

## Tend to slipped through our mind: Recurrent aphthous stomatitis could be a warning sign

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### Abstract

This case report will further discuss how the existence of RAS can be a sign and lead to a more systemic condition that needs to be addressed. Recurrent Aphthous Stomatitis is an oral disease often characterized by oval or round ulcers that are painful in the oral mucosa and occur recurrently. There are a variety of different predisposing factors that appear with RAS. Anemia is one of those predisposing factors. The appearance of RAS can be perceived as a sign to dig deeper into one's health condition as it may lead to a more specific diagnosis. This is important to decide the available options to treat the diagnosis that follows the signs. Clinically diagnosed as RAS, a patient happens to also get a following diagnosis of moderate microcytic anemia. Dental examination should be considered a sign of an individual's overall health.

**Keywords:** RAS; Stomatitis; Anemia; Dental Examination; Diagnosis

### 1. Introduction

Recurrent Aphthous Stomatitis is an oral disease often characterized by oval or round ulcers that are painful in the oral mucosa and occur recurrently[1].The prevalence of RAS in the general population ranges from 5 to 25%, with the second decade of life marking its most prevalent appearance. Therefore, RAS is known as the most prevalent clinical condition affecting the oral mucosa[2].Its etiology remains unclear and considered idiopathic, although several predisposing factors come with RAS.

Anemia is when an individual's hemoglobin (Hb) concentration or red blood cell (RBC) count is below average and insufficient to meet physiological needs. As there are different classifications of anemia, in defining anemia, several aspects need to be taken into account. This will be further explained in depth in the discussion. As mentioned above, there are a variety of different predisposing factors that appear with RAS. Anemia is one of those predisposing factors. The appearance of RAS can be perceived as a sign to dig deeper into one's health condition as it may lead to a more specific diagnosis. This is important to decide the available options to treat the diagnosis that follows the signs.

Thyroid-stimulating hormone (TSH) levels higher than normal and thyroxine levels lower than normal indicate hypothyroidism. In regions of the world where iodine is abundant, chronic autoimmune thyroiditis, which results in the breakdown of thyroid tissue by cells and antibodies, is the most frequent cause of hypothyroidism [3]. By this far, no specific evidence exists that RAS and hypothyroidism have a certain correlation. However, the literature covers the incidence of hypothyroidism as a comorbidity in patients with RAS [4].

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## 2. Case

### 2.1. Patient Description and Case History

Informed consent was obtained from all individual participants included in the study. A 21-year-old girl came to *Rumah Sakit Perguruan Tinggi Negeri Universitas Udayana* with the chief complaint of a significant lesion on her upper left lip that disturbs every time the patient speaks and eats. Further anamnesis reveals a case history of the patient. The patient told the clinician that the lesion occurred five days ago. It started as multiple small lesions, but on the first night, all the lesions united and became one extensive lesion. The size and shape of the lesion remained the same in the last five days. The patient gave a point of seven on the visual analog scale. The patient tried to apply *Kenalog* in an attempt to cure the lesion. The pain worsened when the patient ate, and the lesion was constantly touched. The patient explained that nothing could make the lesion improved. The patient also explained that the last time this similar lesion on the mouth happened was two months ago. However, the lesion was more minor and was healed in a week.

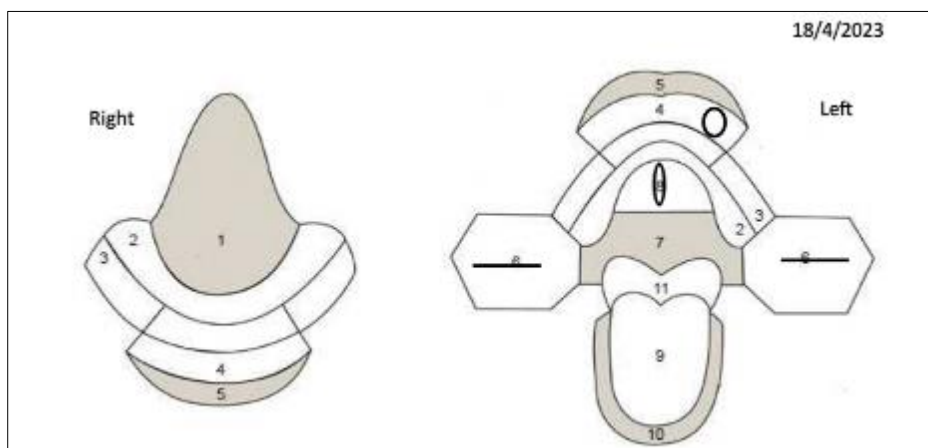
Deeper anamnesis reveals that the patient used to have a history of anemia; however, the patient thought the patient did not have it anymore. The patient also told us that ten years ago, the patient also had a history of hypothyroidism, and it was cured. The patient also explained her parental history, whereas her mother has a history of Crohn's disease. The patient does not smoke and rarely consumes alcohol. The patient told us that the patient last went to the dentist ten months ago for scaling. The patient brushes her teeth twice a day. However, the patient does not use any mouthwash.

**Table 1** Physical Examination

<b>Blood Pressure</b>	<b>124/83 mmHg</b>
Respiratory Rate	20 times per minute
Pulse Rate	80 bpm
Body temperature	36-degree Celsius
Height	156 cm
Weight	53 kg

Extraoral Examination showed that the patient had a symmetrical face and no facial swelling. The lymphatic glands are not palpable; there were no abnormalities on the outer part of the patient's lip and skin around the mouth.

Intraoral examination portrayed debris and stain, but not dental calculus. The mucogram is attached below.



**Figure 1** Lesions locations on Mucogram

**Information:**

- Ventral of the tongue or floor of the mouth
- Gingiva
- Vestibulum
- Labial mucosa
- Lips
- Buccal mucosa
- Soft palate
- Hard palate
- Dorsum of the tongue
- Lateral of the tongue
- Orofaring

As shown in the mucogram above, the patient has four lesions. Three of them are normal variants of humans. Firstly, we start from the labial mucosa. On the left side of the labial mucosa was a single ulcer with a round shape and a diameter of 7 mm. Its color is white, and it has a smooth texture that is well-defined and regular. The site around the lesion is erythematous. There are also bilateral papular lesions on the buccal mucosa, both left and right. The length is 15 mm, white, smooth surface texture, well-defined, regular, normal sites around the lesion. Lastly, there was a nodular lesion on the hard palate, single, oval with a width of 5 mm and length of 3 mm, smooth surface texture, well-defined, regular, normal sites around the lesion.

The odontogram was also filled, and it was found that the patient has four impacted third molars, and there were no other abnormalities.

The patient was then referred to the doctor to undergo a hematology laboratory test to confirm the suspected anemic condition.

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**3. Results of Pathological Tests**

The hematology test result came in on April 24th. The result showed that the patient's Hb is 10.3 g/dL with MCV of 73.5 fL, MCH of 21.8 pg, and MCHC of 29.7 g/dL.

**3.1. Treatment Plan**

The patient's RAS was treated with Triamcinolone acetonide 0.1%, and the patient was then given a health education in regard to the medication use and her anemic condition. The patient was instructed to apply the medication thrice daily at 8-hour intervals.

**3.2. Expected Outcome**

RAS is expected to heal in about 1-2 weeks.

**3.3. Actual Outcome**



**Figure 2** Healing Progress of the Lesion

As expected, the lesion heals in 7 days under the usage of Triamcinolone acetonide 0.1%. This proves that the treatment works well and is successful.

#### 4. Discussion

RAS can be seen as a signal to further investigate one's health issue because it may lead to a more precise diagnosis. As the patient thought the anemia was just a part of the patient's health history, the hematology test result tells otherwise. The hematology test suggests that the patient's Hb is 10.3 g/dL, which is equal to 103 g/L. Therefore, based on the most common cutoffs being used to determine whether or not someone is anemic, the WHO Hb Cutoffs in Anemia, this patient falls under the moderate category of anemia. This is particularly important to identify because the patient did not know her condition. Thus, by having this kind of identification of her anemia status, the patient can mitigate her condition not to be worse.

**Table 2** WHO Hb Cutoffs in Anemia

Population	Nonanemic	Anemia		
		Mild	Moderate	Severe
Children 6–59 months of age	≥110*	100–109	70–99	<70
Children 5–11 years of age	≥115	110–114	80–109	<80
Children 12–14 years of age	≥120	110–119	80–109	<80
Nonpregnant women (15 years of age and above)	≥120	110–119	80–109	<80
Pregnant women	≥110	100–109	70–99	<70
Men (15 years of age and above)	≥130	110–129	80–109	<80

\*All units are in g/L (5)

Not only Hb, but the hematology test result also gives out the details of her MCH, MCV, and MCHC. MCV, represented in femtoliters (10<sup>15</sup>; fl) or cubic microns (m<sup>3</sup>), measures the size of red blood cells. MCH measures the amount of hemoglobin in each red blood cell. MCHC indicates hemoglobin content per unit of volume. In contrast to MCH, MCHC links the amount of hemoglobin to the size of the cell (6). It can be reported as a percentage or g/dl of red blood cells. The patient's MCV is 73.5 fL, MCH is 21.8 pg, and MCHC is 29.7 g/dL. This indicates that the patient's size of red blood cells is smaller than average. Her amount of Hb in each red blood cell is less than the average. Lastly, her amount of Hb to the size of the cell is also less than average. This means the patient has microcytic anemia.

#### 5. Conclusion

Many undermine the role of dental examination in indicating a more systemic health problem. However, this case report proves otherwise. This case report showcases exactly how dental examination can be a sign of an individual's overall health.

#### Compliance with ethical standards

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##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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## Author's Short Biography



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