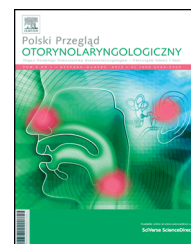


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Case Report/Kazuistyka

Atrophic glossitis as a clinical signs of severe anemia – Report of two cases



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ARTICLE INFO

Article history:

Received: 08.10.2014

Accepted: 13.10.2014

Available online: 22.10.2014

Keywords:

- Anemia
- Iron-deficiency
- Glossitis
- Immunosuppression

ABSTRACT

Atrophic glossitis is a clinical condition observed in tongue. It presents with considerable loss of taste buds under a red or pink background. Atrophic glossitis occurs by atrophy of the filiform and fungiform papillae of the tongue. In general, atrophic glossitis is caused by nutritional deficiency. This condition mainly affects elderly and debilitated patients. Patients may experience symptoms such as pain or burning at the site. The purpose of this article is to describe two cases of atrophic glossitis. The first case was associated with immunosuppression due to HIV and the second one due to malignancy. Atrophic glossitis is a benign condition and your knowledge is of great importance because it is often an early sign of some systemic disease. The clinician should be aware of the clinical signs for the diagnosis to be confirmed by some laboratory tests. Treatment consists of nutritional deficit and repair intervention on the underlying disease.

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Introduction

Some changes in tongue may be manifestations of systemic diseases, nutritional deficiencies and initial signs of severe illness (e.g. carcinomas) [1]. Atrophic glossitis, also known as smooth tongue or atrophic papillae, always occurs when there is a loss of 50% of fungiform and filiform papillae on the dorsum of the tongue [2]. It affects mainly the tongue, but can be present on the edges. Atrophic glossitis is an inflammatory disorder, which gives a smooth appearance with reddish background, and there may be pain and burning [3].

Atrophic glossitis is a classic sign of nutritional deficiencies related to lack of vitamin B12, iron, folic acid, riboflavin and niacin [1, 2]. Other causes of atrophic glossitis include systemic infections such as syphilis and local infections like oral candidiasis [1]. This condition can also manifest in patients with celiac disease, AIDS, diabetes, heart failure, amyloidosis, chemical irritation, drug reaction, permissive anemia and Sjögren's syndrome, with high prevalence in patients hospitalized [4–6].

There are few cases of atrophic glossitis described in the literature. Thus, this issue becomes relevant due to its high prevalence in debilitated patients. The objective of this

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<http://dx.doi.org/10.1016/j.ppotor.2014.10.001>

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paper is to report two cases of atrophic glossitis associated with immunosuppression due to HIV and malignancy.

Case report

Case 1

A white male patient with 49-year-old was admitted to the Oswaldo Cruz Hospital (Curitiba/Paraná, Brazil) complaining of productive cough, fever, diarrhea and loss of appetite.

The patient is HIV positive and his diagnosis for this infection was done 20 years ago. He reported that he himself had discontinued treatment with antiretroviral drugs four years ago. During the anamnesis, the patient reported being a smoker (one pack of cigarettes per day for 39 years). No record of alcohol or illicit drug use was reported in their medical history.

Oral examination revealed that the patient used a denture. He had ulcers on the lips, melanin pigmentation, melanosis of the smoker and the loss of fungiform and filiform papillae on the dorsum of the tongue (Fig. 1). Despite the changes on the tongue, the patient did not report any local discomfort. According to these clinical signs, a hypothesis of atrophic glossitis associated with anemia was appointed.



Fig. 1 – Dorsum of the tongue showing atrophy of the papillae in a patient HIV positive with severe anemia

Some laboratory tests were performed to assess the general health of the patient. Hemogram, blood platelet counting, fasting blood sugar, erythrocyte sedimentation rate (ESR), and AST and ALT enzymes. The following changes were observed: anemia (reticulocytes counting low, hemoglobin = 9.0 g/dL, hematocrit = 28%, MCV = 84 fL, and MCHC = 32%), leukopenia, thrombocytopenia, elevated AST and ESR.

According to these results, the diagnosis of atrophic glossitis was correlated with HIV associated anemia. The recovery of tongue papillae occurred only six weeks later when HAART was reintroduced and pneumocystosis was properly treated.

Case 2

A white female, 82 years old was admitted to the Hospital Oswaldo Cruz (Curitiba/Paraná, Brazil) complained of flank pain and abscess presenting with dark secretion.

His medical history revealed an advanced colorectal carcinoma with metastases. During anamnesis, the patient reported not being a smoker, alcoholic or a drug user.

Oral examination revealed the presence of dentures and a significant loss of fungiform and filiform papillae on the dorsum of the tongue (Fig. 2) and pallor of the mucous membranes of the mouth.



Fig. 2 – Partial loss of papillae on the dorsum of the tongue of a patient with severe anemia

The following tests were requested: complete blood count, platelet count, ESR, serum glucose and AST, ALT and GGT. The laboratorial tests showed the following results anemia (reticulocytes counting low, hemoglobin = 10.0 g/dL, hematocrit = 30%, MCV = 134 fL, and MCHC = 36%), leukopenia, thrombocytopenia, elevated AST and ESR.

According to these results, the diagnosis of cancer-related anemia was established. Atrophic glossitis affected all dorsum of the tongue and was associated with severe anemia. There was recovery of tongue papillae only seven weeks later when there was an improvement in the patient's systemic conditions.

However, due to colorectal carcinoma, the patient was transferred to another hospital specialist in cancer treatment.

Discussion

Atrophic glossitis is a benign lesion of uncertain etiology. It may be the first sign of more serious systemic diseases such as megaloblastic anemia, vitamin deficiencies, HIV infection and malignancies. Often, atrophic glossitis and mucosal pallor may appear in the patient's mouth while its main systemic disease remains asymptomatic [7].

The pale mucous membranes occur when the hemoglobin concentration is below 9–10 g/dL. On the other hand, there is no record of studies correlating levels of hemoglobin and the appearance of atrophic glossitis. Elderly and debilitated patients are more affected by atrophic glossitis. A study developed by Bohmer [4] demonstrated that the prevalence in the elderly inpatients was 32%. On the other hand, the prevalence is 9.2% in the elderly living in their households.

Atrophic glossitis is found in approximately 1% of adults. Epidemiological studies about atrophic glossitis differ in relation to gender and age. Some studies suggest that men aged 50–59 years are the most affected (2.8%) [8]. On the other hand, other studies attribute iron deficiency caused by the menstrual cycle. Thus, the increased prevalence of atrophic glossitis is observed in women (7.0%) [9].

Clinically, the oral findings in patients with severe anemia include mucosal pallor, atrophic glossitis, and candidiasis. The mucosal pallor is often overlooked during clinical examination. Moreover, glossitis atrophic condition is easier to be perceived. It appears as areas of complete or irregular loss of papillae of the tongue, which is caused by atrophy of the lingual papillae. In both cases described here, patients had atrophic glossitis. In the patient in case 1, the lingual papillae loss was incomplete because it was still possible to see traces of lingual papillae. On the other way, the second patient exhibited complete lingual papillae loss.

Another condition that affects the tongue and produces lingual papillae loss is geographic tongue or benign atrophic glossitis. It is a condition of unknown cause that affects 2% of the population. It is characterized by areas of depapillation irregular margins and elevated keratotic edges similar to maps in the back of the tongue. Another striking feature of this condition is that the lesions migrate place [10]. This hypothesis was discarded because the clinical aspect was not observed in clinical cases of patients reported here.

The diagnosis of atrophic glossitis is based on the oral mucosal, especially the tongue. To confirm the diagnosis of a systemic change, the practitioner should request some additional tests. In the first case, the patient was HIV positive and had a loss of papillae of the tongue. For confirmation of the diagnosis laboratory tests showed anemia, leukopenia, thrombocytopenia, elevated AST and ESR (erythrocyte sedimentation rate) were requested. The blood test is essential to confirm the hypothesis of iron deficiency anemia. Anemia due to iron deficiency is the most common type of anemia with women being more frequently affected than men [11]. Hematological changes are common complications of HIV infection. Several factors play roles in the development of anemia in these patients include chronic diseases, opportunistic infections, nutritional deficiency and toxicity produced by some drugs [12].

Besides lingual papillae loss, the patient with iron deficiency anemia can present candidiasis and angular cheilitis. However, none of these changes were observed in the cases described here. According to Bridges et al. (2009), loss of tongue papillae occur due to changes in the metabolism of oral epithelial cells may give rise to abnormalities in cellular structure and pattern of keratinization of oral epithelium.

The treatment of atrophic glossitis includes nutritional deficiency in the repair and/or treatment of a pathological condition associated with a correct cleaning oral [13]. A careful evaluation of the physician is required for correct diagnosis because it can be a manifestation of a systemic condition [3]. As anemia is a major cause of atrophic glossitis, treatment of this condition is important to repair the loss of tongue papillae. The primary aim is of course to find the cause of the anemia and correct it if possible.

Health professionals, especially dentists and otolaryngologists need to be aware of the clinical signs of atrophic glossitis, because it can be an indication of a major health problem.

Authors' contributions/Wkład autorów

According to order.

Conflict of interest/Konflikt interesu

None declared.

Financial support/Finansowanie

None declared.

Ethics/Etyka

The work described in this article has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; EU Directive 2010/63/EU for animal experi-

ments; Uniform Requirements for manuscripts submitted to Biomedical journals.

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