Atrophic glossitis; an indicator of iron deficiency anaemia: report of three cases

Veena Raju, Anjana Arora, Shweta Saddu

ABSTRACT

Atrophic glossitis of tongue is considered as one of the signs of nutritional deficiency anemias. Tongue de-papillation can be present with or without other clinical manifestations of iron deficiency anaemia leading to diagnostic dilemma. This paper report three cases of atrophic glossitis associated with iron deficiency anaemia.

Keywords: Anaemia; Atrophic; Glossitis; Iron Deficiency Anaemia

INTRODUCTION

Atrophic glossitis (AG) is an inflammatory disorder of the tongue mucosa that shows a smooth, glossy appearance with a red or pink background.1,2 Atrophy of the papillae, mucosa, and dorsum of the tongue are considered classical signs of nutritional deficiencies.3 Absence of filiform or fungiform papillae involving more than 50% surface area of dorsum of tongue gives rise to a “soft” aspect, known as atrophic glossitis or smooth tongue.3 Clinically, iron deficiency anaemia progresses slowly, and symptoms include fatigue, light-headedness, cramps in legs weakness and spoon-shaped nails. Oral signs and symptoms, including pale oral mucosa, glossitis, angular cheilitis, and recurrent oral ulcerations offer the dentist an opportunity to participate in the diagnosis of this condition.4 This paper report three cases of atrophic glossitis associated with iron deficiency anaemia.

Case Report 1

A 20-year old female patient reported to the department of Oral and Maxillofacial Medicine and Radiology with a chief complaint of pain in right back region of tongue for last two weeks with difficulty to swallow due to burning sensation. During clinical evaluation, angular cheilitis, pale yellow sclera, spoon shaped nails of forearm and feet were noticed. The patient also displayed a intolerance to spicy food and fatigue after simple daily activities. Oral examination revealed pale oral mucosa, glossitis with well defined depapillated area on dorsum of tongue on left side (Figure 1). Hematologic tests were done. Serum iron 27.1 µg/dl, serum ferritin 2.44 ng/ml and total iron binding capacity to be 453µg/dl confirmed diagnosis of iron deficiency anaemia. Patient was prescribed iron supplement and referred to medical hospital for systemic management. On second followup, the symptoms starts reducing with improvement in overall patient wellbeing.

Case Report 2

A 20-year old female patient reported to the department of oral medicine with a chief complaint of sensitivity to cold and margins was present over anterior 1/3 of dorsum and right lateral margin of tongue (Figure 2). Filliform papillae were absent with inter-dispersed prominent fungiform papillae. Based on these findings, a provisional diagnosis of dentinal hypersensitivity in relation to 11, 21, 22 due to erosion and atrophic glossitis was made. Gastric disease involvement was ruled out due to absence of any history of regurgitation of food or dental erosion on palatal surfaces of upper anterior teeth. Differential diagnosis of nutritional deficiency anaemia, median rhomboid glossitis, geographic tongue were considered. Following this, the patient was enquired about history of lethargy, weight loss or weight gain, polydypsia, polyphagia, polyuria and intake of drugs like antibiotics to rule out other systemic causes of atrophic glossitis. Patient was advised to undergo haematological investigations including complete haemogram with peripheral smear. Her haemoglobin level was found to be 6.4 gm%. Peripheral smear showed presence of hypochromic, microcytic erythrocytes. Final diagnosis of anaemic glossitis due to microcytic, hypochromic (iron deficiency) anaemia was formulated. Patient was put on a combination of ferric ammonium citrate, folic acid and cyanocobalamin. On follow-up after one month, patient stated her burning sensation had completely resolved. On examination of the tongue, the earlier depapillated areas were filled with filiform papillae (Figure 3) and her haemoglobin was 6.8gm%. The patient was advised periodic follow-up.

Case Report 3

A 30 year old female reported to department of oral medicine with a chief complaint of pain in lower right back tooth region for last four days. Medical history was non-contributory. On extraoral examination pallor was noticed in the nails and palpebral conjunctiva. Multiple fissures were radiating from the corners of mouth bilaterally. On intraoral examination labial mucosa, buccal mucosa and soft palate were pale. Dorsum of the tongue showed de-papillated areas with multiple deep fissures (Figure 4). Provisional diagnosis of iron deficiency anaemia was given. Haematological tests showed 6.2 gm% haemoglobin and hypochromic and microcytic erythrocytes. Iron supplements were prescribed for two months. Followup done after 1½ month showed increase in haemoglobin to be 7.8% with complete re-papillation of tongue (Figure 5).

Discussion

Tongue diseases could be reflections of altered systemic conditions or, also, initial forms of local and often severe pathologies.1 Iron deficiency is one of the most common disorders
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Affecting humans, and iron-deficiency anemia continues to represent a major public health problem worldwide. It is especially common among women of childbearing age because of pregnancy and menstrual blood loss. The predisposing factors of the atrophic glossitis is mainly divided into local and systemic. Local causes include trauma to oral mucosa due to excessive use of tobacco spices, geographic tongue, median rhomboid glossitis, chronic atrophic candidiasis, fissured tongue, erosive lichen planus etc. Systemic causes are deficiency of Vit B₁₂ or iron or folate leading to anemia, drugs like ACE inhibitors, protease inhibitors, antibiotics, aspirin, immunosuppressive drug, corticosteroid inhalers, post-menopausal state in females, diabetes, irritable bowel disease, gastic disturbances leading to hyperacidity, hypothyroidism, loss of papillae secondary to epidermolysis bullosa, dyskeratosis congenita, endocrine candidosis, hyalinosis cutis et mucosae syndromes, radiation induced mucositis etc. Dentist can rule out various systemic diseases associated with atrophic glossitis by the classical clinical signs and symptoms and refer patient to concerned for management. In cases reported here, atrophic glossitis was the main clinical manifestation which helped us in suspecting iron deficiency anemia and which was supported by the results of hemogram and peripheral smear. Confirmation of diagnosis of iron deficiency anemia is done by estimation of decreased serum iron and ferritin level, increased serum iron binding capacity and transferrin level. However, for case 2 and case 3 confirmatory tests were not performed due to economical reasons.

Conclusion
In conclusion, dentist play a crucial role in diagnosing asymptomatic iron deficiency anemia by identifying oral signs and symptoms like pallor of oral mucosa, atrophic glossitis and confirming it by performing haematological investigations.

Authors Affiliations

References

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Address for Correspondence
Dr. Anjana Arora, BDS, Post Graduate Student, Department Of Oral Medicine And Radiology, The Oxford Dental College, Bommanahalli, Bangalore, Karnataka, India. Email: dr.anjanaarora2909@gmail.com

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