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Circulating Histiocytes and Hemophagocytosis in Peripheral Blood

Çevre Kanında Dolaşan Histiyositler ve Hemofagositoz

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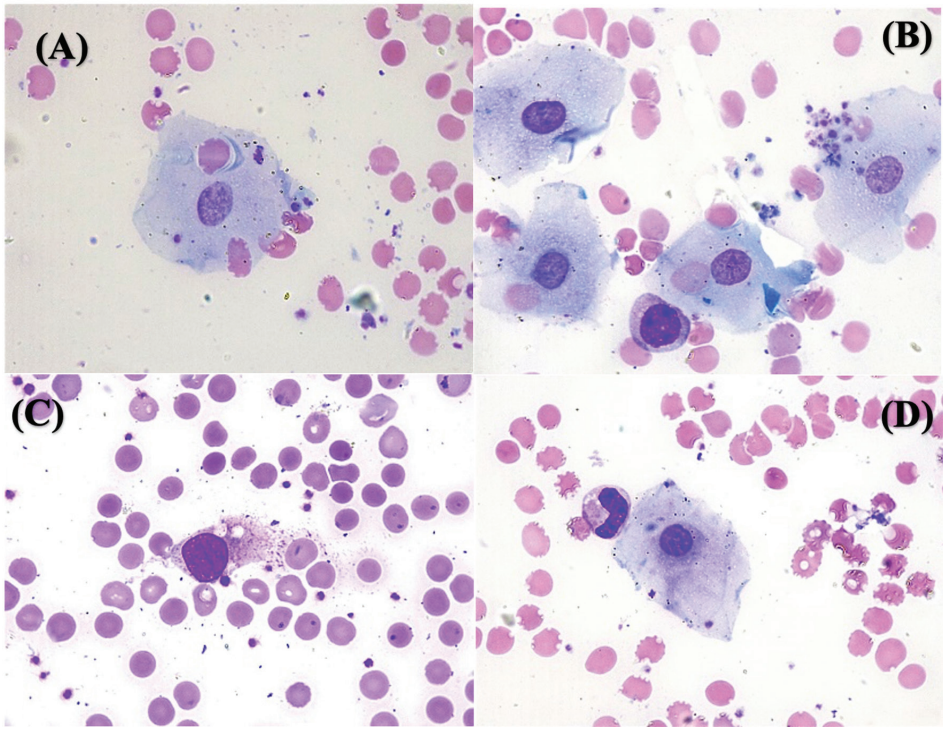

Figure 1. A-D) Peripheral blood smears showing circulating histiocytes with images of hemophagocytosis affecting red blood cells and platelets (Wright-Giemsa stain, 100^{x} magnification).

A 67-year-old man with diabetes and chronic post-smoking bronchitis was admitted to the cardiology department for management of unstable angina requiring coronary bypass surgery. His history included hospitalization for hypoxemic coronavirus disease 19 (COVID-19) pneumonia and a previous undocumented blood transfusion. The initial assessment was normal.

The postoperative period was marked by the occurrence of bilateral infectious pneumonia, for which the patient received broad-spectrum probabilistic antibiotic therapy without any bacteriological specimens identified.

The biological workup showed a biological inflammatory syndrome with severe regenerative anemia at 7.6 g/dL with

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platelet count of 520 G/L. The patient was transfused with compatible packed red blood cells (RBCs). A blood smear examination showed numerous circulating histiocytes with some images of hemophagocytosis affecting RBCs and platelets (Figure 1).

Hemolysis findings were as follows: increased lactate dehydrogenase (445 IU/L), low haptoglobin (<58.3 mg/L), and increased free bilirubin (Bt/Bc: 78/27 mmol/L). Testing for macrophage activation syndrome (MAS) revealed hyperferritinemia (1400 ng/mL) and hyperfibrinogenemia (5 g/L) with normal triglyceride levels. In the absence of any other argument in favor of MAS and in view of the patient's good progress, bone marrow biopsy or aspiration was not performed.

The direct antiglobulin test performed after transfusion was positive for immunglobulinG and C3d. The diagnosis of post-drug (levofloxacin) autoimmune anemia was retained.

The observation of circulating histiocytes and images of hemophagocytosis in peripheral blood is rare and the pathophysiological mechanisms remain poorly elucidated. They are often associated with hemophagocytic lymphohistiocytosis secondary to three groups of disorders: infections, neoplasia, or autoimmune diseases. Sloma et al. [1] described the presence of a peripheral phagocytic histiocyte in a patient with acute myeloid leukemia following an episode of severe pneumonia and they suggested that it was probably related to an inappropriate host immune response to the pneumonia. Sayagh et al. [2] hypothesized that, in addition to the autoimmune context, donor/recipient incompatibility was at play in low immunogenic red cell groups in the case of a 10-month-old baby transfused with packed RBCs. In our case, two possible hypotheses may be considered: infectious pneumonitis and RBC transfusion.

Keywords: Anemia, Hemophagocytosis, Histiocytes, Hemophagocytic lmfohistiyositoz

Anahtar Sözcükler: Anemi, Hemofagositoz, Histiyosit, Hemofagositik lenfohistiyositoz

Informed Consent: Informed consent was obtained from the patient.

Authorship Contributions

Surgical and Medical Practices: As.B.; Concept: H.J., As.B.; Design: H.J.; Data Collection or Processing: Y.D.; Analysis or Interpretation: Am.B.; Literature Search: Y.D.; Writing: H.J., Am.B.

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