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Case Report

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Incidental Benign Giant Pulmonary Chondroid Hamartoma

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ABSTRACT

Hamartomas constitute a small portion of all pulmonary neoplasms. Here we present a case which was found incidentally on CT scan of the abdomen, a rare case of a giant pulmonary hamartoma (PH) was identified in the lower lobe of the left lung. The patient underwent a left exploratory thoracotomy and left lower lobectomy and the lesion was removed and identified as a chondroid hamartoma. The patient recovered successfully and obtained a repeated CT scan in 3 months, which showed no residual disease or recurrence.

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Introduction

Incidence of pulmonary hamartoma (PH) in the adult population ranges from 0.025 to 0.032%. They are generally found in the 5th and 6th decades, and men are four times more likely than women to be impacted [1]. Although unusual, these lesions represent the most prevalent benign neoplasm, accounting for 77% of benign lung nodules and 8% of single lung lesions [2,3]. Most hamartomas occur in the peripheral parenchyma, with exceptions found more centrally in the chest wall. Moreover, about 10% of lesions occur endobronchially [2,4].

The histological composition of these tumors , which is also known as chondroid hamartomas, is a mature mesenchymal tissue, such as adipose, tissue, bones, or smooth bundles of muscles and tissues of fibromyxoid with variable proportions. They are slow-growing, non-invasive nodular lesions, and lined by pulmonary epithelium [1].

Presentation of Case

A 55-year-old male smoker with hypertension was hospitalized to our hospital with an accidental finding of a left lower lobe lung mass, which was discovered on a CT abdomen as part of a medical assessment for a history of hematuria, as he is known case of renal stones. The patient was asymptomatic. Excellent functional status. At presentation, the physical and laboratory tests were normal.

Computerized tomography of the chest revealed a well circumscribed heterogeneously enhancing mass with cystic changes and multiple discrete calcified foci detected lung lobe and measuring 9 x 7.5 x 7 cm in its maximum transverse, AP and craniocaudal dimensions respectively. The mass is abutting the left diaphragmatic copula inferiorly and invading the pericardial bed of fat medially with loss of fat plane with adjacent heart. A left hilar lymph node measures 2 x 1 cm and few tiny simple mediastinal lymph nodes (Figure 1).

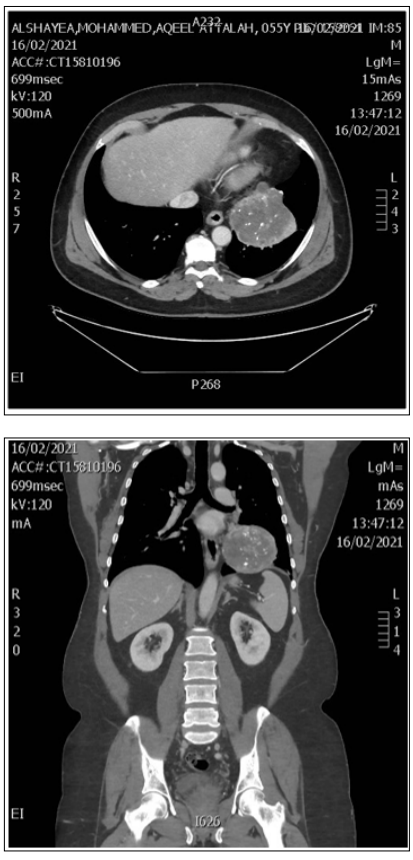

Figure 1: (A) & (B) Computed tomogram of the Thorax, showing Computerized tomography of the chest revealed A well circumscribed heterogeneously enhancing mass with cystic changes and multiple discrete calcified foci detected lung lobe and measuring 9 x 7.5 x 7 cm in its maximum transverse, AP and craniocaudal dimensions .

The radiologic interpretation of the mass is : a left lower lung lobe soft tissue mass with necrotic component and scattered micro calcifications associated with right hilar lymph node, findings could represent pleural mass such as a fibroma , mesothelioma other differential diagnosis will include neurogenic tumor and lung cancer, which need a biopsy for tissue diagnosis PET scan done for him and showed mild FDG avid cystic partially calcified multi septated left lower lobe pulmonary mass, which suggestive of hydatid cyst for correlation. No FDG avid disease anywhere else. CT guided biopsy was done for him and found to be a benign low grade chondroid tissue.

A thoracotomy was performed to obtain a definitive diagnosis and as curative treatment, and the lesion was resected completely through left lower lobectomy as the mass was completely occupying the lobe. Appropriate level of lymph node dissection was performed and sent for histopathology examination.

Gross Description

A segment of lung, measuring 12 x 11 x 7.0 cm. There is a bulging unencapsulated mass involving the lung lobe, measuring 8.0 x 7.0 x 7.0 cm. Serial sectioning of the mass showed white lobulated cartilaginous cut surface (Figure 2). There was no areas of hemorrhage or necrosis. Serial sectioning of the lung lobe showed unremarkable lung parenchyma.

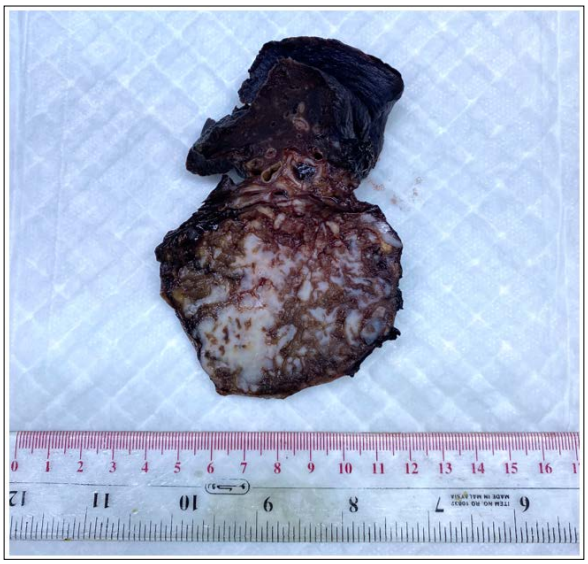

Figure 2: Gross picture of the mass measuring 8 cm in largest dimension, and showing white lobulated cartilaginous cut surface

Microscopic Description

Histological examination of the mass shows disordered mature benign hyaline cartilage with ossification, along with fatty tissue and entrapped bland ciliated columnar epithelium (Respiratory-type epithelium) (Figure 3). There is no evidence of nuclear atypia, mitosis or necrosis. These features are in keeping with pulmonary hamartoma. The remaining of lung parenchyma is unremarkable.

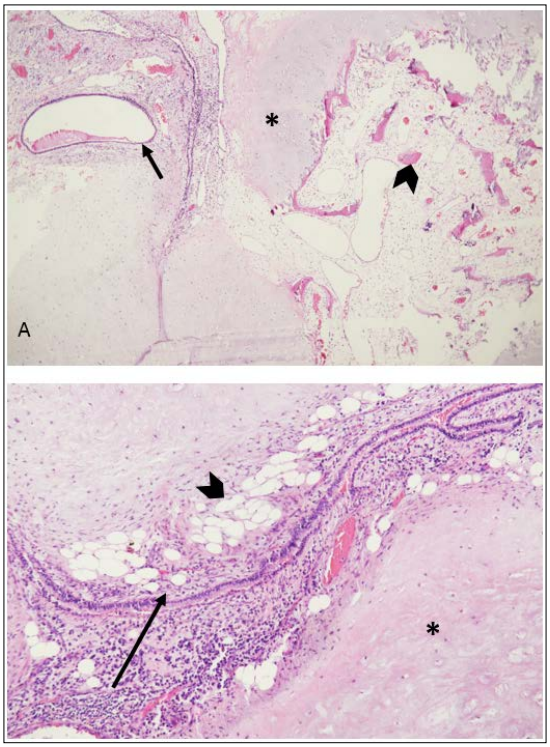

Figure 3: (A) Hematoxylin and eosin stain (4x) power showing respiratory epithelium (Arrow), bone (Arrowhead), and cartilage (Asterisk), (B) Hematoxylin and eosin stain (10x) power showing respiratory epithelium (Arrow), cartilage (Asterisk), and fat (Arrowhead)

The patient's postoperative course was uneventful, and patient was discharge on the 4th day post operation and on good condition.

Discussion

Originally the term 'hamartoma' is derived from the Greek term meaning 'to err or to fail', they were first described by the pathologist Albrecht in 1904, who defined them as tumour-like malformations that are usually made up of an abnormal mixture of the normal component of an organ [5]. Pulmonary Hamartomas usually consist of a mixture of cartilage, adipose tissue, fibrous tissue, smooth muscle bundles, and fibromyxoid tissue in uneven proportions. Additionally, slit-like spaces lined with respiratory epithelium are also commonly present. Depending upon the dominant component, hamartomas can be subdivided into various subtypes; chondromatous, leiomyomatous, lymphangiomyomatous, adenofibromatous and fibroleiomyomatous [5,6]. When the cartilage is the predominant element of a hamartoma it can be called chondroid hamartomas, mixed mesenchymoma, or chondromatous hamartoma. Chondroid hamartomas are the most common subtype and are usually solitary, well-circumscribed, and with a dimension ranging from 1-4cm, and are rarely large or multiple. They more frequently occur in adults with a peak incidence in the 5-6th decade of life, with a higher prevalence among men with a male:female ratio 4:1 [6,7].

Chondromatous hamartomas are further subdivided into 2 types depending on the location; parenchymal hamartomas which is more common accounting for 90%, and endobronchial hamartoma (10%) [7]. As in our case, Parenchymal hamartomas, which are usually asymptomatic and are found incidentally on x-ray or during autopsy, as solitary, small-sized, peripherally located lesions. While endobronchial hamartomas which are centrally located

are often symptomatic and usually present with hemoptysis, cough, wheezing, fever or obstructive symptoms. Therefore, it is commonly misdiagnosed as other obstructive lung diseases e.g. Asthma [5,7].

Radiologically, there are some features that aid in the radiological diagnosis of chondromatous hamartomas; they could present as coin lesion, which is described as small, rounded, well defined, solitary nodules with smooth edges and a diameter ranging from 1-5cm [7].

While another feature is described as the popcorn lesion which is characterized by the presence of calcifications that appear as randomly distributed and often overlapping rings. Additionally, the presence of fat is considered as a reliable clue that aid in the radiological diagnosis of hamartoma, Gaerte, 2002 et al. found that fat is identified in as many as 50% of all cases of pulmonary hamartomas [8]. Despite its incidental finding during radiology, transthoracic fine-needle aspiration (FNA) can be used in some cases to confirm the diagnosis, and also in asymptomatic patients [7].

Despite surgical resection being the only definitive curative option available, the management of pulmonary hamartomas should be tailored according to the age of the patient, tumour size, and growth [9]. During surgical operations the main goal is to preserve functional lung tissues, thus, the most common surgical choice is tumour enucleation with wedge resection, while more radical procedures such as lobectomy or pneumonectomy are restricted for deep, multiple, or large lesions, or in the case of highly hilum adherent lesions[7][9]. Since fine-needle aspiration biopsy is considered as a confirmatory diagnosis for most hamartomas, operation is required only in cases of persistent expansion, respiratory symptoms, or when malignancy cannot be excluded. Undergoing surgical procedures are often proposed to patients with large or rapidly growing lesions, and exceptionally, to young and middle-aged patients with slow-growing hamartomas [7,9].

In conclusion

Even though the vast majority of chondroid hamartomas are asymptomatic, small, solitary, and peripherally located, occasionally they may present as a large mass that can clinically mimic malignancy. Depending upon the patient's age and tumour status individualized management should be proposed, yet in most cases, chondromatous hamartomas can be completely cured by surgical resection. Recurrence of pulmonary hamartomas after surgical resection has rarely been reported, therefore, if upon radiological follow-ups no growth has been detected the case will be closed.

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Ethical Approval

IRB

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

References

1. Saadi MM, Barakeh DH, Husain S, Hajjar WM (2015) Large multicystic pulmonary chondroid hamartoma in a child presenting as pneumothorax. Saudi Med J 36: 487-489.
2. Ahmed S, Arshad A, Mador MJ (2017) Endobronchial hamartoma; a rare structural cause of chronic cough. Respir Med Case Rep 22: 224-227.
3. Lu Z, Qian F, Chen S, Yu G (2014) Pulmonary hamartoma resembling multiple metastases: A case report. Oncol Lett 7: 1885-1888.
4. Kishore M, Gupta P, Preeti, Deepak D (2016) Pulmonary Hamartoma Mimicking Malignancy: A Cytopathological Diagnosis. J Clin Diagn Res 10: ED06-ED07.
5. Carlsen C, Kiaer W (1950) Chondromatous Hamartoma of the Lung. Thorax 5: 283-292.
6. Lee Y, Moon J, Gang S, Park S, Kim S (2015). Pulmonary Chondroid Hamartoma with Nontuberculous Mycobacterial Infection. Medicine 94: e689.
7. Pojda J, Hürlimann S, Leiser A (2019) Giant pulmonary chondroid hamartoma in a 74-year-old female patient. A case report and brief review of literature. Journal of Lung, Pulmonary & Respiratory Research 6: 50-53.
8. Gaerte S, Meyer C, Winer-Muram H, Tarver R, Conces D (2002) Fat-containing Lesions of the Chest. RadioGraphics 22: S61-S78.
9. Palnaes Hansen C, Holtveg H, Francis, Rasch L, Bertelsen S, 1(992) Pulmonary hamartoma https://www.jtcvs.org/article/S0022-5223(19)34735-X/pdf.

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