Comment on: [Lost at Sea in Search of a Diagnosis: A Case of Unexplained Bleeding] Subtitle: Scurvy from chemotherapy-induced adverse effects in an adolescent oncology patient

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Subtitle : Scurvy from chemotherapy-induced adverse effects in an adolescent oncology patient

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Dear Editor,

The brief report published by Amos et al in 2016 shed light on the occurrence of scurvy in pediatric and adolescent patients with dietary restrictions.[1] Indeed, patients with neurodevelopmental conditions are most commonly associated with the risk of developing scurvy; other at-risk patients include those with gastrointestinal disorders, alcoholism, and psychiatric conditions.[2, 3] We aim to expand upon the situations when scurvy should be considered by presenting a case of an adolescent male diagnosed with scurvy secondary to the adverse effects of his chemotherapy.

A 19-year-old male with a 10-month history of high-risk pre-B-cell acute lymphoblastic leukemia was consulted by the dermatology service for a new diffuse rash present for four days. He was recently enrolled in

a phase 3 randomized trial of inotuzumab ozogamicin and was receiving methotrexate and vincristine. The chemotherapy regimen induced severe dizziness, nausea, and vomiting refractory to anti-emetic medications. His aversion to chemotherapy was so strong that it caused him to feel nauseated between treatment sessions. He also endorsed painful oral and pharyngeal sores that made it difficult to tolerate a regular diet. In addition to oropharyngeal pain, he experienced marked arthralgia and fatigue, which he also attributed to the chemotherapy. Additionally, the patient reported that vincristine reduced his taste sensation, which led to a poor appetite. These adverse symptoms culminated in a loss of 6.7 kg (9.1%) in less than one month.

Physical examination revealed peri-follicular purpura on the back (Fig 1A), face, and bilateral upper and lower extremities. Upon closer inspection, we noted prominent corkscrew (spiral and curly appearance) hairs (Fig 1B). The lower mucosal lip had superficial erosions with scalloped-borders and fine petechiae (Fig 1C). Laboratory evaluation revealed pancytopenia with a platelet count of 42 k/UL and low serum levels of vitamin C (<0.1 mg/dL), potassium (3.4 mEq/L), magnesium (1.1 mg/dL), and albumin (2.8 g/dL). Serum vitamin A (35 mcg/dL) levels were within normal limits. The patient was diagnosed with scurvy due to poor food intake from his chemotherapy-induced nausea, emesis, and mucositis. It was thought that acidic foods, such as citrus, exacerbated the mucosal erosions, which caused him to avoid vitamin C-rich foods.

Scurvy, caused by a prolonged L-ascorbic acid (vitamin C) deficiency, may manifest as pathognomonic corkscrew hairs with petechiae, gingival pain and bleeding, vascular fragility, arthralgias, fatigue, and numerous gastrointestinal symptoms.[4,5, 6] Although vitamin C deficiency was an indirect result of his chemotherapy, scurvy, by itself, may have aggravated his symptoms, thereby creating a vicious cycle of poor oral intake. Our case highlights the complex relationship between chemotherapy-induced mucocutaneous adverse effects, a limited diet, and vitamin C deficiency. We recommend clinicians to consider scurvy in oncology patients, with or without thrombocytopenia, presenting with peri-follicular purpura and corkscrew hairs.

Ethics Statement: Informed patient consent was obtained for publication of the case details and photographs.

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Figure Legend

Figure 1. A) Peri-follicular purpura on the back. B) Folliculocentric heme-crusted papules with corkscrew hairs on the right shoulder C) Superficial mucosal erosions and fine petechiae on the lower lip.