

Pulmonary Involvement of Peripheral T-cell Lymphoma, Unspecified: A Case Report¹

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Peripheral T-cell lymphoma is a rare type of lymphoma that's derived from post-thymic lymphoid T cells. Pulmonary involvement of peripheral T-cell lymphoma of the unspecified type is very rare and the imaging findings of this illness have rarely been reported. We present here a case of peripheral T-cell lymphoma of the unspecified type with a cavitory lesion in the lung parenchyma, and we pathologically confirmed this illness by performing video-assisted thoracoscopic surgery.

Index words : Lymphoma, T-Cell, peripheral
Tomography, X-Ray Computed
Lung

Peripheral T-cell lymphoma (PTCL) is a subtype of non-Hodgkin's lymphoma (NHL) and PTCL is quite rare in western countries: this accounting for 10 to 15% of all the case of NHL in Europe (1). Although PTCL may involve many organs, including the sino-nasal cavity and airway, intestinal tract, skin, lymph nodes and liver, it rarely involves the lung, and there are few radiological descriptions to guide making the proper diagnosis (2). We report here on a case of PTCL, unspecified (PTCL-U) that which did involve the lung parenchyma and mediastinal lymph nodes, and we present the clinical manifestations and pathological findings.

Case Report

A 39-year-old man was admitted with a mild fever and

cough of 3 days duration. The laboratory findings were an erythrocyte sedimentation rate (ESR) of 24 mm/hr, a C-reactive protein (CRP) level of 77 mg/L, the cytoplasmic antineutrophil cytoplasmic antibody (cANCA) was negative and the perinuclear anti-neutrophilic cytoplasmic antibody (pANCA) was negative. The chest radiography on admission revealed a cavitory lesion in the left middle lung zone (Fig. 1A). The chest CT image showed a thin-walled cavitory lesion in the superior segment of the left lower lobe (Fig. 1B). The upper level of the chest CT image, through the carina, revealed multiple lymphadenopathies in the mediastinum. The patient was treated with antibiotics and then he was discharged after the fever and cough had subsided.

About 2 months later, the patient was readmitted to our hospital after 2 days of high fever. The laboratory findings were a white blood cell count of 14, 500/uL, a CRP level of 103 mg/L, the C-ANCA and P-ANCA were negative and the sputum acid-fast bacilli was negative. The antibody titer for Epstein-Barr virus was not elevated. Chest radiography showed an ill-defined consolidation in the left middle lung field and a prominent left hilum (Fig. 1C). The follow-up chest CT images showed a thick-walled cavity in the left lower lobe that was

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more enlarged than that seen on the previous chest CT scan (Fig. 1D). The mediastinal window images of the chest CT scan revealed multiple lymphadenopathies with poorly defined margins in the mediastinum and an

irregular diffuse infiltration in the mediastinal fat (Fig. 1E).

The consolidation with the cavitary lesion was removed by performing video-assisted thoracoscopic

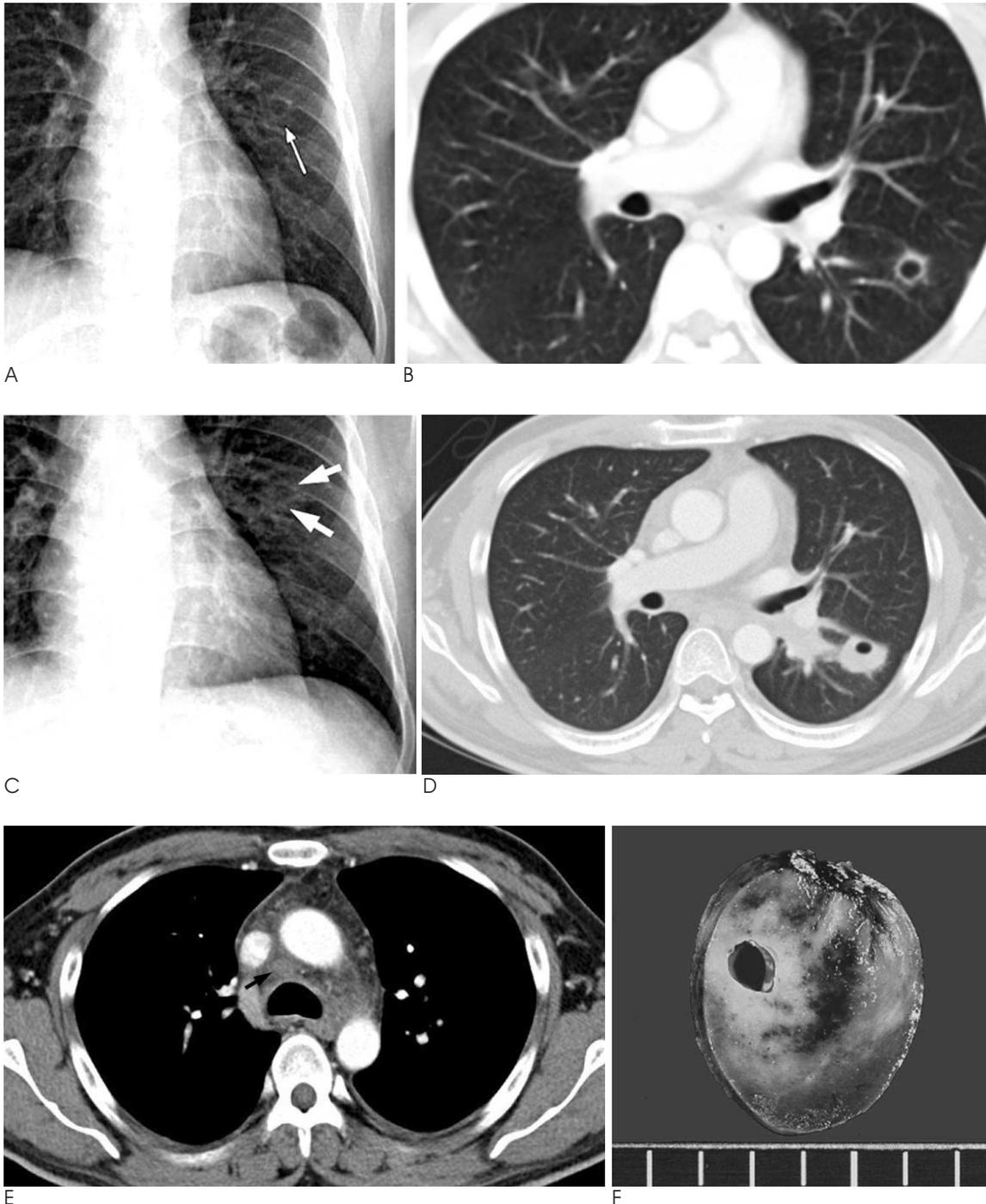


Fig. 1. A. The initial chest X-ray of a 39-years-old male shows a thin-walled cavitary lesion (arrow) in the left middle lung zone. B. The chest CT images show a thin-walled cavitary lesion with a speculated margin in the superior segment of the left lower lobe. C. The chest X-ray after 2 months shows consolidation (arrows) in the left middle lung zone. D, E. The follow-up CT scan shows a thick-walled cavitary lesion, which has enlarged as compared to that seen on the previous chest CT scan in Figure 1B. An irregular diffuse infiltration in the mediastinal fat is visualized with a poorly defined lymph node (arrow) (E). F. Grossly, the cut specimen shows parenchymal necrosis and hemorrhage with a cavitary lesion.

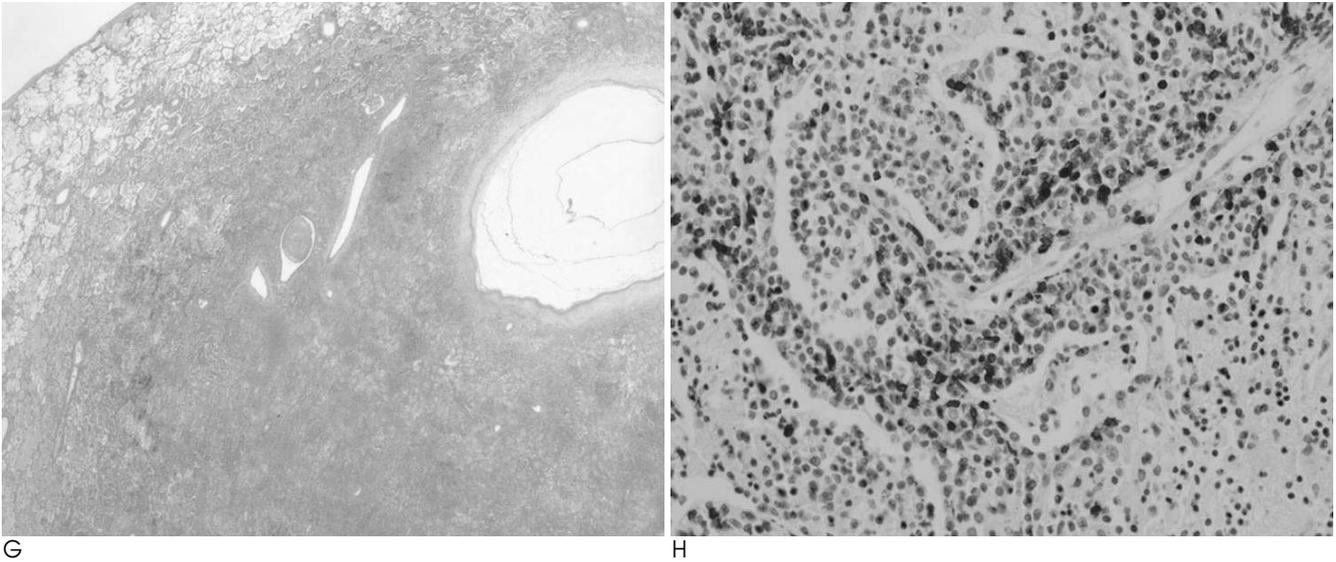


Fig. 1. G. The microscopic image shows a cavitary lesion and dilated vessels with surrounding hemorrhagic necrosis (hematoxylin and eosin staining, $\times 40$).

H. Immunohistochemical staining for CD 3 (T cell marker) gives a positive reaction.

surgery. Macroscopically, the cut specimen showed parenchymal hemorrhage and necrosis with a cavitary lesion (Fig. 1F). Microscopically, the specimen showed a cavitary lesion and dilated vessels with surrounding hemorrhagic necrosis that showed angiocentric, pleomorphic, atypical lymphoid cells on hematoxylin and eosin staining (Fig. 1G). Immunohistochemical staining showed positive reactions for cluster of differentiation 3 (CD 3), which is a T cell marker, and for T cell intracytoplasmic antigen (TIA), which is a cytotoxic granule-associated protein, in the pleomorphic atypical lymphoid cells. Staining for CD56, a natural killer/T (NK/T) cell marker, and CD 20, a B cell marker, was negative (Fig. 1H).

Discussion

Peripheral T-cell lymphoma of the unspecified type accounts for 4 to 11% of all non-Hodgkin lymphomas, and pulmonary involvement occurs in 6 to 10% of all patients with PTCL-U (3, 4). The median age of onset for PTCL-U is reported to be in the seventh decade (4, 5). This lymphoma usually takes an aggressive course, with relapses being more common than for B-cell lymphomas. Most patients with PTCL-U present with nodal involvement, but the disease can also involve extranodal sites, including the liver, bone marrow, spleen, gastrointestinal tract and skin (2).

On CT scans, the pulmonary manifestations of lymphoma generally appear as multiple nodules or mass-like areas of consolidation with pleural effusion and

lymph node enlargement being visible in 42% and 35% of patients, respectively, and without ground glass opacities or reticular opacities (6). Yet pulmonary involvement of PTCL-U has rarely been reported. Lee et al. (2) reported that generalized lymphadenopathies were the most common findings for this lymphoma. The CT findings of lymph node involvement in the neck of PTCL patients were reported as central necrosis, an ill-defined margin and heterogeneous enhancement (7). In our case, the lymph nodes lost their defined margins and there was an irregular diffuse infiltration in the mediastinal fat. Mavi et al. (8) reported on the pulmonary involvement of PTCL with multiple cavitary lesions in both lungs. Our case also showed a thick-walled cavitary lesion on the CT images. This cavitary lesion in the lung pathologically represented necrosis, which is a rare finding of lymphoma (9). However, AIDS-related pulmonary lymphoma usually showed multiple nodules that may be cavitated (10).

Pathologically, the peripheral T-cell lymphomas, unspecified (PTCL-U) that do not match one of the defined entities of PTCL show a variety of cellular morphologies, including medium-sized cells, mixed medium and large cells, large cells and lymphoepithelioid cells (2, 3). Immunohistochemical staining of PTCL-U produces positive reactions for CD 3, a T cell marker, and TIA, a cytotoxic granule-associated protein in the pleomorphic atypical lymphoid cells, but there are negative reactions for CD56, a marker for NK/T cells, and CD 20, a B cell marker. Peripheral T-cell lymphoma, unspecified, also

gives a negative reaction for Epstein-Barr virus (EBV), and extranodal NK/T cell marker (3, 10).

In summary, we reported here on a case of peripheral T-cell lymphoma, unspecified, with pulmonary parenchymal involvement that presented as a thick-walled cavitory lesion. Lymphadenopathies with poorly defined margins and a surrounding infiltration in the mediastinal fat may also reflect the severity of the underlying disease, as was noted in this case of peripheral T cell lymphoma, unspecified.

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미분류된 말초성 T세포림프종의 폐의 병발: 증례 보고¹

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말초성 T세포림프종은 드문 림프종의 형태이다. 그 중에서도 분류되지 않은 말초성 T세포림프종이 폐에 생긴 경우는 매우 드문 경우로 영상적 소견은 거의 보고된 것이 없다. 저자들은 비디오 보조 흉강경 수술 (video-assisted thoracoscopic surgery, 이하 VATS)로 병리적으로 확진 된 폐 실질의 미분류된 말초성 T세포림프종의 영상적 소견을 보고하고자 한다.