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Proliferative Blood Disorders

Lymphoid

Myeloid



Hints for Vignettes/Images

Hints for Answers (Prognosis, Possible Tx, Progressions)

Chronic Myeloid Leukemia
Neutrophilia w left-shift. Phili Chrm BCR-ABL t(9;22)
JAK2 mut
Erythromelalgia. Massive splenomegaly, tear-drop & nucleated RBCs.
Bleeding, thrombosis. Megakaryocytes/platelets ↑
Erythrocytosis. Aquagenic pruritis. ↓ EPO. JAK2V617F

Acute Myeloid Leukemia
Myeloblasts ≥20% in blood OR bone marrow
Elderly pts, with Hx of MPD, MDS, radiation
Gingival hypertrophy
t(15;17) PML-RARA fusion gene. Myeloperoxidase+. Auer rods.
t(8;21) Favorable prognosis
inv(16)
(v;11q23)

Hodgkin
Reed Sternberg B Sx CD30+CD15+ Bimodal Age
Male
Broad bands of collagenous/fibrous tissue in nodules.
RS cells in sea of small lymphocytes.
Immunocompromised pt. Diffuse, RS cells + normal T cells.
Classic RS cells with fine fibrous bands, fibroblasts. Diffuse.
L&H aka "Popcorn cells." CD20+CD45(LCA)+. CD15-CD30-.

Non-Hodgkin
Pseudofollicles CD20+CD23+CD5+. CLL: smudge cells. SLL: Small round cells. ZAP-90+ is bad. ~Richter transformation~> DLBCL
Variable Nodular CD20+CD5+ t(11;14) Cyclin D1, IgH. GI tract: Lymphoid polyposis - polyps cover entire tract. Aggressive but incurable. SCT if young.
Nodular CD20+CD10+Bcl6+Bcl2+ t(14;18) IgH, Bcl2. Wax/wane adenopathy. Grade 1 = indolent; 3B = aggressive, curable >15 large cells/hpf
Nodular CD20+ t(11;18). Gastritis/Helicobacter, Sjogren's. Mucosal mass(es). aka MALT (mucosa-associated lymphoid tissue) lymphoma.
Diffuse CD20+CD10+Bcl6+Ki67+ t(8;14) c-myc, IgH. Starry sky. Big blue bubbly blasts. Endemic: Africa, EBV, jaw. Sporadic: abdomen. CNS Tx.
Diffuse CD20+Variable+. Altered Bcl-2 and Bcl-6. Mediastinal mass -> SVC syndrome, tamponade. CD10+Bcl6+ (GCB) >> MUM+ (ABC) form.
CD20+CD25+CD103+CD11c+. Cells w/ hair-like projections, "fried egg." Massive splenomegaly, pancytopenia. Marrow fibrosis.

Myeloma
Serum Protein | Plasma cells in BM | CRAB Sx
<30g/L <10% No
>30g/L >10% No hyperCalcemia
>30g/L >10% Yes Renal failure
Anemia
Bone lesions, lytic

Monoclonal Immunoglobulin Deposition Diseases
Beta sheets -> Apple-green w/ Congo red stain. AL amyloid.
Not beta sheets. (Yes, that's all we learned.)
Blurred vision, Raynaud's. Cryoglobulinemia. IgM M spike.
If extraosseous, usually found in upper respiratory tract.

B-ALL (Acute Lymphoblastic Leukemia/Lymphoma)
TdT+ CD10+ Children. ↑ Lymphoblasts in blood.

T-ALL (Acute Lymphoblastic Leukemia/Lymphoma)
TdT+. Mediastinal mass. Children. ↑ Lymphoblasts in blood.
Japan/Tropics. HTLV-1+. Flower cells. 🌸
Atypical CD4+ "cerebriform" nuclei. Skin patches/plaques.
Diffuse. Variable cytology. CD3+CD4+.
Young male. Large cells, pleomorphic nuclei. CD30+ALK+.

Myeloma
Blood smear: Rouleaux formation.
Serum protein electrophoresis: M spike (gamma ↑)
Immunoglobulins ↑: IgG, IgA
Most common bone lesion: vertebral (-> back pain)
Bone Marrow: Dutcher, Russell bodies; Mott, flame cells

Monoclonal Immunoglobulin Deposition Diseases
Clinical features: nephrotic proteinuria, hepatomegaly, bleeding, cardiomyopathy, glossomegaly, peripheral neuropathy.

B-ALL (Acute Lymphoblastic Leukemia/Lymphoma)
Hyperviscosity syndrome. Marrow: plasmacytoid, lymphoid cells.
If skeletal, more likely (55%) to progress ~> multiple myeloma.
~> May spread to CNS, testes.
Tx: Induction, Consolidation, Maintenance including targeting CNS
Relapsed ALL Tx options include BiTE, CAR-T, etc.

Adult T-Cell Leukemia/Lymphoma
Expect hypercalcemia, lytic bone lesions, opportunistic infections.

Mycosis Fungoides/Sezary Syndrome
Beware deadly opportunistic infections. ~> Sezary (Leukemia)

Peripheral T Cell Lymphoma
Expect lymphadenopathy, fever, rash, pancytopenia.

Primary Systemic ALK+ Anaplastic Large Cell Lymphoma
Much higher survival than other T-Cell lymphomas.