

Platelets–Leucocyte Satellitism: Love Is in the EDTA!

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In what may be called the roller-coaster ride profession of pathologists, there are many landscapes passing by that we see but do not look at! However, once in a while, a rare

sighting forces us to pull the breaks. Platelet satellitism is one such uncommon, peculiar phenomenon that shows platelets rosetting around neutrophils and sometimes monocytes.^{1,2}

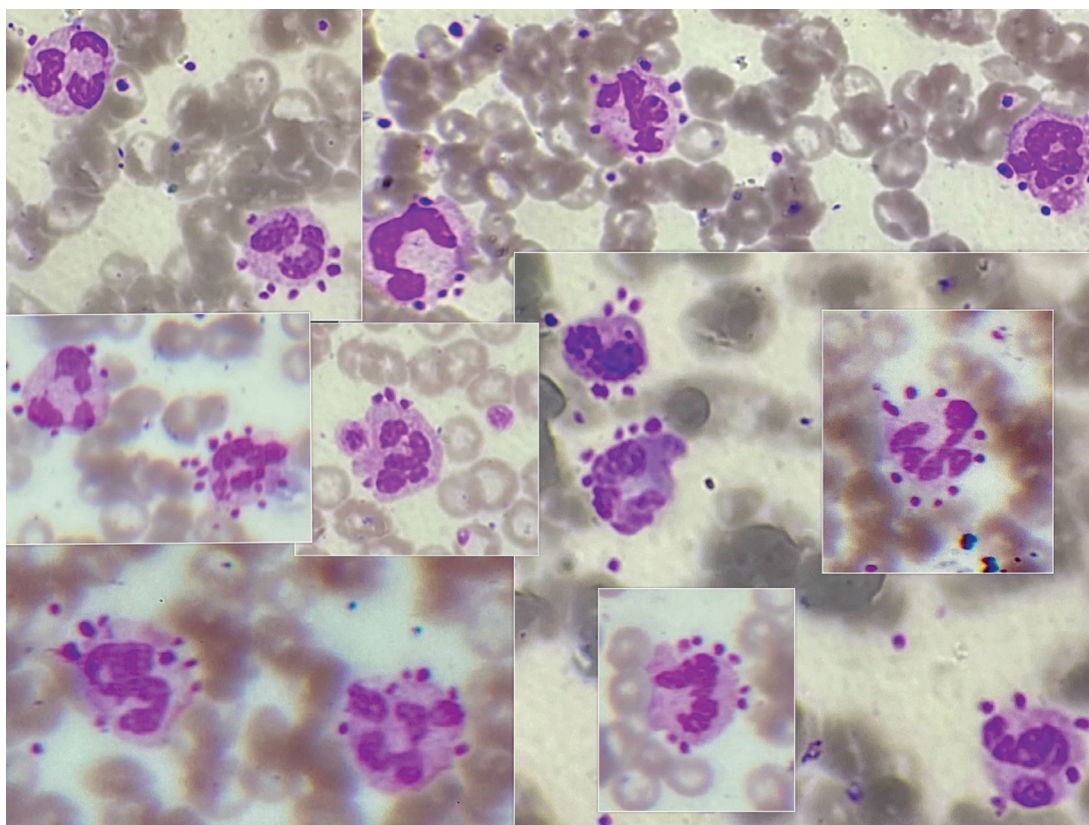


Fig. 1 Leishman stained peripheral blood smear of the patient with neutrophils surrounded by platelets (100x oil immersion).

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Exposure of a cryptic antigen on the platelets treated with ethylenediaminetetraacetic acid (EDTA) may be responsible for this phenomenon, giving a spurious thrombocytopenic picture on a complete blood count.³

We came across this alluring finding recently in the peripheral blood smear of a 16-year-old patient of BCR-ABL-positive acute lymphoblastic leukemia (ALL), who was in remission.

Approximately 60% of neutrophils showed at least four or more platelets sticking to their surface (► **Fig. 1**). Occasional monocytes were also seen covered with platelets.

Platelet satellitism is a rare cause of spurious thrombocytopenia. On PubMed search, we could find only 72 articles in the English language on the subject, of which only 3 were from India.

The postulated mechanism for this picturesque phenomenon is the presence of IgG autoantibodies in the patient's serum, directed against a cryptic domain of the α IIb β 3 integrin of platelets, that is unmasked in the presence of EDTA. The Fc γ receptor (CD16) of neutrophils or monocytes react to this autoantibody causing rosetting. The reason for the presence of such autoantibodies in some individuals is still obscure.^{3,4}

Platelet satellitism has been described in texts,^{5,6} to be seen usually in healthy individuals. It has also been reported in diseases such as lymphoma⁷ and autoimmune hemolytic anemia.⁸

Apart from pseudo-thrombocytopenia, platelet satellitism does not have profound clinical implications. However, a distinctive morphology with platelets apparently defying

the laws of entropy, arranging themselves in an orderly manner, around polymorphs, is rare and should not be missed.

Conflict of Interest

None declared.

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