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Angular cheilitis induced by iron deficiency anemia

A 20-YEAR-OLD WOMAN had a 4-month history of painful red erosions around the mouth. She had no dysphagia or fatigue and no history of diarrhea, gluten intolerance, or diabetes mellitus. An antifungal-antibacterial ointment prescribed by her dentist had provided no relief.

Physical examination revealed an erosive dermatitis and fissures at the angles of the mouth (**Figure 1**). The oral cavity was normal, with no evidence of oral thrush or ulcers. Hematologic testing revealed the following:

- Hemoglobin 8.0 g/dL (reference range for females 12.3–15.3)
- Mean corpuscular volume 62 fL (80–100)
- Serum ferritin 1.3 ng/mL (15–200)
- Reticulocyte count 0.86% (0.5–1.5)
- White blood cell count 9.8 × 10^9/L (4.5–11.0)
- Platelet count 450 × 10^9/L (150–400).

Vitamin B_{12} and folate levels were normal, and tests for antitissue transglutaminase and antinuclear antibodies were negative.

Based on these results, the diagnosis was angular cheilitis from iron deficiency anemia. Treatment with oral ferrous gluconate 300 mg twice daily cleared the cheilitis, and after 4 weeks of this treatment, the hemoglobin level increased to 9.8 g/dL, the serum ferritin increased to 7 ng/mL, and the reticulocyte count increased to 2.6%. She was advised to continue taking oral iron tablets for another 3 months until the hemoglobin level reached 12.0 g/dL.

During 2 years of follow-up, she had no recurrence of angular cheilitis, and her hemoglobin and serum ferritin levels remained normal. Ferrous gluconate was her only medication from the time of her diagnosis.

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Figure 1.

A BROAD DIFFERENTIAL DIAGNOSIS

Causes include nutritional deficiencies, local and systemic factors, and drug treatment

Angular cheilitis (perlèche) is an inflammatory condition characterized by erosive inflammation at one or both angles of the mouth. It typically presents as erythema, scaling, fissuring, and ulceration. A wide variety of factors, including nutritional deficiencies, local and systemic factors, and drug side effects, may produce cheilitis.[1,2]

Nutritional deficiencies account for 25% of all cases of angular cheilitis[3] and include iron deficiency and deficiencies of the B vitamins riboflavin (B_2), niacin (B_3), pyridoxine (B_6), and cyanocobalamin (B_{12}).[1]

Local causes include infection with *Candida albicans* or *Staphylococcus aureus* and allergic contact dermatitis. Common causes of allergic contact dermatitis include lipstick, toothpaste, mouthwash, cosmetics, sunscreen, fragrance, metals such as nickel, and dental appliances.[1]

Systemic diseases associated with angular cheilitis include xerostomia, inflammatory

bowel disease, Sjögren syndrome, glucagonoma, and human immunodeficiency virus.[1]

Drugs that cause angular cheilitis include isotretinoin, sorafenib (antineoplastic kinase inhibitor), and ointments or creams such as neomycin sulfate–polymyxin B sulfate, bacitracin, idoxuridine, and steroids.[1,4]

Conditions that mimic angular cheilitis include herpes simplex type 1 (herpes labialis) and actinic cheilitis. Herpes labialis, characterized by burning sensation, itching, or paresthesia, usually precedes a recurrence of vesicles that eventually ulcerate or form a crust and heal without a crust. Herpes labialis often recurs, affecting the vermilion border and lasting approximately 1 week.

Actinic cheilitis, a premalignant condition that commonly involves the lower lip with sparing of the corners of the mouth, is caused by excessive sun exposure. Patients often have persistent dryness and cracking of the lips.

In our patient, angular cheilitis was the main clinical manifestation of iron deficiency anemia, highlighting the importance of looking for iron deficiency in affected patients without a more obvious cause.

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