

Patient: John Doe

DOB/Gender: xx/xx/xxxx (56 yrs) - Male

MRN/ID: 123456

Provider: Jane Doe, M.D.

Account: Pathology Associates

Phone: 800-123-4567 Fax: 800-123-4444



4 Science Park, 3<sup>rd</sup> Floor, New Haven, CT 06511  
Phone: 203-787-7888 Fax: 203-901-1289  
www.precipiodx.com

Case No: P11-04121

Collected: xx/xx/xx

Received: xx/xx/xx

Reported: xx/xx/xx

Alert Status: Routine

Report Status: Final

Report Category: **Abnormal**

**Clinical information:** Diagnosed with Waldenstrom's macroglobulinemia. Bone marrow done to evaluate pancytopenia. IgM not raised above limit.

**Received information:** 1 H&E-stained slide & 15 unstained slides



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#### DIAGNOSIS:

Embedded tissue (#S14-07265), bone marrow, trephine biopsy: Hypercellular bone marrow with atypical CD8+ T-cell infiltrate and absent erythropoiesis, see comment.

#### COMMENT:

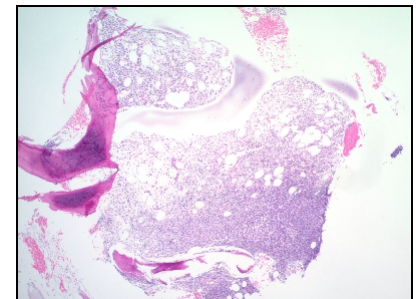
The bone marrow displays an atypical lymphoid infiltrate which invades the bone marrow in both an interstitial and nodular pattern. Stains for MPO demonstrate good myelopoiesis, but stain for CD71 demonstrates absent erythropoiesis consistent with the diagnosis of pure red cell aplasia. Histologic features characteristic of Lymphoplasmacytic Lymphoma are not appreciated, and CD138 stains rare scattered plasma cells.

In contrast, the atypical lymphoid infiltrate is principally comprised of CD3+, CD8+, CD56- T-cells with a smaller proportion of accompanying CD4+ T-cells in the nodular aggregates. The interstitial T-cell infiltrate is almost entirely comprised of CD8+ T-cells. Pax5+ B-cells are also present in the nodular lymphocytic infiltrate, and may represent residual non-Hodgkin B-cell lymphoma, but is less concerning as an etiology that could morphologically account for the patient's reported cytopenias.

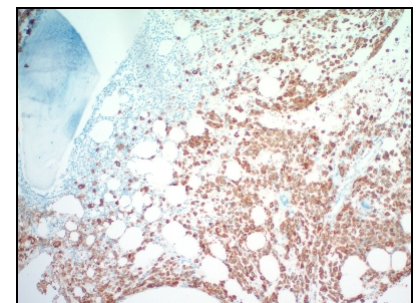
In summation, the bone marrow exhibits an atypical T-cell infiltrate mainly comprised of CD8+ T-cells in both an interstitial and densely nodular pattern, with a complete absence of erythropoietic islands but preservation of myelopoiesis. These features are most suggestive of a pure red cell aplasia secondary to an atypical drug reaction inducing a cytotoxic T-cell response. Other etiologies to be ruled out include nutritional deficiencies (iron, B12, folate, ethanol intake), thymoma, viral infections (parvo b19), auto-immune disease, and myelotoxic therapy. In the absence of the above etiologies, a presumptive diagnosis of myelodysplastic syndrome (refractory anemia over 6 months) may be considered.

Case discussed with Dr. Doe by Dr. Braddock.

Electronically Signed By: Demetrios Braddock, MD, PhD



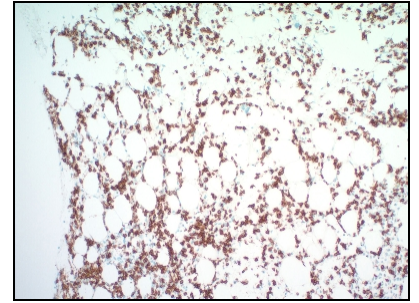
Nodular and Diffuse Lymphocytosis



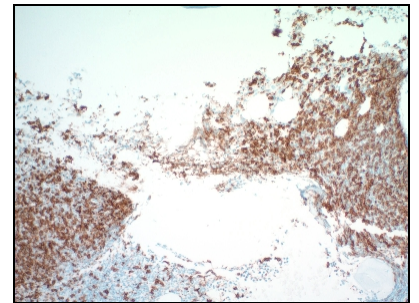
Well Developed Myelopoiesis

**IMMUNOHISTOCHEMISTRY RESULT:**

Stain	Result
CD4	See microscopic description
CD8	See microscopic description
CD10	Technically unsatisfactory.
CD5	Absent in B-cells.
CD56	Absent in lymphocytes
BCL-1	Absent in lymphocytes
CD3	See microscopic description
CD34	No increase in blasts
CD71	Absent erythropoiesis
CD138	Rare single plasma cells
Kappa by ISH	Rare polyclonal plasma cells
Lambda by ISH	Rare polyclonal plasma cells
MPO	Good myelopoiesis
PAX-5	See microscopic description



**CD8+ T-cell Infiltrate: Interstitial**



**CD8+ T-cell Infiltrate: Nodular**

**GROSS DESCRIPTION:**

Received on 06/12/2014 from Pathology Associates are 1 H&E-stained and 15 unstained slides labeled S14-07265-A1.

Disclaimer: The adequacy of staining is verified by the appropriate positive & negative controls. The reagents used for these assays are analyte specific reagents (ASR). Their performance characteristics have been validated by Precipio Diagnostics, LLC, New Haven, CT. They have not been reviewed by the FDA. The FDA has deemed that such approval is unwarranted. These assays are for clinical use and should not be viewed as experimental or "research use only".