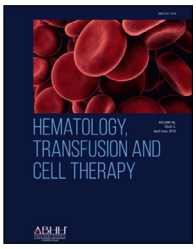
HEMATOLOGY, TRANSFUSION AND CELL THERAPY

www.htct.com.br



Images in Clinical Hematology

Jumping translocation: an unusual cytogenetic finding in myeloid neoplasm

Daniela Borri [a,*], *Larissa Veloso Mendes Ommati* [b], *Elvira Deolinda Rodrigues Velloso* [a,c]

[a] *Hospital Israelita Albert Einstein, São Paulo, SP, Brazil*
[b] *Centro de Hematologia de São Paulo (CHSP), São Paulo, SP, Brazil*
[c] *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo (HC FMUSP), São Paulo, SP, Brazil*

ARTICLE INFO

Article history:
Received 16 March 2021
Accepted 7 June 2021
Available online 14 July 2021

Keywords:
cytogenetic
Jumping translocation
karyotype

Bone marrow karyotype of 86-year-old woman with myelofibrosis evolution from essential thrombocythemia showed unbalanced translocation involving chromosome 1 and acrocentric chromosomes 14, 15 and 22 (Figure 1), configuring the phenomenon of Jumping translocation (JT). Twenty metaphases showed: 46,XX,der(14)t(1;14)(q12;p11.2)[11]/46,XX,der(22)t(1;22)(q12;p11.2)[3]/46,XX,der(15)t(1;15)(q12;p11.2)[2]/46,XX[4].

JT is a rare cytogenetic aberration that occurs when a donor segment chromosome breaks off and merges into two or more receptor chromosomes, resulting in an unbalanced translocation with gain of the donor chromosome

* **Corresponding author at**: Hospital Israelita Albert Einstein, Av. Albert Einstein 627/701, Morumbi, São Paulo, SP, Brazil, CEP: 05652-900.
E-mail address: danborri18@gmail.com (D. Borri).

https://doi.org/10.1016/j.htct.2021.06.001

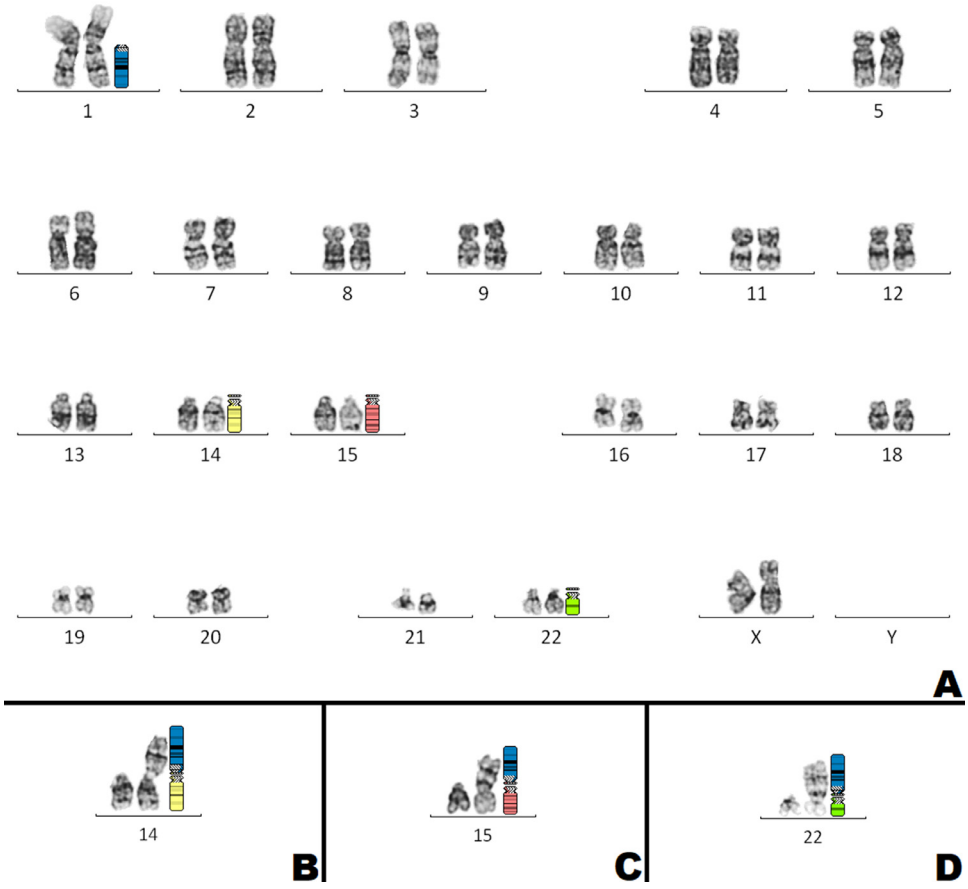


Figure 1 – A-G- banding Karyotype, showing ideogram of 1q in blue, 14q in yellow, 15q in red and 22q in green. B-Partial Karyotype with normal chromosome 14, der(14)t(1;14)(q12;p11.2) and schematic model blue/yellow of der(14). C- Partial Karyotype with normal chromosome 15, der(15)t(1;15)(q12;p11.2) and schematic model blue/red of der(15). D- Partial Karyotype with normal chromosome 22, der(22)t(1;22)(q12;p11.2) and schematic model blue/green of der(22).

segment.[1] This phenomenon shows genetic instability, despite not being associated with other chromosomal abnormalities and is associated with an unfavorable prognosis in myeloid neoplasms.[2] Among the chromosomal gains, the most frequent is the partial trisomy 1q, as in the case described.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

1. Coulture T, Amato K, DiAdamo A, Li P. Jumping Translocation of 1q in Myelodisplastic Syndrome and Acute Myeloid Leukemia: Report of three Cases and Review of Literature. Case Rep Genet. 2018;2018:8296478.
2. Najfeld V, Tripodi J, Scalise A, Silverman LR, Silver RT, Fruchtman S, et al. Jumping translocations of the long arms of chromosome 1 in myeloid malignancies is associated with a high risk of transformation to acute myeloid leukaemia. Br J Haematol. 2010;151(3):288–91.