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Decoding Cytoplasmic Vacuolization: Unraveling the Diagnostic Challenges of VEXAS Syndrome

Sitoplazmik Vakuolizasyonun İzinde: VEXAS Sendromunun Tanısal Zorluklarını Anlamak

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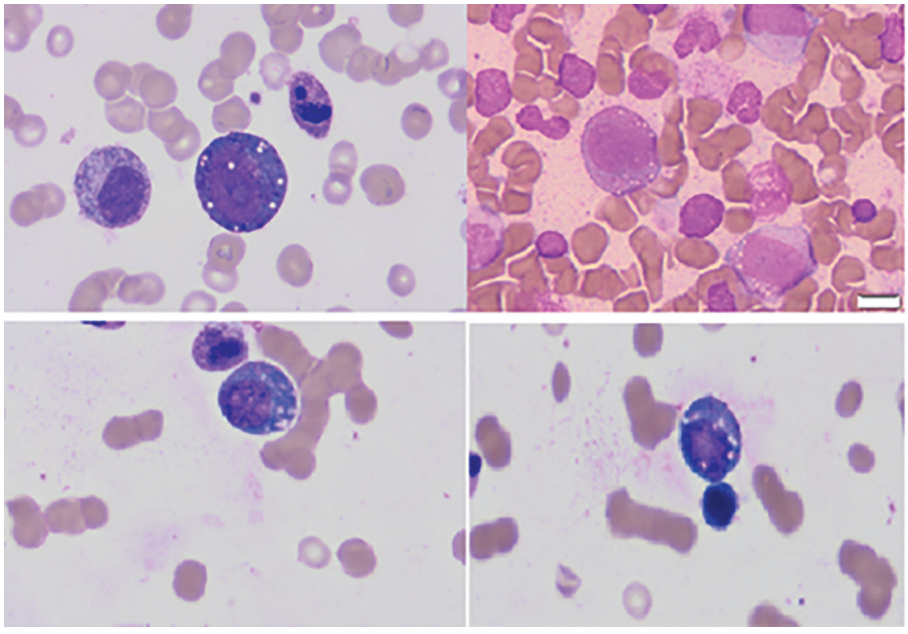

Figure 1. Vacuoles in VEXAS syndrome.
VEXAS: Vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic.

A 67-year-old man with a history of ankylosing spondylitis diagnosed in 2019 and treated with methylprednisolone and methotrexate presented in 2023 with testicular pain, orchitis-epididymitis, and Fournier gangrene. Despite surgical intervention and antibiotic therapy, he developed multiple skin abscesses. Laboratory results showed C-reactive protein of 80.6 mg/L, hemoglobin of 10.2 g/dL, mean corpuscular volume of 100 fL, platelets of 22,000/µL, and international normalized ratio of 1.15. Pathological examination of skin and wound biopsies revealed necrosis and abscess formation.

A repeat bone marrow biopsy demonstrated marked hyperplasia in the granulocytic and megakaryocytic series, dysplastic changes, and patchy plasma cell infiltration. Bone marrow aspiration revealed vacuoles in progenitor cells (Figure 1). Persistent cytopenia, fever, abscesses, and bone marrow

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abnormalities raised suspicion of vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic (VEXAS) syndrome. Genetic testing confirmed a somatic c.122T>C (p.M41T) mutation in the *UBA1* gene at 81%, establishing the diagnosis.

This case highlights the importance of considering VEXAS syndrome in patients presenting with systemic inflammation, cytopenia, refractory abscesses, and vacuolated progenitor cells in the bone marrow. The findings emphasize the pivotal role of genetic testing for *UBA1* mutations in confirming the diagnosis and suggest that vacuolization in bone marrow precursors should prompt suspicion of VEXAS syndrome.

Keywords: VEXAS, Cytoplasmic vacuolization, UBA1, Vacuoles, Cytopenia, MDS

Anahtar Sözcükler: VEXAS, Sitoplazmik vakuolizasyon, UBA1, Vakuoller, Sitopeni, MSD

Ethics

Informed Consent: Patient consent was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Concept: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Design: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Data Collection or Processing: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Analysis or Interpretation: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Literature Search: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.; Writing: T.T., M.C.B., M.K., İ.Ö.D., O.M.A., S.C.B.

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