusion of its lumen; the biopsy was taken from the same and sent for histopathological examination (Fig. 2).

The histopathology report was suggestive of a malignant spindle-shaped tumour which was moderately cellular, seen to be intersecting in fascicles and had a



Fig. 3 Bronchoscopy showing exophytic lesion with near-complete occlusion of left main bronchus

herringbone pattern (Fig. 3). Further immunohistochemistry (IHC) examination was ordered. IHC examination of the biopsy sample was positive for CD-99, Ki67 (90%), S-100 (scattered positive) and vimentin (diffuse positive). These findings suggested extra skeleton chondrosarcoma.

A positron emission tomography (PET) scan was ordered after a discussion with medical oncology team, and it revealed a metabolically active lesion (SUV max – 12.1) in the left main bronchus and mild metabolically active nodules in the right lower lobe (Fig. 4). No metabolic activity was seen in other organs of the body.

After a multidisciplinary discussion, patient was advised endobronchial fulguration, brachytherapy, or rigid bronchoscopy followed by debulking and stent placement for palliative management. So, the patient was planned for rigid bronchoscopy, but the patient refused any intervention. Eventually, the patient was managed conservatively with oxygen and noninvasive ventilation. After a duration of 1 month, the patient again presented to the emergency department with severe respiratory distress and unfortunately could not survive.

Discussion

Chondrosarcoma is the third most common primary malignant bone tumour and the most common primary malignant chest wall tumour [3]. Furthermore, pulmonary metastases frequently appear as round nodules of varying sizes and densities on roentgenograms and computed tomography. Endobronchial lesions can present with symptoms like cough, hemoptysis, obstructive collapse, and recurrent pneumonia. Here, our patient presented with a history of recurrent pneumonia along with obstructive collapse.

Bahadir et al. published an endobronchial metastasis of pelvic chondrosarcoma which is an unusual presentation [4]. Makoto Emori et al. also published pulmonary metastasis from a costal chondrosarcoma [5].

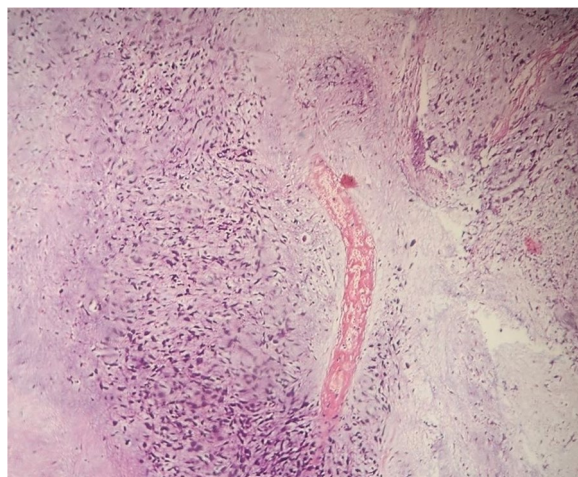


Fig. 4 Histopathology: moderately cellular, intersecting in fascicles and herringbone pattern suggesting malignant spindle shape tumour

Our case is unusual as we did not find any significant metabolic activity on the PET scan except the left main bronchus lesion so the possibility of metastatic nature of endobronchial lesion is less likely and suggesting a primary chondrosarcoma of endobronchial origin.

Treatment of pulmonary chondrosarcoma is not well defined. We planned rigid bronchoscopy followed by debulking and stent placement for palliation. Chemotherapy was not preferable because of poor performance status. But all the above interventions were refused by the patient so he was managed conservatively with oxygen and noninvasive ventilation.

Conclusions

A few numbers of primary pulmonary chondrosarcomas are reported with parenchymal involvement, but endobronchial involvement is very rare. A high degree of suspicion is required by pulmonologists during bronchoscopic examination of endobronchial lesion and should have a differential diagnosis while sending biopsy sample for histopathological examination. Careful histologic evaluation is also important to diagnose this rare entity especially on small biopsies. Prognosis remains poor as per available literature. Further studies including case series are needed for better understanding of presentation and management. This case report will add to the existing scientific knowledge about the primary pulmonary chondrosarcoma.

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Authors' contributions

RGK, conceptualization and writing — original draft. AM, review and editing and methodology. SN, visualization, investigation and validation. MK, review and editing and supervision.

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Availability of data and materials

Data and material available are on request from corresponding author.

Declarations

Ethics approval and consent to participate

Ethics approval is taken from institutional ethical committee. Authors have obtained written consent for publication.

Consent for publication

The authors declare that consent for publication to case report has been taken from patient and will be provided on demand.

Competing interests

The authors declare that they have no competing interests.

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