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Hematopoietic findings in a patient with scurvy

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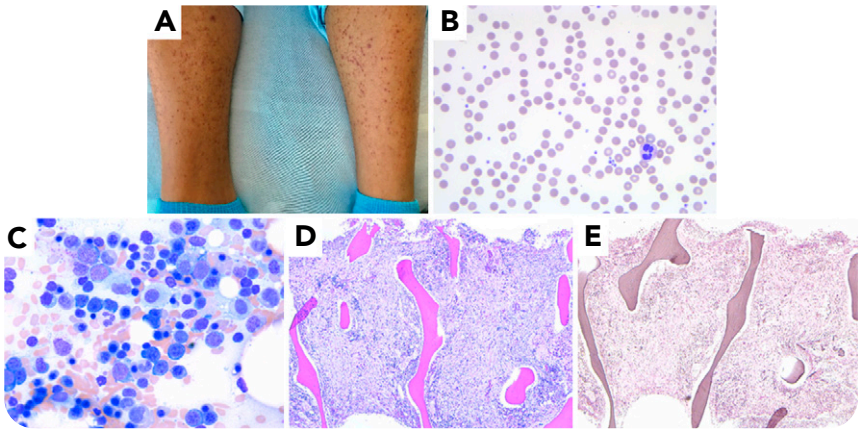

A 17-year-old boy with obsessive-compulsive disorder, limited dietary variety, and back and leg pain was referred to the emergency department with concern for an infiltrative process after magnetic resonance imaging showed abnormal bone marrow signal. On examination, he was found to have gingival inflammation and a perifollicular petechial rash on his lower extremities (panel A). Initial laboratory results revealed a normocytic anemia (hemoglobin 10.3 g/dL), and a blood smear was devoid of blasts, dacrocytes, dysplasia, and polychromasia (panel B; Wright-Giemsa stain, original magnification ×200). The marrow aspirate revealed trilineage hematopoiesis with erythroid hyperplasia (panel C; Wright-Giemsa stain, original magnification ×500). The core biopsy demonstrated atrophic changes, relative erythroid hyperplasia (panel D; hematoxylin and eosin stain, original magnification ×50), and no reticulin fibrosis (panel E; reticulin stain, original magnification ×50). Limited genetic testing was negative. Subsequently, nutritional laboratory results revealed several critically low vitamin levels, most notably an undetectable plasma vitamin C level. The patient was diagnosed with scurvy and started on vitamin C replacement and had notable improvement in his pain, rash, and gingival hyperplasia within days of initiation.

Scurvy can result in marrow atrophy and defective erythropoiesis that reverse upon vitamin C administration. Although scurvy is a rare condition, it remains an important diagnostic consideration.

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