LETTER TO THE EDITOR

Platelet Satellitism: A Unique Cause of Pseudothrombocytopenia

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Dear Editor

Platelet satellitism is an unusual cause of pseudothrombocytopenia. In 1963, Macleod and Field first reported this phenomenon [1]. It is a rare *in vitro* occurrence observed in the blood that is collected in Ethylene Diamine Tetra acetic Acid (EDTA) vacutainer. It dispenses as platelets rosetting around neutrophilic leucocytes [2]. This culminates in spuriously low platelet levels on complete blood counts performed on hematology analyzers [3]. The exact mechanism is still unclear. The pathophysiology evolves around the existence of IgG autoantibodies against the cryptic domain of the αIIb β3 integrin of platelets. The rosetting is caused by the reaction between these antibodies and the Fcγ receptor of neutrophils. The latency of EDTA unveils this phenomenon. This is usually observed in healthy individuals and the existence of such autoantibodies is still unclear [4]. Some cases of lymphoma [5] and autoimmune hemolytic anemia also report such a phenomenon [6]. This phenomenon is not linked with the dysfunction of platelets or any bleeding.

There are a few reported cases from Pakistan. Hence we report this unique finding in a 20-year-old male who came for a routine checkup and underwent a complete blood count (CBC). The report showed normocytic normochromic cells with normal total leukocyte count and differentials. However, the platelet count was 60 x 109/L. Peripheral blood film (Leishman-stained) showed platelet satellitism in the majority of neutrophils (**Fig. 1**). There was no satellitism observed in other cells of the myeloid series. The erroneous platelet count was deleted from the report and an explanation was provided along with the manual estimation of platelet count. Vortex mixing of the primary EDTA tube sample has been reported to alleviate pseudothrombocytopenia [7]. Another method used for the correction of pseudothrombocytopenia is the collection of a sample in an S-Monovette ThromboExact tube or sodium citrate tube. The platelet and white blood cell count obtained from the citratetube must be multiplied by 1.1 to account for the different blood-to-anticoagulant ratios in the citrate tube [8].

Platelet satellistism is an uncommon but clinically relevant cause of spurious pseudothrombocytopenia. Awareness among pathologists is of pivotal importance so that it is not missed. A major limitation of our case is that no corrective action like anticoagulant replacement from EDTA to Citrate was performed.

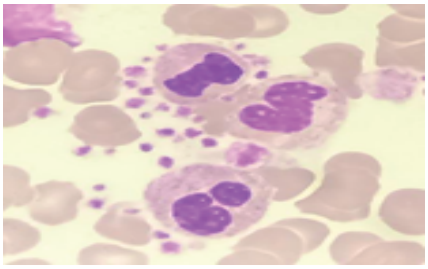

Fig. (1): Platelet satellitism in the majority of neutrophils.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Declared none.

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