Journal of SURGICAL ARTS
CERRAHİ SANATLAR DERGİSİ
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1308-0709

Case report

A case of malt lymphoma developing within bronchiectasis

Bronşektazi bölgesinde malt lenfoma gelişen olgu

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How to cite: Ateş A, Esme H. A case of malt lymphoma developing within bronchiectasis. J Surg Arts 2025;18(2):49-52.

Received: 13.02.2025 Accepted: 11.07.2025

ABSTRACT

A 58-year-old female patient presented with complaints of shortness of breath, cough, sputum production, and wheezing. She was diagnosed with localized bronchiectasis in the chest diseases clinic and referred to us. A soft tissue lesion was also present within the bronchiectatic tissue. The soft tissue lesion within the bronchiectatic area was totally excised. The pathology report identified it as 'Primary Pulmonary MALT Lymphoma. This case is presented as a rare occurrence of MALT lymphoma developing within bronchiectasis in the literature.

Keywords: Bronchiectasis; lymphoma; surgery

ÖZET

58 yaşında kadın hasta nefes darlığı, öksürük, balgam çıkarma ve hırıltı şikayetleriyle başvurdu. Göğüs hastalıkları kliniğinde lokalize bronşektazi tanısı almış ve tarafımıza yönlendirilmişti. Bronşektazi dokusu içerisinde yumuşak doku lezyonu da mevcuttu. Bronşektazi bölgesindeki yumuşak doku lezyonu total olarak çıkarıldı. Patoloji raporunda 'Primer Pulmoner MALT Lenfoma' olarak tanımlandı. Bu olgu, literatürde bronşektazi içerisinde gelişen nadir bir MALT lenfoma vakası olarak sunulmuştur.

Anahtar kelimeler: Bronşektazi; lenfoma; cerrahi

INTRODUCTION

Bronchiectasis is a chronic lung disease characterized by irreversible bronchial dilatation and tissue destruction resulting from infection or inflammation. Lymphomas originating from lymphoid tissue associated with mucosal surfaces (Mucosa-Associated Lymphoid Tissue – MALT) are classified as MALT lymphomas (Maltoma). The coexistence of these two conditions is exceptionally rare in the literature (1-3).

Conservative treatment options for bronchiectasis include antibiotic therapy, respiratory physiotherapy (postural drainage), bronchodilators, and mucolytics. However, surgical intervention is indicated in patients with non-cystic fibrosis bronchiectasis who fail to respond to medical therapy. Parenchyma-sparing surgical approaches aim to excise the affected area with minimal loss of lung tissue—most commonly via lobectomy or sublobar resection (4,5).

The objective of this report is to highlight the importance of anticipating unexpected pathologies such as malignancy in surgically managed cases, and to emphasize the role of appropriate preoperative assessment and intraoperative decision-making. Furthermore, we

aim to draw attention to the potential relationship between bronchiectasis and MALT lymphoma by presenting this rare case.

CASE

A 58-year-old female presented to the pulmonary clinic with complaints of dyspnea, productive cough, and wheezing for the past week. She had a known history of bronchiectasis for three years. Chest radiography showed findings consistent with bronchiectasis in the middle zone of the right lung, fissural thickening, and a well-circumscribed nodular lesion with soft tissue density below the fissure (Figure 1).

Thoracic CT revealed peribronchial thickening, mucus plugging, and cystic bronchiectatic changes with air-fluid levels in the posterior segment of the right upper lobe and superior segment of the right lower lobe (Figures 2 and 3). Flexible bronchoscopy revealed dilated bronchi in the right middle and lower lobes with abundant secretions; no endobronchial lesions were identified.

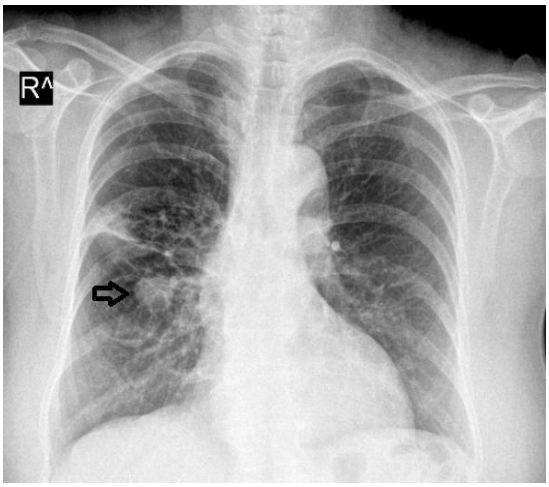

Figure 1: Preoperative chest X-ray.

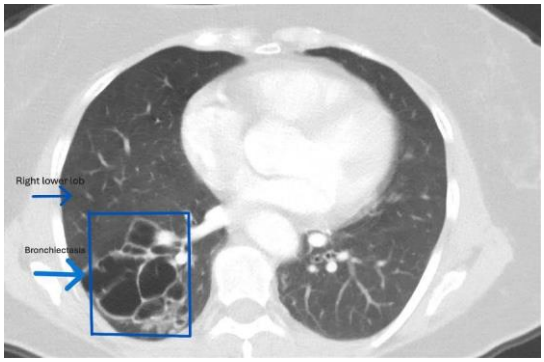

Figure 2: Thoracic CT; Peribronchial pathologies.

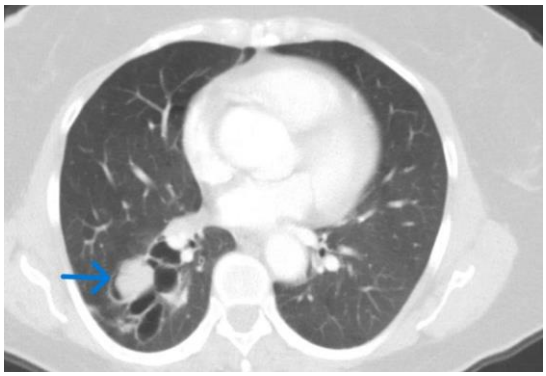

Figure 3: Well-defined lesion measuring 23x20 mm with a density of 21 HU within the bronchiectatic tissue.

PET/CT demonstrated a well-defined 23×20 mm soft tissue density lesion within the cystic bronchiectatic area (SUVmax: 5.1), suggestive of a fungal ball or solid mass. No other pathological findings were identified elsewhere in the body, suggesting isolated pulmonary involvement. Given the patient's persistent symptoms despite medical therapy and the localized nature of the disease, surgery was indicated. To avoid additional invasive procedures such as percutaneous biopsy, intraoperative frozen section evaluation was planned.

On admission, the patient was clinically stable. Respiratory examination revealed diffuse rhonchi and diminished breath sounds bilaterally. Her medical history included rheumatoid arthritis (20 years), hypertension (30 years), and remote tuberculosis (30 years ago). She was a non-smoker. Empirical antibiotic therapy, mucolytics, inhalers, and analgesics were initiated.

Laboratory findings included: WBC 9,530/µL, hemoglobin 12.6 g/dL, and CRP 8.41 mg/dL; all other parameters were within normal limits. Pulmonary function tests showed: FEV1 1320 mL (46%), FVC 1840 mL (36%), FEV1/FVC 71%, and DLCO 38%—consistent with moderate to severe obstructive ventilatory impairment and decreased diffusion capacity.

After one week of medical treatment, the patient's rhonchi resolved and sputum production ceased. A wedge resection of the posterior segment of the right upper lobe and a segmentectomy of the superior segment of the right lower lobe were performed. Frozen section analysis revealed a malignant lesion consistent with lymphoma. Due to limited pulmonary reserve and negative surgical margins, no further resection was undertaken. Mediastinal lymph node dissection (stations 4, 7, and 11) was completed.

The postoperative course was uneventful. The chest drain was removed on day 6, and the patient was discharged in good condition. On postoperative day 16, follow-up revealed complete resolution of symptoms and a normal chest X-ray.

Histopathological examination revealed lymphoepithelial lesions. Immunohistochemistry showed positive expression of CD20, bcl2, and LCA, and negative expression of CD3, CD5, CD10, CD23, CD30, CD15, Cyclin D1, bcl-6, TdT, and cytokeratin 19. The Ki-67 proliferation index was approximately 15%. No amyloid deposition was noted on crystal violet staining. No malignant cells were found in the lymph nodes. A final diagnosis of Primary Pulmonary MALT Lymphoma was made.

The patient was referred to the hematology department for follow-up. Since the lymphoma had been completely excised with negative margins and no other sites of involvement were found, chemotherapy was not indicated. The patient was placed under surveillance. At the 6-month follow-up, no recurrence was detected.

DISCUSSION

Primary pulmonary lymphomas are defined as lymphomas confined to the lung parenchyma. Approximately 70% of these are MALT lymphomas. First described in the gastrointestinal tract by Isaacson and Wright in 1983, MALT lymphomas have favorable prognoses, with 5- and 10-year survival rates exceeding 80% (1–3). Accurate diagnosis is essential for optimal management and outcomes.

Most MALT lymphomas are asymptomatic at diagnosis and are discovered incidentally on imaging. When symptoms are present, they include cough, dyspnea, and hemoptysis. With advances in CT imaging—including shorter scan times and improved resolution—pulmonary MALT lymphomas can be identified more effectively. Typical CT findings include consolidation with air bronchograms, pulmonary masses, mass-like consolidations, and multiple nodules (3,4).

Definitive diagnosis relies on histopathological and immunohistochemical evaluation obtained via bronchoscopy, thoracoscopy, or open biopsy. MALT lymphomas typically exhibit slow progression and remain localized for extended periods (5).

The coexistence of MALT lymphoma and bronchiectasis is rare. In a 2019 study by Deng et al., 11 of 53 patients with MALT lymphoma also had cystic bronchiectasis on CT (6). King et al. reported three cases of cavitary lesions associated with histologically proven cystic bronchiectasis in a cohort of 24 patients (7). A 2023 study by Li et al. reported bronchiectasis in 43 of 72 patients (59.7%) with pneumonic-type primary pulmonary lymphoma (8).

This association may result from chronic antigenic stimulation in bronchiectasis, leading to lymphoid proliferation. Furthermore, dilated airways, alveolar collapse, or significant destruction of adjacent bronchi may facilitate lymphoma development, as MALT lymphomas exert minimal mass effect on surrounding tissues.

Differential diagnoses include aspergilloma, mucocele, malignancy, and pulmonary sequestration. Aspergillomas typically appear as ball-like masses within cavities and may exhibit a characteristic crescent-shaped air sign on radiographs. In our case, normal inflammatory markers and the absence of an endobronchial lesion on bronchoscopy made aspergilloma unlikely.

Mucocele is caused by bronchial obstruction due to granulomatous infection or endobronchial lesions and is differentiated from bronchial atresia by the absence of distal air trapping (9). Although CT suggested mucocele, bronchoscopy did not reveal any obstructive lesions.

Pulmonary sequestration may present as a solitary, well-defined opacity or nodule, but can also mimic pneumonia or bronchiectasis (10).

Management of bronchiectasis requires a multidisciplinary approach. Mild cases may respond to physiotherapy, airway clearance, and postural drainage. Severe or refractory cases may require surgical resection, especially in the presence of localized disease, hemoptysis, or recurrent infections. Minimally invasive techniques (VATS) are preferred over open thoracotomy (11).

While complications such as lung abscess, empyema, and amyloidosis were more common in the pre-antibiotic era, modern management has improved prognosis. Nonetheless, patients remain at risk for acute exacerbations, hemoptysis, chronic respiratory failure, and cor pulmonale (12).

In conclusion, advances in imaging have facilitated the diagnosis of pulmonary pathologies. However, overlapping radiologic features and coexisting diseases may complicate diagnosis. In our case, MALT lymphoma within bronchiectasis was detected on a 5 mm non-contrast thoracic CT. Failure to recognize such lesions can delay diagnosis and negatively impact prognosis. Clinicians should maintain a high index of suspicion and be mindful of potential coexisting pathologies when evaluating bronchiectasis.

ACKNOWLEDGEMENT

Informed consent

Informed consent form has been obtained from the patient.

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