

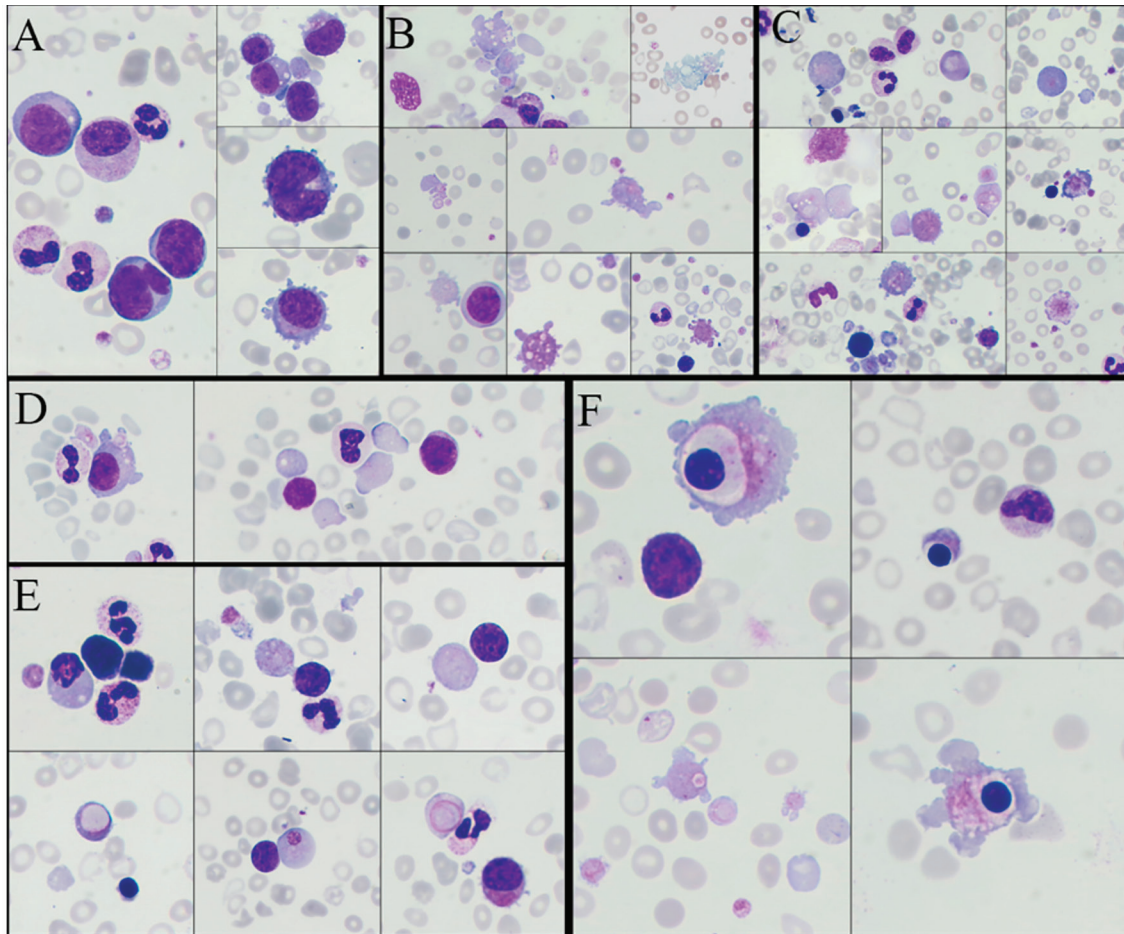
## Unusual Clasmatosis Morphology

### Anormal Klazmatoz Morfolojisi

Antonio La Gioia<sup>1</sup>, Miriam Marsano<sup>2</sup>, Fabiana Fiorini<sup>1</sup>

<sup>1</sup>Docemus Onlus "Theoretical and Practical Training School for Improving Specialty Medicine," Torrevecchia Teatina, Italy

<sup>2</sup>Università degli Studi, School of Specialization in Geriatrics, Bologna, Italy



**Figure 1.** Clasmatosis in peripheral blood. May-Grünwald Giemsa staining, 1000<sup>x</sup> magnification. (A) Circulating blast cells and megakaryocytes/megakaryoblasts. (B, C) Different morphologies of fragments or whole empty cytoplasm. (D, E) Different modes of clasmatosis formation: cytoplasmic fragmentation (D) and nuclear expulsion (E). (F) Cytoplasmic residues of phagocytosis.



Address for Correspondence/Yazışma Adresi: Antonio La Gioia, M.D., Docemus Onlus "Theoretical and Practical Training School for Improving Specialty Medicine," Torrevecchia Teatina, Italy  
Phone : +39 3281186642  
E-mail : ant.lagioia@gmail.com ORCID: orcid.org/0000-0001-5535-703X

Received/Geliş tarihi: July 11, 2023  
Accepted/Kabul tarihi: September 25, 2023



©Copyright 2024 by Turkish Society of Hematology Turkish Journal of Hematology, Published by Galenos Publishing House.  
Licensed under a Creative Commons Attribution-NonCommercial (CC BY-NC-ND) 4.0 International License.

Clasmatosis refers to cytoplasmic fragments in the peripheral blood (PB) or bone marrow [1,2]. We describe clasmatosis of unusual morphology in the PB of an 83-year-old man with primary myelofibrosis diagnosed 2 years earlier according to the following criteria of the World Health Organization (WHO): megakaryocytic atypical hyperproliferation, JAK2-V617F positivity, absence of WHO criteria for other myeloid neoplasms, anemia, and splenomegaly [3].

PB review showed red blood cells with anisopoikilocytosis, dysplastic neutrophilia ( $23.0 \times 10^9/L$ ), and immature granulocytes ( $2.4 \times 10^9/L$ ). Bone marrow aspiration yielded a dry tap. Blast cells, nucleated red blood cells, and micromegakaryocytes/megakaryoblasts were also observed (Figure 1A).

The clasmatosis morphology displayed both regular and irregular contours (Figure 1B) and giant forms without or with internal granules (Figure 1C), sometimes indistinguishable from giant platelets (Figures 1B and 1C).

Small-to-medium clasmatosis originates from cytoplasmic budding and fragmentation (Figure 1D). Clasmatosis also occurred in this case after nuclear extrusion, as seen in the sequence portrayed in Figure 1E: i) the beginning of nuclear exit from the cellular boundary, ii) detachment from the last cytoplasmic ribbon, and iii) complete exit. Afterwards, various cellular remnants could be observed, including naked nuclei and denucleated cytoplasm, sometimes containing the negative mold of the pre-existing nucleus, as well as Cabot-like rings and chromatin fragments.

Whole cytoplasm or fragments were observed after nuclear detachment retaining the contents of the previous phagocytosis (Figure 1E).

**Keywords:** Clasmatosis, Primary myelofibrosis, Peripheral blood review

**Anahtar Sözcükler:** Klazmatoz, Primer miyelofibrozis, Çevresel kan değerlendirmesi

### **Ethics**

**Informed Consent:** According to the Local Ethics Committee, the retrospective nature of this study allowed for a waiver of consent.

### **Authorship Contributions**

Concept: A.L.G., F.F.; Design: A.L.G.; Data Collection or Processing: M.M., F.F.; Analysis or Interpretation: M.M.; Literature Search: M.M.; Writing: A.L.G., F.F.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

### **References**

1. D'Onofrio G, Zini Tanzi G. *Morfologia delle malattie del sangue*. Rome, Verduci Editore, 2013.
2. Bain BJ. Detecting erroneous blood counts. In: Bain BJ (ed). *Blood Cells: A Practical Guide*. Hoboken, Wiley, 2002.
3. Arber DA, Orazi A, Hasserjian R, Thiele J, Borowitz MJ, Le Beau MM, Bloomfield CD, Cazzola M, Vardiman JW. The 2016 revision to the World Health Organization classification of myeloid neoplasms and acute leukemia. *Blood* 2016;127:2391-2405.