When Inflammation Mimics Malignancy: Recognizing VEXAS Syndrome in Oncology Practice

Laura El Halabi, M.D.[1], Marcel Katrib, M.D.[2], Anthony Albayeh, M.D.[1], Alexandre Khoury, M.D.[1], Nadia Katrib, MS-4[3], Giovanni Yanni, MS-4[4], Jannane Nasr, M.D.[1], Ammar Al-Obaidi, M.D.[1]

[1]The University of Kansas School of Medicine-Wichita, Wichita, Kansas, Department of Internal Medicine

[2]The University of Kansas School of Medicine-Wichita, Wichita, Kansas, Department of Obstetrics and Gynecology

[3]University Of Balamand, Lebanon Department of Internal Medicine

[4]Lebanese University - Faculty of Medicine, Lebanon Department of Internal Medicine

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Introduction. VEXAS syndrome is a recently identified clonal hematoinflammatory disorder caused by acquired somatic mutations in the *UBA1* gene in hematopoietic stem and progenitor cells. Its discovery established a paradigm linking clonal hematopoiesis with systemic inflammation and progressive bone marrow dysfunction. Patients commonly present with persistent cytopenias and multisystem inflammatory manifestations that overlap with myelodysplastic syndromes, other clonal hematologic disorders, and complications encountered in oncology practice. As a result, affected individuals often are evaluated within hematology and oncology pathways, where findings may initially be attributed to malignancy, paraneoplastic inflammation, or treatment-related toxicity, contributing to delayed diagnosis.

Methods. We conducted a narrative synthesis of published clinical studies, cohort analyses, and molecular investigations describing the pathogenesis, hematologic manifestations, and diagnostic features of VEXAS syndrome, with emphasis on findings relevant to hematology and oncology practice.

Results. VEXAS syndrome predominantly affects men older than 50 years and is defined by somatic *UBA1* mutations that drive myeloid inflammation and bone marrow dysfunction. Hematologic manifestations include persistent macrocytic anemia, thrombocytopenia, and other cytopenias, frequently occurring in association with clonal hematologic disorders such as myelodysplastic syndromes and plasma cell dyscrasias. Bone marrow examination characteristically demonstrates cytoplasmic vacuolization of myeloid and erythroid precursor cells. Patients also may develop systemic inflammatory manifestations involving the skin, lungs, cartilage, joints, and vasculature, with recurrent fever and venous thromboembolism commonly reported.

Conclusions. VEXAS syndrome represents a clonal hematoinflammatory disorder at the intersection of hematology, oncology, and immunology. Recognition of unexplained cytopenias accompanied by systemic inflammation should prompt consideration of *UBA1* testing to facilitate earlier diagnosis and multidisciplinary management.