Hemepath Case 39: 62-Year-Old Female

HISTORY

A 62-year-old female presents with chronic fatigue and an increased susceptibility to infections. She has lost 10 pounds in the past month and experiences drenching night sweats several times per week. Physical examination reveals large, rubbery lymph nodes in the submandibular, cervical, and inguinal areas, as well as hepatosplenomegaly.

CBC

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

DESCRIPTION OF SLIDE

Peripheral Blood Smear

The peripheral blood smear shows marked hyperleukocytosis. Cells (see circles) are small to medium in size with variable irregular nuclear contour. Some nuclei show distinct cleavage (see arrows). Nuclear chromatin are somewhat fine, and nucleoli are variably prominent. Cells also have limited agranular cytoplasm.

RBC and platelet morphology are unremarkable, although platelet number is severely reduced.

*** 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

Hyperleukocytosis

DISCUSSION

This is actually a case of peripheralized follicular lymphoma (a type of non-Hodgkin lymphoma characterized by the growth of neoplastic B-cell clones in a follicular or nodular pattern within affected lymph nodes). Follicular lymphoma only rarely involves

the peripheral blood; when it does, cells may have a cleaved or “buttock-cell” appearance.

The most common cytogenetic abnormality seen in follicular lymphoma is an acquired translocation between chromosomes 14 and 18. Resultant overexpression of the bcl-2 proto-oncogene leads to excess production of bcl-2 proteins and inhibition of normal cellular apoptosis. Patients with follicular lymphoma usually present in an advanced stage, with constitutional symptoms and diffuse lymphadenopathy, pancytopenia, and hepatosplenomegaly.

Based solely on the history and peripheral smear, it would be impossible to make a diagnosis of peripheralized follicular lymphoma. In fact, many of the cells resemble blasts, so acute lymphoblastic leukemia may be more likely. Only through flow cytometry and other special tests (such as cytogenetics) is a diagnosis of peripheralized lymphoma possible.