Journal of Medical Cases Updates 2022;2(3):32-35

Report of A Rare Lung Neoplazm: Peripheral Intrapulmonary Lipoma

Özlem Kara[1], Ebru Akay [2], Mehmet Akif Tezcan[3], İbrahim Ethem Özsoy[3], Hatice Karaman[2],

[1]Kayseri City Education and Research Hospital, Department of Pathology, Kayseri, Türkiye
[2]Kayseri City Training and Research Hospital, Department of Pathology, Kayseri, Türkiye
[3]Kayseri City Training and Research Hospital, Department of Chest Surgery, Kayseri, Türkiye

ABSTRACT

Lipomas are frequent benign neoplasms; but however, it is rare in visceral organs such as the lung and a limited number of cases have been reported. Most pulmonary lipomas occur in the endobronchial localization. Peripheral intrapulmonary lipomas consist of 16 cases described in the literature in the past 100 years, including this case. Our case was found incidentally during thoracotomy due to secondary spontaneous pneumothorax. Macroscopically, it was 1.2 cm in diameter, well circumscribed, thin capsules, and yellow mass in the cut surface. Microscopically, the tumoral lesion consisting of uniform mature adipocytes surrounded by a thin fibrovascular connective tissue capsule was found to be compatible with lung lipoma.

In our article, the clinical, macroscopic and microscopic features of a peripheral intrapulmonary lipoma case are discussed.

Keywords: Lung, Lipoma, Nodüle, Solitary Pulmonary

INTRODUCTION

Intrapulmonary lipomas can be divided into two categories : intrabronchial lipomas and peripheral pulmonary lipomas (1). The vast majority are located centrally within the lung, arising from proximal lobar or segmental bronchi (2). Intrabronchial lipomas are 0.1-0.5% of all bronchial tumors (3). Pulmonary lipomas are uncommon, and peripheral pulmonary lipomas are extremely uncommon (1). Peripheral intrapulmonary lipomas are thought to arise from fatty tissue in the walls of peripheral bronchi at subsegmental level, and pathological analysis of resected lipomatous lesions, central and peripheral, has consistently demonstrated mature fatty tissue (2).

In our article, a case of peripheral intrapulmonary lipoma detected during thoracotomy for secondary spontaneous pneumothorax is presented.

CASE REPORT

A 76-year-old men was admitted to the hospital with a history of chest pain and shortness of breath. The patient, who has been followed up for chronic obstructive pulmonary disease for 15 years, has a history of smoking for approximately 40 years. In the chest X-ray and thorax computed tomography (CT) examinations, air density in the right hemithorax compatible with large pneumothorax in the pleural space and collapse in the right lung, large bullae and bronchiectatic changes in the upper zones of both lungs were observed. A soft

Received: 12.17.2022 **Accepted:** 01.12.2022

Correspondence Author: Özlem KARA, Kayseri City Education and Research Hospital, Department of Pathology, Kayseri, Türkiye. **E-mail:** ozlemsecilmisb@gmail.com, **Phone:** +90 (542) 524 13 81.

Cite This Article: Kara Ö, Akay E, Tezcan A.M, Özsoy E.İ, Karaman H, Report of a rare lung neoplazm: Peripheral Intrapulmonary Lipoma. Journal of Medical Cases Updates 2022; 2(3):32-35.

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tissue mass of 1.2 cm in diameter was detected incidentally in the anterior upper lobe of the right lung during thoracotomy performed for the patient due to a long-lasting pneumothorax that did not respond to treatment.

The specimen measured 1.2x1x0.6 cm and was light pink in color with round smooth surface. It was a 1.2 cm diameter, well circumscribed, thinly encapsulated, yellow mass in the cut surface.

Histologically, the tumour was surrounded by a thin connective tissue capsule and was composed of normal fat cells. There was a terminal bronchiole lined with respiratory epithelium in an area in the periphery of the lesion, and anthracose pigment was present around this area. Necrosis and atypia were not observed (Figs 1,2).

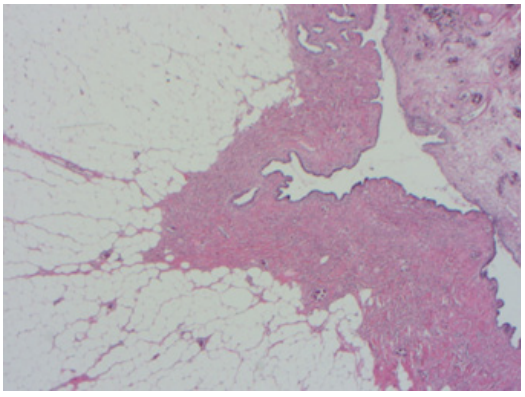

Fig. 1. Peripheral intrapulmonary lipoma: mature adipose tissue within terminal bronchi. (Hex50)

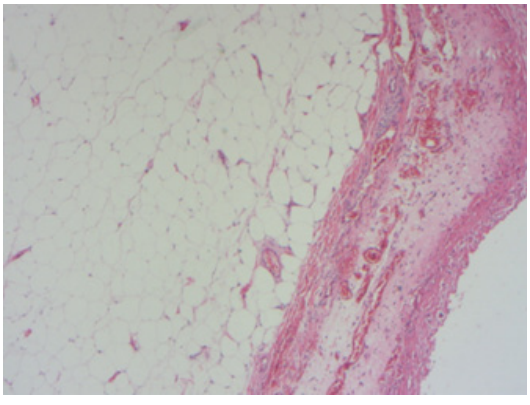

Fig. 2. Peripheral intrapulmonary lipoma: lipomatous lesion surrounded by thin connective tissue (HEx100)

DISCUSSION

Most of the pulmonary located lipomas occur intrabronchially (1). It is thought that intrabronchial pulmonary lipomas originate from submucosal adipose tissue (4). However the origin of the peripheral intrapulmonary lipomas is controversial. Some authors believe that it develops from adipose tissue in the peripheral bronchial wall, such as intrabronchial pulmonary lipomas (5). Some authors claim that its origin is subpleural adipose tissue (4). Obstruction is the cause of the symptoms in intrabronchial pulmonary lipoma. The clinical and radiological findings may include atelectasis or volume lost and infiltration or consolidation. In a subpleural lesion, respiratory system complaints are not expected in the patient; more common pleural abnormalities (1). In our case, no symptoms directly related to the lipoma developed. It was discovered incidentally during thoracotomy for pneumothorax secondary to chronic obstructive pulmonary disease.

Although it is not that obvious, there is a male predominance in intrabronchial lipomas (6). Of the 15 previously reported cases, 9 cases were reported in men and 6 cases in women aged 26-71 years with sizes ranging from 1 to 11 cm (7). Our case is the tenth male case and he is 76 years old, with the lesion was 1.2 cm in diameter.

Known risk factors for pulmonary lipomas are obesity, smoking and a history of diabetes (6). In our case, there was a history of smoking and chronic obstructive pulmonary disease, but there was no history of obesity or diabetes.

In the case of Erkılıç et al, during routine control, CT was performed

for the lesion that was noticeable on direct X-ray and a well-defined soft tissue mass was detected in the right lung periphery (1). In our case, the reason why it could not be detected radiologically before thoracotomy may be the accompanying pleural thickening and the small size of the lesion.

Histopathologically, pulmonary lipomas are not different from the counterparts located at other sites of the body. Moran et al reported two cases of spindle cell lipoma with endobronchial localization (8). Civi et al mentioned that there are bizarre, pleomorphic and multiple-nucleated giant cells, fat necrosis and cystic distances in some areas in their case report. They evaluated fat necrosis as a secondary change (9). Hasleton et al reported that occasionally, pulmonary lipomas may have small giant cells with bizarre nuclei scattered amid the mature fat resembling liposarcoma, but true lipoblasts are not seen (10). Erkılıç et al reported a lipoma case with myxoid degeneration (1). In our case there was no lipoblasts, different cell types, degeneration, necrosis or atypia. For these reasons, we evaluated our case as peripheral intrapulmonary lipoma.

Although they are rare, peripheral intrapulmonary lipomas should be considered in the differential diagnosis of solitary pulmonary lesions and their radiological differential diagnosis from other benign lesions and malign tumours may be difficult (11). Histologically, the differential diagnosis of a fat containing peripheral lung mass includes, in addition to lipoma, fibrolipomatous hamartoma and liposarcoma. The presence of other components such as islands of bone or cartilage or epithelial-lined clefts points to the correct diagnosis of hamartoma (9). In our case, there was no different component to suggest hamartoma. For these reasons, we evaluated our case as peripheral intrapulmonary lipoma.

CONCLUSION

The radiological appearance and presentation of the case and risk factors for malignancy are all considered in evaluating patients. Our case was found incidentally, but we think it is important to keep in mind peripheral pulmonary lipomas in the differential diagnosis as it will affect the treatment approach in solitary pulmonary lesions detected by radiological imaging. If necessary, an opinion for pathology is to provide a diagnostic work-up by frozen section for the first diagnosis of these lesions in correlation with radiographic findings and finally spare patients vital lung function by enucleation, wedge resection or segmentectomy.

ACKNOWLEDGEMENT

Ethical Approval: Written informed consent was obtained from the patient.

Financial Support: The authors declared that this study has received no financial support.

This study was presented in the 30th Turkish National Congress of Pathology 20-23 May, 2021, Online, Turkey.

Conflict of Interest: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author Contributions: Conseption: ÖK, EA, MAT Design: ÖK, EA, İEÖ Supervision: ÖK, EA, HK Materials: MAT, İEÖ Data Collection and/or Processing: MAT, İEÖ Analysis and/or İnterpretation: ÖK, EA, HK Literature Review: ÖK, EA, HK Writter: ÖK, EA, HK Critical Rewiew: ÖK, EA, MAT, İEÖ

All authors have read and approved the manuscript. All authors acknowledge substantial participation and responsibility for this work.

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