Translocation t(5;6)(q33-34;q23) in an acute myelomonocytic leukemia patient

Adriana Zamecnikova, Soad Al Bahar, Ramesh Pandita

Kuwait Cancer Control Center, Department of Hematology, Laboratory of Cancer Genetics, Kuwait (AZ, SA, RP)

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Abstract
Case report and literature review on translocation t(5;6)(q33-34;q23) in an acute myelomonocytic leukemia patient.

Clinics

Age and sex
68 years old female patient.

Previous history
No preleukemia, no previous malignancy, no inborn condition of note, no main items.

Organomegaly
No hepatomegaly, no splenomegaly, no enlarged lymph nodes, no central nervous system involvement.

Blood
WBC: 104 X 10^9/l
HB: 7.8g/dl
Platelets: 57 X 10^9/l
Blasts: 84%
Bone marrow: Hypercellular marrow with 87% blasts which were PAS diffuse granular positive and SBB (Sudan Black B) positive.

Cyto-Pathology

Classification
Cytology
Acute myelomonocytic leukemia

Immunophenotype
Positive for CD13, CD15, CD117, CD33, MPO, CD45, HLDR and dim CD34 (27%)

Diagnosis
Acute myelomonocytic leukemia

Survival

Date of diagnosis: 03-2013
Treatment: Chemotherapy (Daunorubicin & Cytarabine combination therapy; consolidation with high dose Ara-C)
Complete remission: no
Treatment related death: no
Relapse: yes
Phenotype at relapse: Acute myelomonocytic leukemia
Status: Lost
Last follow up: 11-2013
Survival: 8 months

Karyotype

Sample: Bone marrow, blood
Culture time: 24h
Banding: G-banding
Results
46,XX,t(5;6)(q33-34;q23)[25]

Karyotype at Relapse
46,XX,t(5;6)(q33-34;q23)[1]/46,XX,t(5;6)(q33-34;q23),t(7;10)(p22;q23)[19]
**Other molecular cytogenetics techniques**
Fluorescence in situ hybridization (FISH) with LSI AML1-ETO, LSI MLL, LSI CBFB/inv(16), LSI EGRI/5q31 (Abbott Molecular, Downers Grove, IL) and XL 6q21/6q23, XL PDGFR, whole chromosome 6 probe Metasystem, Germany).

**Other molecular cytogenetics results**
Normal signal patterns for LSI AML1-ETO, LSI MLL, LSI CBFB/inv(16), LSI EGRI/5q31, XL 6q21/6q23 and XL PDGFR probes.

**Comments**
Chromosomal translocations involving 5q33 and 6q23 have been reported in only one patient with T-ALL and an associated myeloproliferative neoplasm and C6ORF204/PDGFRB fusion (Chmielecki et al 2012).

While in this case, the chromosomal translocation appeared to be morphologically identical to our t(5;6)(q33-34;q23), in our patient PDGFRB (5q32-33) is not rearranged and MYB (6q23) is not translocated to chromosome 5 as in a previously described case.

Due to the availability of tyrosine kinase inhibitors for PDGFRB rearranged disorders, our findings emphasize the importance of FISH in precise characterizing of chromosome rearrangements with 5q33-34 breakpoints, especially in suboptimal preparations.
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Zamecnikova A, et al.

Figure 2. A. Karyotype from blood cell from the time of relapse showing the t(5;6)(q33-34;q23) and a new anomaly t(7;10)(p22;q23). B. Partial karyotypes from blood and bone marrow showing the t(5;6)(q33-34;q23).

References


This article should be referenced as such: