

Pathology Review
Chapter 13: Lymph Node Pathology

UPDATE: December 2014

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50. Describe the cytogenetic criteria of childhood onset B lymphoblastic leukemia/lymphoma that indicate good, intermediate, and poor prognoses.

- Excellent and good prognosis:
 - Hyperdiploidy 53-59 chromosomes.
 - Trisomies of chromosomes +4, +10, +17.
 - t(12;21).
- Intermediate prognosis:
 - Hyperdiploidy with 47-50 chromosomes.
 - t(1;19).
- Poor prognosis:
 - Near triploidy or near tetraploidy.
 - Presence of MLL gene aberrations (chromosome 11q23).
 - Deletion of 9p.
 - Postremission: detected additional clonal aberrations/evolution not present at diagnosis.
 - t(9;21) BCR-ABL translocation.

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52. In a tabulated form, compare and contrast clinical, morphological, immunohistochemical (IHC), and genetic features of the CD5 positive mature B-cell neoplasms that may present with splenomegaly: CLL/SLL, mantle cell lymphoma (MCL), and classic hairy cell leukemia (HCL).

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Features	CLL/SLL	MCL	HCL
Clinical		<ul style="list-style-type: none"> • May have an aggressive course. • May present with: <ul style="list-style-type: none"> - Lymphadenopathy. - Splenomegaly. - Lymphocytosis. • BM involvement — may be present. 	<ul style="list-style-type: none"> • Indolent/may be curable. • May present with: <ul style="list-style-type: none"> - Splenomegaly. - Low degree of lymphocytosis. - Monocytopenia. • BM involvement — always present.
Morphologic	<ul style="list-style-type: none"> • Monomorphous infiltrate of small sized lymphocytes. • Proliferation centers. 	<ul style="list-style-type: none"> • Centrocyte-like infiltrates of peripheral blood/lymph nodes, bone marrow. 	<ul style="list-style-type: none"> • Small in size lymphocytes with bean shaped nuclei and abundant cytoplasm with “hairy” projections.
IHC	<ul style="list-style-type: none"> • CD20/CD5/bcl-2: positive. • CD23/CD43: variable. • Bcl-6/TRAP: negative. • Cyclin D1: negative. (Pitfall: expression in proliferation centers may be present.) 	<ul style="list-style-type: none"> • CD20/CD5/bcl-2: positive. • CD23/CD43: negative. • Bcl-6/MUM-1/TRAP: negative. • Cyclin D1: mostly positive. 	<ul style="list-style-type: none"> • CD20/CD11c/CD103/CD25/DBA.44/TRAP: positive. • CD5: negative. • Cyclin D1: negative.
Genetic	<ul style="list-style-type: none"> • t(11;14): negative. • del 13q: 50%. • Trisomy chromosome 12: 20%. 	<ul style="list-style-type: none"> • t(11;14): positive. 	<ul style="list-style-type: none"> • t(11;14): negative. • BRAFV600E

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59. Other than SMZL, what other hematolymphoid neoplasms may preferentially involve the spleen?

- Hairy cell leukemia, classic and variant types.
- Mantle cell lymphoma.
- Splenic diffuse red pulp small B-cell lymphoma.
- Chronic myeloproliferative neoplasms — particularly chronic myelogenous leukemia.
- **hepatosplenic T-cell lymphoma.**

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77. T-cell lymphoblastic leukemia/lymphoma often presents as a mediastinal mass. What is the differential diagnosis of a mediastinal mass?

- Thymic lesions:
 - Hyperplastic thymus.
 - Thymoma.
 - Thymic carcinoma.
- Hodgkin lymphoma.
- Germ cell tumor.
- Metastases.
- **Primary mediastinal large B-cell lymphoma.**