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Primary pulmonary non hodgkin's T cell lymphoma

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ABSTRACT

A 55-year-old female presented with history of fever, dry cough and right sided chest pain of two months duration. Radiological examination revealed a soft tissue attenuated lesion involving right middle lobe. Immuno histochemical analysis leads to the diagnosis of Non Hodgkin's T-cell Lymphoma. The rarity of this disorder and its good clinical and radiological response to chemotherapy prompted us to report this case

Key-words: Lymphoma, Lung Mass, Lung Neoplasm's, Pulmonary Lymphoma, Primary pulmonary lymphoma, Non Hodgkin's Lymphoma,

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Introduction:

Primary pulmonary lymphoma is defined as clonal lymphoid proliferation affecting one or both lungs (parenchyma and/or bronchi) in a patient with no detectable extrapulmonary involvement at diagnosis or during the subsequent 3 months.[1] This is very rare and represent 3-4% of extranodal, less than 1% of non-Hodgkin's lymphoma and only 0.5-1% of primary pulmonary malignancies.[2] Fifty -eight to 87% of cases of this extremely uncommon disease are low-grade B-cell lymphomas and 11-19% are high-grade or large B-cell lymphomas.[3] Non B-cell lymphoma that is ,T – cell and natural killer (NK) cell lymphomas involving the lung parenchyma are rarely reported and the true incidence is unknown.[3] Here we report a case of T – cell primary pulmonary lymphoma in a 55-year-old female who presented to us with lung mass.

Case History:

A 55-year-old non-smoker female was admitted to pulmonary medicine department with complaints of fever, dry cough and right sided chest pain of two months duration. She had normal haematological and biochemical parameters. Her admission chest radiograph showed a homogeneous mass shadow in the right middle and lower zones [Figure 1]. As chest radiograph was inconclusive a computed tomography (CT) of thorax was done that revealed a large lobulated soft tissue attenuated lesion measuring 10×9.5×8 cm in the right middle lobe with necrosis [Figure 2]. There was no mediastinal or hilar lymph adenopathy. Her sputum was negative for both acid fast bacilli as well as for malignant cells. Diagnostic bronchoscopy was within normal limits, bronchoalveolar lavage was negative for acid fast bacilli and malignant cells and transbronchial lung biopsy was inconclusive. Finally, a CT guided transthoracic needle biopsy of the mass lesion was performed. The histologic examination of the biopsy specimen showed tumour cells arranged in sheets with hyperchromatic nuclei with minimal cytoplasm and high nucleo-cytoplasmic ratio [Figure 3]. Immunohistochemical staining showed tumour cell positivity for CD3 [Figure 4a] and LCA [Figure 4b], negativity for CD20, CD30 and CD56. As CD3 is a T-cell marker (CD20 and CD56 are markers of B and NK cells, respectively) the present malignant lymphoma belongs to the T-cell lineage. So, the final

pathologic diagnosis was peripheral T-cell lymphoma. We intensely searched for lymphoma at other sites and even the bone marrow study was performed but, both of these were normal. Patient was started on systemic chemotherapy (CHOP regimen) and after four cycles of chemotherapy patient showed good clinical and radiological improvement [Figure 5]. Currently she is under our regular follow up.

Discussion:

Malignant lymphomas may involve the lung in three ways: by haematogenous dissemination of non-Hodgkin's lymphoma or Hodgkin's disease, by contiguous invasion from a hilar or mediastinal site of nodal lymphoma and by primary pulmonary involvement.[3] The majority of the non-Hodgkin's lymphoma that originate in the lung are of B-cell lineage. The World Health Organization has divided peripheral T-cell lymphomas into two main categories: precursor T-cell neoplasms, which include precursor T-lymphoblastic lymphoma/ leukemia and peripheral T-cell neoplasm.[4] There is usually no sex predilection and the patient's age ranges from second to ninth decade of life. About half of these patients are asymptomatic at presentation. If symptoms are present, usually these are non-specific with slight predominance of respiratory complaints such as cough, dyspnoea, chest pain and hemoptysis.[3] The disease is most often diagnosed on radiological screening. The roentgenographic appearance of pulmonary lymphoma is usually as an alveolar mass or infiltrate with ill defined margins and air bronchograms.[5] For most of the cases diagnosis is made by surgical intervention either by thoracotomty or video-assisted thoracoscopic surgery, but in our case we were able to reach a diagnosis by transthoracic needle biopsy. The treatment regimens for the subtypes of peripheral T-cell lymphoma include CHOP (cyclophosphamide, doxorubicin, vincristine and prednisone) or EPOCH (etoposide added to CHOP) based systemic chemotherapy. The prognosis of peripheral T-cell lymphoma is poor compared to B-cell lymphoma[6] and the patients usually succumb to life threatening complications that include infections and hypercalcemia[7]. Our case was very unique as it was peripheral T-cell non Hodgkin's lymphoma presenting as a lung mass with central necrosis. There was no disease involvement at any other site on the detailed work up and the patient showed good clinical and radiological response to chemotherapy probably because of early diagnosis of disease.

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Figure 1: Initial chest radiograph showing homogeneous opacity in the right middle and lower zone (arrow).

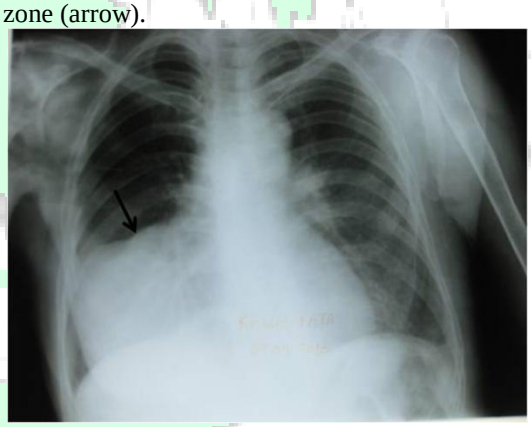


Figure2: Computed tomography showing soft tissue attenuated lesion in the right middle lobe (black arrow) measuring 10×9.5×8 cm with necrosis (white arrow).

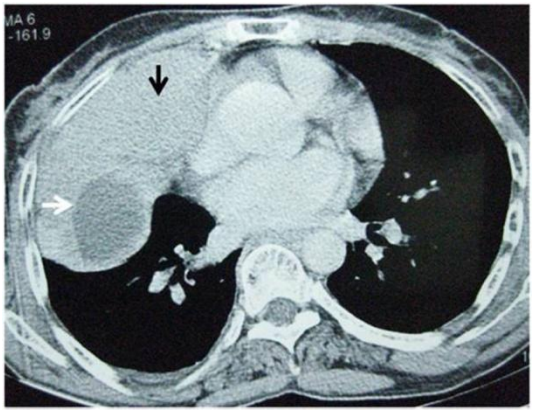


Figure 3: Photomicrograph of percutaneous trans thoracic needle biopsy of mass lesion showing round cell tumour in sheets with moderate degree of nuclear pleomorphism. (Hematoxylin and Eosin ×200).

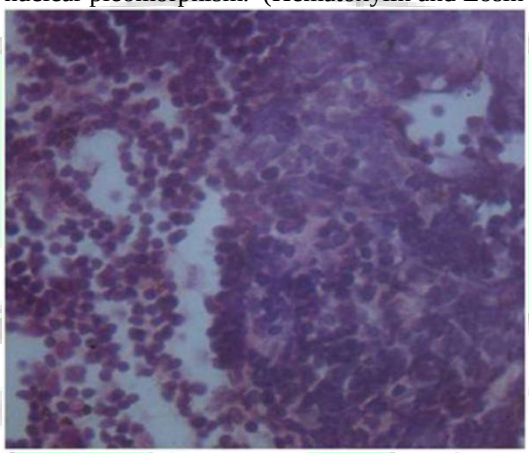


Figure 4: Immunohistochemical staining of tumour cells showing positivity for CD 3 (a) and LCA (b) (Hematoxylin and eosin ×100).

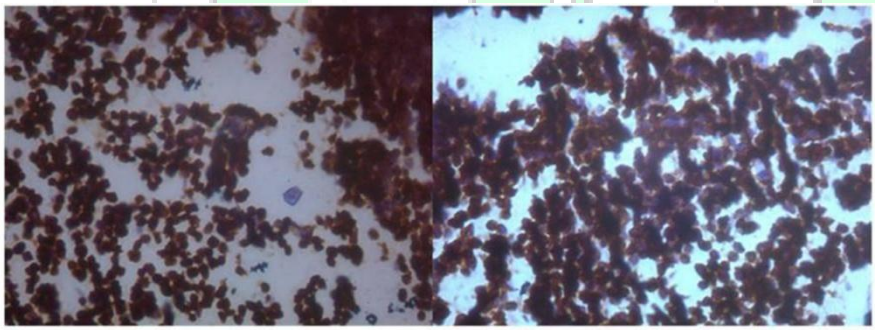
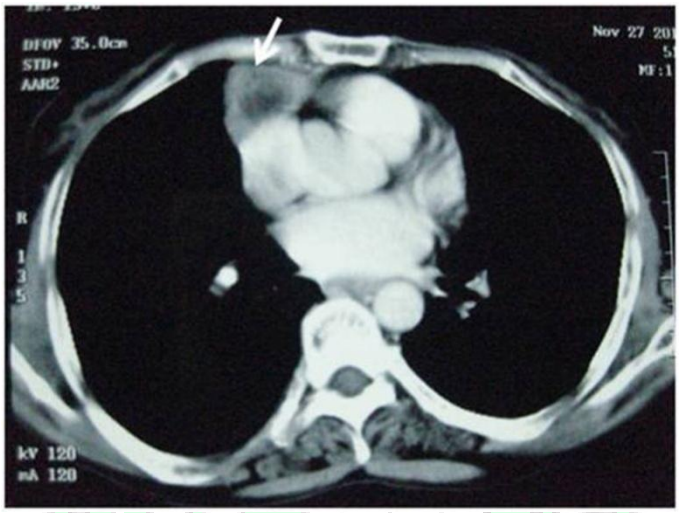


Figure 5: Computed tomography obtained after four cycles of chemotherapy showing radiological decrease in size of mass lesion (arrows).



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