

# Massive circulating metastatic cells: a case of carcinocythemia

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We report the case of an 80-year-old woman who presented to the emergency department with worsening chronic dyspnea and cervical adenopathy. Her medical history included chronic lymphocytic leukemia (CLL) treated with Venetoclax and a breast cancer in remission since 6 years.

The whole blood count (white blood cells, 13.5 G/L; hemoglobin, 13 g/dL; platelets, 143 G/L) showed unusual interferences on the WDF scattergram of the XN-series analyzer (Sysmex), with a high fluorescence cell population (**Figure. 1A**) without cytopenia.

The blood smear after May-Grünwald Giemsa staining (original magnification x100 and x1000), showed 30% of discohesive, large, atypical cells with abundant basophilic vacuolated cytoplasm, irregular pseudolobed nuclei, with weak chromatin condensation and blue prominent nucleoli (**Figure. 1B and C**).

The flow cytometry analysis showed the presence of 11% of kappa monotypic B cells with a phenotypic profile with a Matutes score of 5 consistent with the known CCL and no evidence of a circulating phase of large cell lymphoma or blasts.

Altogether, these results ruled out hematological malignancies.

This case points toward a breast cancer recurrence with circulating cancer cells (carcinocytemia) and lymphangitis carcinomatosa. Unfortunately, the patient developed disseminated intravascular coagulation and died shortly thereafter, before additional exploration.

Only few cases of carcinocythemia have been described in the literature<sup>1-3</sup>. The most frequent primary neoplasm associated with carcinocythemia is breast carcinoma. The proportion of circulating metastatic cells vary from single cell to 80% of circulating nucleated cells mimicking myeloid or lymphoid neoplasm<sup>1,3</sup>. It is

associated with poor prognosis and survival with 85% of mortality in the literature series and 34.5% reported cases of carcinocythemia were associated with intravascular coagulation or thrombotic events, leading to death similar to our case<sup>1</sup>.

This rare case of massive circulating metastatic cells highlights the importance of careful differential diagnosis to make the distinction between carcinocythemia and acute leukemia or lymphoma.

#### AUTHORSHIP CONTRIBUTIONS:

JG, CF performed the research; JG, CF, JD and VA contributed essential tools; JG, CF and JD wrote the paper. All authors contributed to the final approved version of this manuscript before its submission

**CONFLICTS OF INTEREST** The authors declare no conflicts of interest.

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