Paraneoplastic Sweet Syndrome Leading to the Diagnosis of Acute Myeloid Leukemia in a Young Adults

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Introduction

- Acute myeloid leukemia (AML) commonly presents with nonspecific symptoms including fatigue, fever, and infections due to cytopenias.
- Dermatologic manifestations such as Sweet syndrome, a neutrophilic dermatosis, can rarely be the initial presenting feature and may mimic soft tissue infections

Case presentation

- A 37-year-old male with chronic lower extremity wounds and a family history of leukemia presented with fever vomiting, and rapidly worsening necrotic leg lesions
- Laboratory evaluation revealed pancytopenia (WBC 3.8×10³/μL with 5% blasts, hemoglobin 6.2 g/dL, platelets 19×10³/μL), acute kidney injury (creatinine 1.44 mg/dL), and markedly elevated inflammatory markers
- Computed tomography (CT) imaging showed extensive right lower extremity cellulitis, hepatosplenomegaly, and reactive lymphadenopathy.





- Peripheral smear showed circulating blasts, and flow cytometry confirmed AML with 41% myeloblasts.
- Molecular testing revealed mutations in *NPM1*, *NRAS*, and *RAD1*, with negative *IDH1/2* status.
- Wound assessment revealed necrotic, malodorous ulcers consistent with Sweet syndrome.
- While corticosteroids are the mainstay for Sweet syndrome, their use was deferred to avoid potential interference with induction chemotherapy
- He was managed with broad-spectrum antibiotics, transfusions, and supportive care.
- He was transferred to a tertiary center for ongoing management but succumbed to refractory septic shock

Discussion

- Sweet syndrome may be a paraneoplastic manifestation of AML and can resemble soft tissue infections.
- Early diagnostic steps such as peripheral smear, flow cytometry, and molecular profiling are essential in confirming the diagnosis, risk stratification, and guiding timely treatment outcomes

References

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