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CASE REPORT **Open Access**

Rare Case of Primary Effusion Lymphoma mimicking Pulmonary Tuberculosis

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ABSTRACT

Primary effusion lymphoma (PEL), a relatively uncommon variant of large B-cell non-Hodgkin lymphoma (NHL), frequently develops in individuals with compromised immune systems, particularly in the later stages, and is characterized by the accumulation of fluid in body cavities without an observable tumour mass. We describe the situation of a 61-year-old male who presented at the emergency department with symptoms including dyspnea on exertion, a persistent low-grade fever, night sweats, and a continuous dry cough for three days. Following the initial diagnosis process, which pointed towards pulmonary tuberculosis, he was immediately started on a regimen of empirical anti-tubercular treatment (ATT). A general examination revealed a decreased oxygen saturation, tachypnea, and a bulging tenderness of the lymph node on the neck. Chest computerized tomography (CT) scan indicated pericardial and pleural effusion with mediastinal dilatation, suspected thymoma or lymphoma. The patient underwent a cardiocentesis needle aspiration, but the histological analysis did not reveal specific characteristics. Subsequently, a surgical biopsy was performed on a lymph node in the left supraclavicular area. A classical hodgkin lymphoma nodular sclerosis type was found in the histopathology examination. Immunohistochemistry detected the tumour's cellular markers (i.e., CD30). Chemotherapy treatment for six cycles resulted in an excellent outcome. In conclusion, the contribution of radiologists is essential in diagnosing PEL, as they are responsible for spotting effusions within body cavities and confirming the absence of singular masses or nodules in the pleura, which helps in significantly narrowing the differential diagnosis possibilities.

Keywords : Lung tuberculosis, lymphoma, primary effusion

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Introduction

Primary effusion lymphoma (PEL) is an uncommon type of large B-cell non-Hodgkin lymphoma (NHL) that predominantly affects middle-aged males, particularly those who are immunosuppressed or HIV-positive. It typically occurs in the advanced stages of the disease and is characterized by fluid accumulation in body cavities without a discernible tumour mass.[1] This type of cancer contributes to about 4% of all NHL cases related to HIV. Around 80% of individuals diagnosed with PEL are known to have HIV, with the majority being males aged approximately 44-45 years. In approximately 80% of PEL cases, there is also a concurrent infection with Epstein-Barr Virus (EBV). It's important to note that EBV might not be present in older patients living in areas where Human Herpesvirus 8 (HHV8) is highly prevalent.[2,3] However, primary effusion lymphoma may also occur in immunocompetent patients infected with either human herpes virus type 8 or Epstein-Barr virus.[4] This condition presents with fluid accumulation in body cavities, resulting in constitutional symptoms such as fever, weight loss, and manifestations related to external pressure, such as difficulty breathing or abdominal pain.[1,4] The diagnosis of PEL presents challenges and requires a multidisciplinary approach involving radiology, pathology, clinical presentation, and epidemiology. Radiologists are essential in verifying the existence of fluid accumulations within body cavities and excluding lymph node enlargement, organ swelling, or any other masses beyond the body cavities to confirm the diagnosis.[5,6] Sophisticated imaging tools such as diffusion-weighted magnetic resonance imaging (DW-MRI) and chest computed tomography (CT) scans are fundamental for accurate diagnosis. They help distinguish between lymphoma subtypes and monitor treatment response effectively.[7,8] In this report, we present the radiological findings of PEL, which were discovered incidentally and appeared similar to those seen in patients with pulmonary tuberculosis.

Case

A 61-year-old man presented at the emergency room with symptoms of dyspnea upon exertion, mild fever, night sweats, and a dry cough persisting for three days. Empirical anti-tubercular treatment (ATT) was administered, suspecting pulmonary tuberculosis, but acid-fast staining and gen X-pert results were negative. A chest X-ray showed left pleural effusion and substantial mediastinal enlargement (Figure 1). A general examination revealed a decreased oxygen saturation and tachypnoea. On physical examination, a bulging lymph node on the neck showed tenderness also.

A second chest X-ray was performed and showed cardiomegaly, suspected pericardial effusion. Then, we took a multiple slice CT (MSCT) scan of the chest, which showed pericardial effusion, pleural effusion, and mediastinal dilatation, suspected thymoma or lymphoma (Figure 2). No solid mass was found in the intrapleural or intrapulmonary space. Chest MSCT scan with contrast wasn't performed because the patient was allergic to the contrast. Cardiac needle aspiration was conducted, but the histological findings were non-specific, showing signs of chronic inflammation without a distinct pattern. The patient underwent a surgical biopsy of a left supra-clavicular lymph node. A classical hodgkin lymphoma nodular sclerosis type was found in the histopathology examination. Immunohistochemistry successfully identified cellular markers associated with the tumour, specifically CD30. After chemotherapy treatment (cyclophosphamide, doxorubicin, vincristine, and prednisone) for six cycles, we do a follow-up with the patient with a chest X-ray, and the result is excellent (Figure 3).

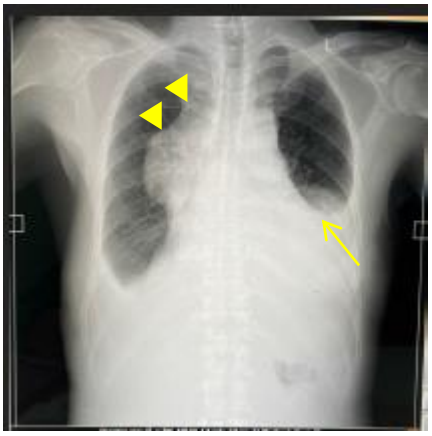

Figure 1. Initial chest radiography of the patient showed pleural effusion (arrow) and enlargement mediastinal (arrow head).

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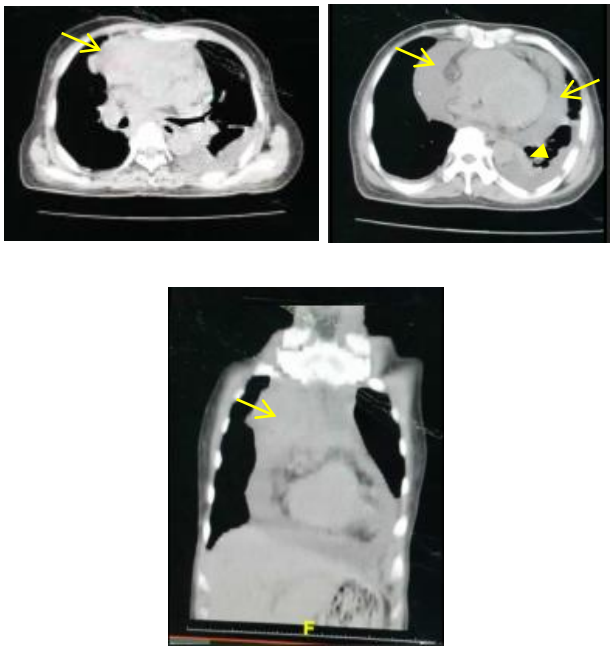

Figure 2. Non contrast chest CT-scan of the patient. A. Mediastinal mass on transversal section (arrow). B. Pericardial effusion (arrow) and pleural effusion (arrow head) on transversal section. C. Mediastinal mass on sagittal section (arrow).

Figure 3. Chest radiography of the patient following chemotherapy showed excellent improvement

Discussion

Primary effusion lymphoma is a scarce condition, comprising 4% of NHL cases in individuals with human immunodeficiency virus (HIV) and appearing in just 0.1% to 1% of all lymphomas in HIV patients residing in regions where human herpes virus type 8 is not widespread. Primary effusion lymphoma is a rare condition that often exhibits radiological images resembling those found in cases of pulmonary tuberculosis during examinations.[1,9]

Despite its infrequency, radiologists need to consider the possibility of PEL as a potential diagnosis when encountering recurring cavity effusions during or after treatment with ATT. The primary manifestation observed in untreated NHL patients often involves lymphadenopathy in the mediastinal/hilar region and the occurrence of pleural effusion.[10] After the administration of chemotherapy, radiological control was carried out, and the mass on mediastinum and effusion on pericardial and pleural space was diminished.

Conclusion

Radiologists are crucial in diagnosing PEL, as they identify fluid accumulation in body cavities and rule out the presence of solitary masses, pleural nodules, or other abnormalities, thus assisting in narrowing down potential diagnoses.

Conflict of interest

Nothing to declare

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Nothing to declare

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Nothing to declare

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