Hemepath Case 34: 21-Year-Old Male

HISTORY

A 21-year-old male presents with a 1-week history of intermittent chest pain and shortness of breath. Several times in the past week, he has woken up in the middle of the night drenched in sweat. He has not weighed himself recently, but notices that his favorite jeans seem loose compared to before.

On examination, the patient appears weak and pale. A petechial rash is noted on his trunk. Several large, non-tender, mobile lymph nodes are palpated in the axillary region. There is a slight reduction in breath sounds in all lung fields on respiratory examination. Cardiovascular examination yields no significant findings except for mild tachycardia. The spleen is noted to be firm and 7 cm below the left costal margin.

Chest x-ray reveals a mediastinal mass of 7 cm causing partial obstruction of the trachea.

CBC

Hgb (g/L)	Low
MCV	N
Reticulocyte Count	Low
WBC	Low
Plt	Low

DESCRIPTION OF SLIDE

Lymph Node Biopsy

The lymph node architecture is completely effaced and replaced by sheets of small cells with irregular nuclear contours and fine (i.e. pale, “see-through”) chromatin. There is also abundant mitotic activity. There is very little normal lymph node remaining.

*** To see the slide annotations in Imagescope, click on VIEW, then ANNOTATIONS, and then on the "eye" icon adjacent to the word "Layers". In the “Layer Attributes” box, a brief description of the annotations is provided. You may also click on individual layer region (e.g. region 1) in the “Layer Regions” box to locate each annotation – this is especially helpful in identifying annotations when the slide is not zoomed in. ***

MORPHOLOGICAL DIAGNOSIS

Lymphoblastic lymphoma

DISCUSSION

Lymphoblastic lymphoma is a type of non-Hodgkin lymphoma in which the malignant cells are lymphoblasts. The majority of tumors exhibits a T-cell phenotype. Due to the similarities in genetic, immunophenotypic, and morphologic characteristics, lymphoblastic lymphoma is essentially the same disease process as acute lymphoblastic leukemia (ALL), although the latter is more commonly a B-cell process.

Most patients present when the malignancy is already in an advanced stage. They frequently complain of constitutional symptoms, as well as dyspnea/chest pain from obstruction of the trachea or vena cava by a mediastinal mass. Peripheral lymphadenopathy and signs of pancytopenia are evident in this patient; the latter implies that the bone marrow is likely involved with tumor, since nodal involvement would not usually cause pancytopenia.

In patients with *both* lymph node and marrow involvement, it can be somewhat arbitrary whether they are labeled ALL with nodal involvement, or lymphoblastic lymphoma with marrow infiltration.