PRECIPIO EXPECT MORE
203-787-1717
203-901-1289

COMPREHENSIVE REPORT

Patient: John Doe
DOB/Gender: 10/10/35 (83 yrs) - Male
Patient ID/MRN: 123456
Date Collected: 04/12/2019

Case# /Status: X19-00322 - Final

Report Category:
Neoplastic

Provider: John Doe, M.D.
Hematology Oncology Associates
Tel: 800-123-4567
Fax: 800-765-4321

DIAGNOSIS:

Pancytopenia with abnormal clone detected by FISH (see comment).

COMMENT

The peripheral blood indices reveal pancytopenia with macrocytic anemia, confirmed on morphologic examination. Although there is no morphologic evidence of dyspoiesis or circulating blasts, the finding of deletion of chromosomes 7 and 20q by FISH are suspicious for a myeloid neoplasm, as these abnormalities are common findings in myelodysplastic syndrome and acute leukemia. A bone marrow core biopsy and aspirate smear is recommended as clinically indicated and feasible. Correlation with clinical and other laboratory findings (i.e. B12, folate, serum copper) is required for complete interpretation.

COMPONENT DIAGNOSES

Peripheral Smear: Pancytopenia
Flow Cytometry: Normal peripheral blood flow cytometry (see comment)
FISH: Abnormal clone with (1) Monosomy 7 in 9% of cells analyzed and (2) deletion 20q12 (D20S108) in 6% of cells analyzed with probes specific for recurrent abnormalities in Myelodysplastic Syndrome (MDS).

CLINICAL DATA

Pancytopenia

Received CBC, reported on 3/6/2019: WBC 0.5; RBC 4.36; HGB 12.7; HCT 39.0; MCV 89.4; MCH 29.0; MCHC 32.4; RDW 12.7; PLT 183; MPV 9.6; LYM 73.8%; MON 0.9%; NEU 16.8%; EOS 6.5%; BAS 1.7% (NP = not provided)

Electronically Signed By: Frank Bauer, MD (04/15/19 11:50)

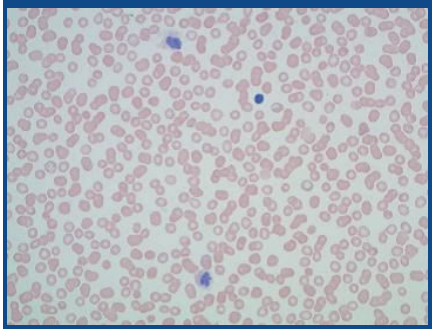
DIAGNOSIS:

Peripheral blood, smears: Pancytopenia

SMEAR REVIEW

The peripheral blood indices reveal a macrocytic anemia, leukopenia and mild thrombocytopenia, confirmed on morphologic examination. There is moderate anisocytosis with minimal poikilocytosis, and mild polychromasia. nRBCs are not identified. There are decreased numbers of white blood cells with normal differential, without atypical or dyspoietic forms. Circulating blasts are not identified. Platelets appear mildly decreased with normal granulation and appearance.

Peripheral Blood Smear



Electronically Signed By: Frank Bauer, MD (04/13/19 11:20)

DIAGNOSIS:

Peripheral blood: Normal peripheral blood flow cytometry (see comment)

COMMENT

Diagnostic features of involvement by an acute leukemia or paroxysmal nocturnal hemoglobinuria are not seen by flow cytometry. If clinically indicated, a myelodysplastic syndrome can be best evaluated by morphologic and cytogenetic analysis of a bone marrow core and aspirate smear. Correlation with clinical and laboratory findings is advised.

INTERPRETATION

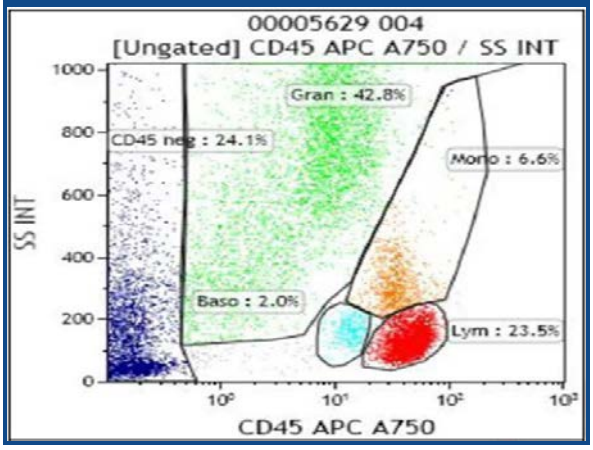
Flow cytometric examination of the peripheral blood smear reveals no circulating blasts. No aberrant myeloid antigen expression is identified. The lymphocytes (24%) include 1% polyclonal B-cells, 90% mature T-cells with a slightly inverted CD4/CD8 ratio of 0.7, and 8% natural killer (NK) cells.

PNH analysis was performed on the leukocytes using CD14 and CD33 to differentiate the granulocytes and monocytes. Glycophorin (CD235a) was used to differentiate red blood cells (RBC). No lack of expression on CD55 or CD59 was observed on all cells analyzed as well as no lack of expression of FLAER on the leukocytes. No immunophenotypic evidence of PNH is observed.

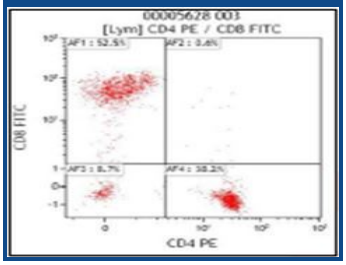
RESULT

Analysis Time: 04/12/19 13:47 Viability: 93% (Normal > 80%) Specimen: PB, Lavender-top tube

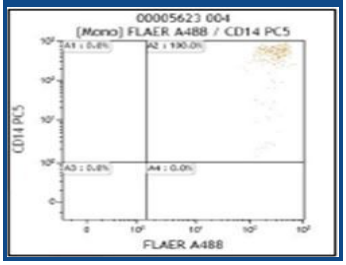
Flow Differential



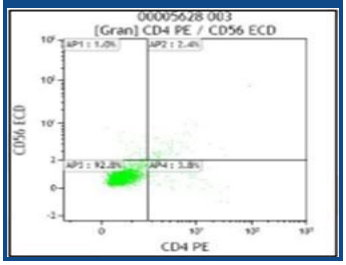
Inverted CD4/CD8 Ratio



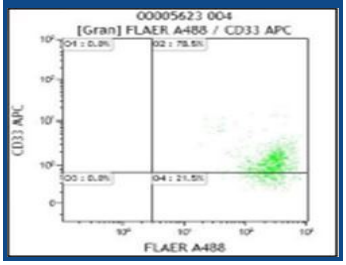
FLAER+ Monocytes



CD56 Granulocytes



FLAER+ Granulocytes



Flow Cytometry Differential

Lymphocytes:	24%
Monocytes:	7%
Granulocytes:	43%
Basophils:	2%
Non-Lysed RBC:	24%

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Granulocytes

Marker	%
CD4	4
CD10	71
CD11b	99
CD13	94
CD14	77
CD15	99
CD16	92
CD19	44
CD33	39
CD34	3
CD45	100
CD55	96
CD56	1
CD59	99
CD61	49
CD64	6
CD71	70
CD117	2
FLAER	100
HLA-DR	2

Lymphocytes

Marker	%
CD2	96
CD3	90
CD4	38
CD5	90
CD7	97
CD8	53
CD10	<1
CD19	1
CD20	1
CD38	<1
CD45	100
CD56	8
sKappa	<1
sLambda	<1

Monocytes

Marker	%
CD45	100
CD55	100
CD59	97
FLAER	100

Red Blood Cells

Marker	%
CD55	99
CD59	100
CD235a	72

Electronically Signed By: Frank Bauer, MD (04/13/19 11:21)

Disclaimer: The adequacy of staining is verified by the appropriate positive and negative controls. The reagents used for these assays are analyte specific reagents (ASR). Their performance characteristics have been validated by Precipio, Inc., 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".

DIAGNOSIS:

Peripheral blood: Abnormal clone with (1) Monosomy 7 in 9% of cells analyzed and (2) deletion 20q12 (D20S108) in 6% of cells analyzed with probes specific for recurrent abnormalities in Myelodysplastic Syndrome (MDS).

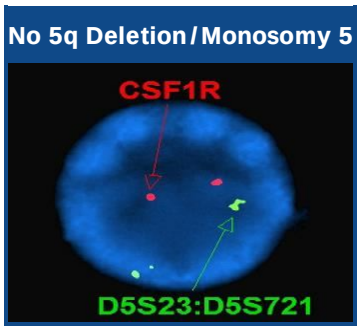
INTERPRETATION

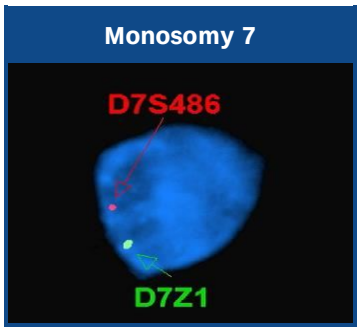
FISH "ISCN": nuc ish (RPN1,MECOMx2)[200],(CSF1Rx2,D5S23:D5S721x2)[200],(D7S486x1,CEP7x1)[18/200],(CEP8x2,D20S108x1)[12/200],(MLLx2)[200],(ETV6x2)[200],(RARAx2)[200],(Tel19p,TEL19q)x2[200]

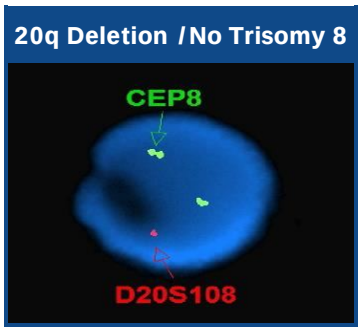
Fluorescence in situ hybridization (FISH) with a panel of probes specific for detection of recurring chromosome abnormalities in MDS was performed on uncultured peripheral blood cells.

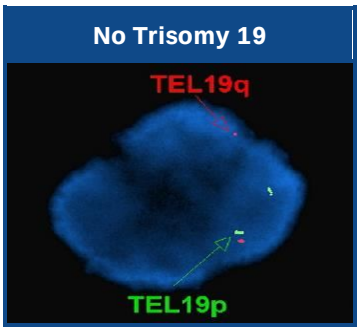
The regions/loci represented in these probe mixes were:

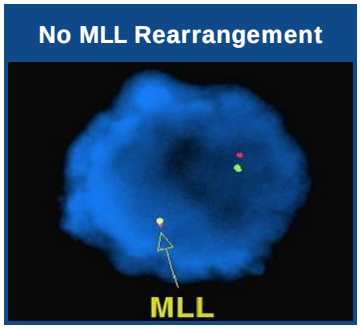
1. RPN1/MECOM dual color probes used to detect copy number/rearrangements of chromosome 3 and 3q21-q26 regions reveal a hybridization pattern within normal limits in 200 analyzed nuclei.
2. CSF1R (5q33~34) and D5S721:D5S23 (5p15.2), used to detect copy number abnormalities/deletion of chromosome 5, reveal a hybridization pattern within normal limits in 200 analyzed nuclei.
3. D7S486 (7q31) and a centromere probe to chromosome 7 (CEP 7), used to detect copy number abnormalities/deletion of chromosome 7, reveal an abnormal hybridization pattern consistent with monosomy 7 in 18 of 200 analyzed nuclei.
4. CEP8 (centromere probe to chromosome 8), used to detect copy number abnormalities of chromosome 8, reveals a hybridization pattern within normal limits in 200 analyzed nuclei.
5. MLL dual color break a part probe used to detect rearrangement/deletion at 11q23 region, reveals a hybridization pattern within normal limits in 200 analyzed nuclei.
6. RARA, used to detect rearrangement /deletion of 17q21.1 region, reveal a hybridization pattern within normal limits in 200 analyzed nuclei.
7. ETV6 dual color break a part probe, used to detect rearrangement/deletion at 12p13.2, reveals a hybridization pattern within normal limits in 200 analyzed nuclei.
8. Tel19p/19q used to detect copy number abnormalities of chromosome 19, reveal a hybridization pattern within normal limits in 200 analyzed nuclei.
9. D20S108 (20q12), used to detect deletion/copy number abnormalities of chromosome 20, reveals an abnormal hybridization pattern consistent with deletion 20q12 in 12 of 200 analyzed nuclei.

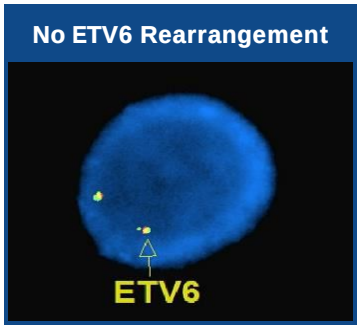


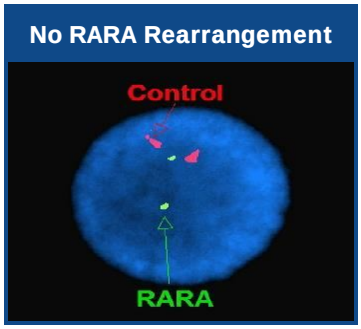


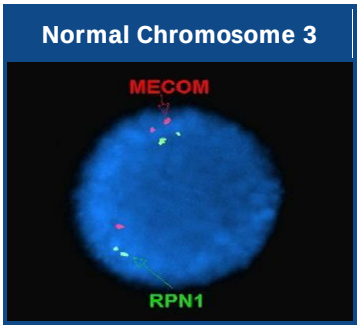












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Patient: John Doe
Case #: X19-00322
Received Information: 2 Green-top tubes, 1 lavender-top tube
Received: 04/12/19 10:37
Reported: 04/15/19 11:51