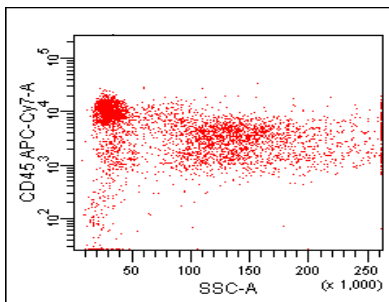


<b>Patient Name:</b>		<b>Ordering Physician:</b>	
<b>Sex:</b>	M	<b>Account Number:</b>	
<b>Date of Birth:</b>	2/24/1933	<b>Client:</b>	
<b>Patient ID#:</b>		<b>Client Address:</b>	
<b>Specimen:</b>	Bone Marrow	<b>Telephone #:</b>	
<b>Collected:</b>	1/19/2008	<b>Accession #:</b>	
<b>Received:</b>	1/21/2008 8:54:00 AM		
<b>Reported:</b>	1/30/2008 6:05:17 PM		

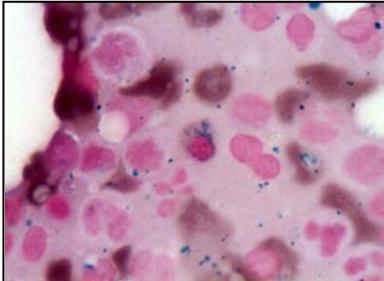


**CLINICAL DATA:**

74-year-old male with pancytopenia and a history of prostate cancer. Rule out a myelodysplastic syndrome and a myeloproliferative syndrome. Accompanying CBC report dated 1/12/08, indicates WBC 1.9 K/uL, RBC 3.54 M/uL, Hgb 11.2 g/dL, HCT 32.8%, MCV 93 fL, MCH 31.0 pg, MCHC 34.0 g/dL, RDW 21.2%, platelets 169 K/uL with a differential count of neutrophils 49.1%, lymphocytes 42.3%, monocytes 8.0%, eosinophils 0.3%, basophils 0.3%.



**Figure 1: Flow cytometry gating scheme, CD45 vs. SSC**



**Figure 2: Prussian blue stain showing ringed sideroblasts**



**Figure 3: Karyotype**

**FINAL DIAGNOSIS: HYPERCELLULAR MARROW FOR AGE WITH SLIGHTLY INCREASED BLASTS (6%) AND DYSPHOIESIS, CONSISTENT WITH A MYELOYDYSPLASTIC SYNDROME. PLEASE SEE COMMENTS.**

**Interpretation:**

**Morphology:**

- Bone marrow; core biopsy, clot sections, aspirate smears, and peripheral blood smears:
- Hypercellular marrow for age (70%) with slightly increased blasts (6%) and dyspoiesis, consistent with a myelodysplastic syndrome.
  - Trilineage hematopoiesis with mild erythroid hyperplasia (M:E ratio = 1.5:1).
  - Marrow with adequate storage iron and increased ringed sideroblasts (20%).
  - No morphologic evidence of metastatic malignancy.
  - Peripheral blood with leukopenia and anemia. (See report dated 01/23/08)

**Flow Cytometry:**

Immunophenotypic analysis demonstrates 5% myeloid blasts, suggestive of a myelodysplastic syndrome. (See report dated 01/23/08)

**Cytogenetics/FISH:**

A total of 21 metaphase spreads were analyzed by G-banding. A clonal abnormality with trisomy-21 was found in 6 cells. Ten cells have a normal 46,XY male karyotype while 5 cells showed random loss of different chromosomes. Trisomy-21 is typical of AML/MDS and B-cell ALL and reported to be a poor prognostic factor.

MDS/MPD FISH showed NORMAL results. FISH analysis with the MPD panel probes [5q31, 7q31/7cen, 8 centromere, 20q12 and for the Ph' chromosome] were each applied to 200 interphase nuclei. Only cells with two signals were identified which ruled out numerical aberrations of 5q, 7q, 8, 20q12 and a Ph' translocation.

Cytogenetic testing was performed at the University of Rochester Medical Center.

**Comments:**

The bone marrow demonstrates hypercellular marrow for age with mildly increased blasts. Dysmegakaryopoiesis and dyserythropoiesis are present. Ringed sideroblasts are increased. Flow cytometric analysis demonstrates an increased population of myeloid blasts expressing dim CD45, CD13, CD33, CD34, CD117, and HLA-DR. These findings are consistent with a myelodysplastic syndrome and would be best classified as refractory anemia with excess blasts, type 1 (RAEB-1). Cytogenetic analysis reveals an abnormal male karyotype with trisomy 21, which supports the diagnosis. FISH analyses with probes specific for MDS are within normal limits. Clinical correlation is recommended.

*Bashar Dabbas*

Electronically signed by:   
**Bashar Dabbas, M.D.**  
 Senior Hematopathologist

1/30/2008  
 Date