

# A Strange Dweller in Pulmonary Mass: Lung MALToma: Case Report

## Akciğer Kitlelerinde Yabancı Bir Sakin: Akciğer MALToması

Engin ALAGÖZ,<sup>a</sup>  
Kürşat OKUYUCU,<sup>a</sup>  
Hakan Cem YAĞLI,<sup>b</sup>  
Şükrü ÖZAYDIN,<sup>c</sup>  
Ali Ozan ÖNER<sup>d</sup>

Departments of  
<sup>a</sup>Nuclear Medicine,  
<sup>c</sup>Medical Oncology,  
Gülhane Military Medical Academy,  
Ankara

<sup>b</sup>Clinic of Nuclear Medicine,  
Yunus Emre State Hospital, Eskişehir  
<sup>d</sup>Department of Nuclear Medicine,  
Afyon Kocatepe University  
Faculty of Medicine, Afyonkarahisar

Geliş Tarihi/Received: 31.08.2015  
Kabul Tarihi/Accepted: 04.02.2016

Yazışma Adresi/Correspondence:  
Kürşat OKUYUCU  
Gülhane Military Medical Academy,  
Department of Nuclear Medicine, Ankara,  
TÜRKİYE/TURKEY  
k.okuyucu@yahoo.com

**ABSTRACT** MALT (mucosa-associated lymphoid tissue) lymphoma is an extranodal marginal zone B-cell lymphoma. Although the most common site of MALT lymphoma is gastrointestinal tract; salivary glands, orbit, lung, skin, thyroid, breast, liver, kidney, bladder, prostate have been reported. Lung MALToma (LM) or more correctly BALT (bronchus-associated lymphoid tissue) lymphoma springs in the marginal zone and marauds the bronchial epithelium by cellular lymphocytic infiltration. Lesions in lungs smaller than generally 3 cm in size are accepted as solitary pulmonary nodule. If they exceed this dimension, they are called pulmonary masses. Lots of benign and malign pulmonary or extrapulmonary pathologies lodge in these lesions. Lymphomas are rarely seen in these masses. Here, we report a MALT lymphoma of the lung.

**Key Words:** Lymphoma, B-Cell, marginal zone; fluorodeoxyglucose F18

**ÖZET** MALT (mukoza ilişkili lenfoid doku) lenfoma ekstranodal marjinal zon B hücreli bir lenfomadır. MALT lenfoma en sık gastrointestinal sistemde görülmesine rağmen tükrük bezi, orbita, akciğer, cilt, tiroid bezi, meme, böbrek ve prostat bezinde bildirilmiş vakalar da mevcuttur. Akciğer MALToma (LM), daha doğru bir deyişle BALT (bronş ilişkili lenfoid doku) lenfoma bronşlardaki marjinal zondan kaynaklanır ve lenfosit infiltrasyonu ile bronş epitelini tahrip eder. Akciğerlerde 3 cm'den küçük lezyonlar genel olarak soliter pulmoner nodül olarak kabul edilir. Bu boyutu aşanlara akciğer kitle lezyonu adı verilir. Bu lezyonlarda birçok akciğer veya akciğer dışı benign ve malign patolojiler yerleşik olur. Biz burada akciğerin nadir görülen bir MALT lenfomasını sunuyoruz.

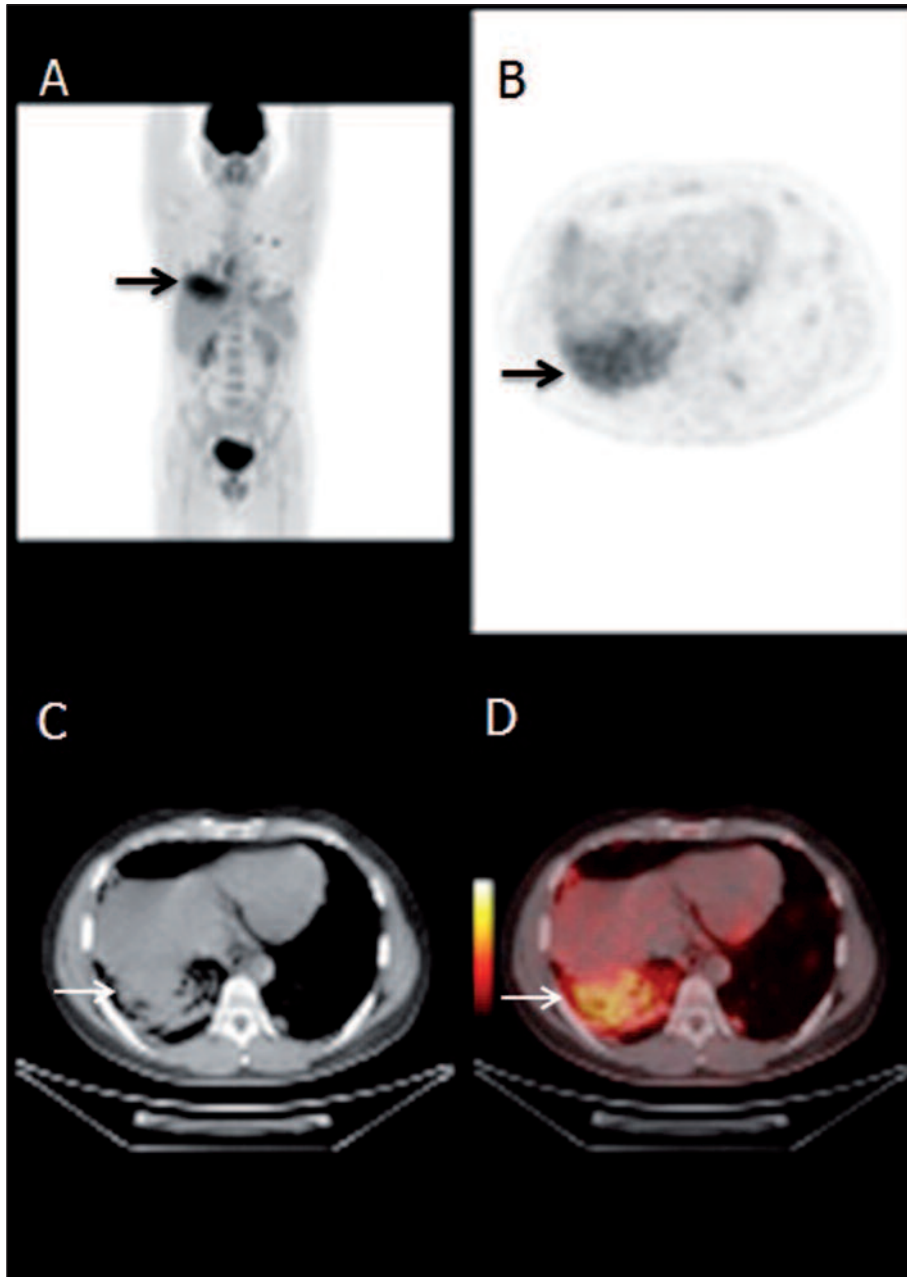
**Anahtar Kelimeler:** Lenfoma, B-hücreli, marjinal zon; fluorodeoksiglukoz F18

**Türkiye Klinikleri J Case Rep 2016;24(2):105-7**

**M**ucosa-associated lymphoid tissue (MALT) lymphoma locates under the epithelia furnishing gastrointestinal (GIS), respiratory, urogenital tracts and their rudimentaries.<sup>1</sup> MALT lymphoma is an extranodal marginal zone B-cell lymphoma. Although the most common site of MALT lymphoma is GIS tract; salivary glands, orbit, lung, skin, thyroid, breast, liver, kidney, bladder, prostate have been reported.<sup>2,3</sup> Lung MALToma (LM) or more correctly BALT (bronchus-associated lymphoid tissue) lymphoma springs in the marginal zone and marauds the bronchial epithelium by cellular lymphocytic infiltration. These infiltrates expand into interstitium. As a very rare tumour, LM is responsible for just 0.5% of all lung malignancies and compromises less

doi: 10.5336/caserep.2015-47680

Copyright © 2016 by Türkiye Klinikleri



**FIGURE 1:** 26 year-old male patient was requested FDG-PET/CT for benign/malign differentiation of the mass seen on thorax CT. MIP (A), transaxial PET (B), CT (C) and fusion (D) images show diffuse heterogeneous uptake pertaining to this mass in inferior lobe of right lung (arrows).

than 1% of all lymphomas.<sup>4</sup> Lobar atelectasis and its symptoms can be seen in the patients.<sup>5</sup>

### CASE REPORT

A space-occupying lesion was discerned on chest X-ray graphy of 26 year-old male patient complaining of hemoptysis, cough, night sweats and weight loss. A pulmonary mass, sized 46x34 mm in

inferior lobe of right lung was seen on thorax computed tomography (CT) performed for further examination. Bronchoscopic biopsy of the lesion revealed suspected malignancy. Upon this, FDG-PET/CT was requested for differential diagnosis of benign/malign. The lesion causing atelectasis in the majority of right inferior lobe by pressuring on right lower lobe bronchus had mild diffuse het-

erogeneous FDG uptake (SUV max:3.1) (Figure 1). After a wedge resection, the histopathologic diagnosis was MALT lymphoma and the patient was treated with chemotherapy.

## DISCUSSION

The most frequent sign of LM on CT is parenchymal consolidation with air bronchograms embodying as a nodule.<sup>5</sup> FDG-PET is used to characterize glucose metabolism of pulmonary mass lesions and helps differentiating between benign and malignant conditions.<sup>6,7</sup> As LM grows slowly and stays silent for a long time, normal expectation is mild to moderate FDG uptake. At the same time, PET helps indirectly by confirming the exclusion of other primary lymphoma origins and systemic in-

volvement or detecting extrapulmonary metastasis of a primary lung cancer. This tumour can be treated successfully by surgical resection followed by chemotherapy or radiotherapy alone.<sup>8</sup> For this reason, they must be distinguished from other primary or secondary pulmonary malignities. In this sense, a biopsy or a diagnostic and also therapeutic surgical intervention is very appropriate if possible. As a conclusion, it must always be kept in mind that all inhabitants lodging in solitary pulmonary nodules or masses thought to be malignant, may not always belong to expected primary or secondary pulmonary malignancy spectrum. Sometimes extraordinary tumours managed by distinct therapy protocols than the usual ones confused with them, can reside in these nodules.

## REFERENCES

1. Yoon RG, Kim MY, Song JW, Chae EJ, Choi CM, Jang S. Primary endobronchial marginal zone B-cell lymphoma of bronchus-associated lymphoid tissue: CT findings in 7 patients. *Korean J Radiol* 2013;14(2):366-74.
2. Thomas E, Lenzo N, Troedson R. Gastric and pulmonary lymphoma presenting as a solitary pulmonary nodule. *Biomed Imaging Interv J* 2007;3(4):e51.
3. Bilici A, Seker M, Ustaalioglu BB, Canpolat N, Salepci T, Gumus M. Pulmonary BALT lymphoma successfully treated with eight cycles weekly rituximab: report of first case and F-18 FDG PET/CT images. *J Korean Med Sci* 2011;26(4):574-6.
4. Isaacson PG. Mucosa-associated lymphoid tissue. *Semin Hematol* 1999;36(2):139-47.
5. Kinsely BL, Mastey LA, Mergo PJ, Voytovich MC, Zander D, Almasri NM, et al. Pulmonary-mucosa associated lymphoid tissue lymphoma: CT and pathologic findings. *AJR Am J Roentgenol* 1999;172(5):1321-6.
6. Buck AK, Hetzel M, Schirmeister H, Halter G, Möller P, Kratochwil C, et al. Clinical relevance of imaging proliferative activity in lung nodules. *Eur J Nucl Med Mol Imaging* 2005;32(5):525-33.
7. Zhang WD, Guan YB, Li CX, Huang XB, Zhang FJ. Pulmonary mucosa-associated lymphoid tissue lymphoma: Computed tomography and 18F fluorodeoxyglucose-positron emission tomography/computed graphy imaging findings and follow-up. *J Comput Assist Tomogr* 2011;35(5):608-13.
8. Solomonov A, Zuckerman T, Goralnik L, Ben-Arieh Y, Rowe JM, Yigla M. Non-Hodgkin lymphoma presenting as an endobronchial tumour: report of eight cases and literature review. *Am J Hematol* 2008;83(5):416-9.