COATED TONGUE TREATMENT USING TONGUE SCRAPER ALL OVER THE SURFACE OF TONGUE DORSUM

(PERAWATAN COATED TONGUE MENGGUNAKAN TONGUE SCRAPER PADA SELURUH PERMUKAAN DORSUM LIDAH)

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ABSTRACT

A coated tongue is characterized by a white, yellowish-brown, or blackish-coloured coating on the tongue's surface. Coated tongues are formed from debris consisting of bacteria on the dorsal surface of the tongue, a large number of desquamated epithelial cells derived from the oral mucosa, leukocytes from periodontal pockets, and blood metabolites, and a variety of different nutrients. Score according to Gomez's justification to see the colour change in this case score one and Miyazaki classification to see the distribution of the spread of white plaque in the case of score 3. The treatment plan in this case provides medication in the form of chlorhexidine gluconate mouthwash 0.2% and an emphasis on maintaining oral hygiene and using tongue scraper aids. Patients were asked to do one week and five weeks of control to see the development of lesions in the form of white plaque.

Keywords: coated tongue; oral hygiene instruction; tongue scraper

ABSTRAK

Coated tongue ditandai dengan adanya lapisan putih, coklat kekuningan, atau berwarna kehitaman pada bagian permukaan lidah. Coated tongue terbentuk dari debris yang terdiri dari bakteri pada permukaan dorsal lidah, sejumlah besar sel-sel epithelial deskuamasi yang berasal dari mukosa oral, leukosit dari poket periodontal, metabolit darah, dan berbagai nutrient yang berbeda. Skor menurut klasifikasi Gomez untuk melihat perubahan warna pada kasus ini skor 1 dan klasifikasi Miyazaki untuk melihat distribusi penyebaran dari plak putih pada kasus skor 3. Rencana perawatan pada kasus ini yaitu pemberian medikasi berupa obat kumur chlorhexidine gluconate 0,2% dan penekanan pada kebersihan mulut serta menggunakan alat bantu tongue scraper. Pasien diminta melakukan kontrol satu minggu dan lima minggu untuk melihat perkembangan dari lesi berupa plak putih.

***Kata kunci**: coated tongue; oral hygiene instruction; tongue scraper*

INTRODUCTION

Plaque is an area of elevation, dense, flat, and wider than 1 cm in diameter. Plaques are located primarily on superficial parts of the oral mucosa and can sometimes extend deeper into the dermis. The edges can be sloping, and sometimes the keratin surface proliferates, where this state is called lichenification. An example of plaque lesion is in the case of the coated tongue.

A coated tongue is characterized by the presence of a white, yellowish-brown, or blackish-coloured layer on the tongue's surface. Coated tongues are formed from debris consisting of bacteria on the dorsal surface of the tongue, a large number of desquamated epithelial cells derived from the oral mucosa, leukocytes from periodontal pockets, and blood metabolites, and a variety of different nutrients. Most of the lining is concentrated on the posterior part of the tongue. Hairy tongue, hairy leukoplakia, and oral candidiasis are the differential diagnoses of the coated tongue. [2-4]

The prevalence of coated tongue was reported in Asia. A study has been conducted to examine the prevalence of lesions in the oral cavity, and the result is coated tongue has the highest presentation, which is 28%. In another research

conducted with the Turkish population, these lesions are the most common, but the prevalence is very low at 2.1%. [3]

The treatment plan for coated tongue conditions is emphasized in the communication and education of patients to brush the tongue using a tongue scraper and to use chlorhexidine mouthwash 0.2% as an antiseptic that works by killing and preventing the growth of bacteria, fungi, and viruses. [5.6]

The purpose of this case report is to discuss coated tongue treatment in a patient who comes to RSGMP UNJANI.

CASE REPORT

A 54-year-old woman came with complaints of bad breath, and her tongue felt dirty on the surface of the tongue. The patient brushed her teeth once every two days after eating and the night before going to bed, but the patient never brushed the tongue's surface. The patient was not taking any medication. The patient's last visit to the dentist was 1.5 years ago for dental restoration treatment. She often chewed using one side of the jaw—history of systemic diseases owned by patients, namely hypotension, uric acid, and cholesterol. General examinations and vital signs are carried out and within normal limits. The extraoral examination result was normal, the patient's face was symmetrical, and there was no pathologic lesion on the face. Intraoral examination of the patient showed a thick white plaque that can be wiped on the entire surface of the tongue dorsum.

The first visit was made in October 2020 with a treatment plan in the form of chlorhexidine gluconate 0.2% mouthwash twice a day, education on how and when to brush teeth and to use tongue scraper. Patients are instructed to maintain dental and oral hygiene, consume mineral water about eight glasses per day and educate for one week for control.

Figure 1. The first visit before the treatment, here seen coated tongue on the entire surface of the tongue dorsum.

On one week control was observed on white plaque lesions, on this visit a thin layer of white plaque that can be wiped on the anterior 2/3 of the tongue and thick white plaque on the 1/3 posterior part of the dorsum is still visible. A follow-up treatment plan was carried out to provide education during the first visit.

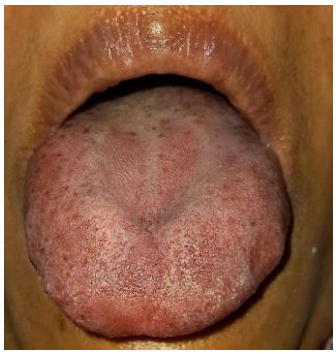

Figure 2. One week control photo.

The second control visit in the fifth week was carried out in November 2020. The patient was observed again to see the improvement in the lesion experienced. White plaque lesions have improved considerably by being marked by a very thin layer of white plaque that can be wiped on the entire surface of the tongue dorsum. An education such as instructing patients to maintain dental and oral hygiene, brushing teeth two times a day in the morning, 30 minutes to 1 hour after breakfast and the night before going to bed, brushing the tongue from the back to the front to remove the remnants of white plaque on the tongue dorsum using tongue scraper.

Figure 3. A third visit was shown for post-treatment five-week control.

DISCUSSION

A coated tongue is a non-ulceration breast milk lesion described as a white plaque that can be wiped. Generally, the tongue has a red-pink colour, often covered by a whitish or brownish layer called the coated tongue. Gomez classified and described the layers on the dorsal surface of the tongue based on a discolouration consisting of four scores. A score of 0 is given when the layer is colorless, a score of 1 is given when the layer is white, a score of 2 when the layer is yellow, a score of 3 is given when the tongue layer is coloured brown, and a score of 4 is given when the layer is black. Miyazaki's scale is intended for the distribution of layers on the surface of the tongue dorsum. A score of 0 is given when the lining is not visible, a score of 1 is given when less than one-third of the back surface is covered, a score of 2 when less than two-thirds of the back surface is covered, and a score of 3 is given when the tongue layer is covered by plaque more than two-thirds of the tongue's dorsum surface. In this case, it was given a score of 1 for the Gomez classification and a score of 3 for the Miyazaki classification.[3,7]

Coated tongue or tongue debris consists of bacteria; many desquamated epithelial cells derived from the oral mucosa, leukocytes from periodontal

pockets, blood metabolites, and various nutrients. The formation of tongue coating on the tongue is closely related to the multiplication of epithelial cells and the number of desmosomes and membrane-coating granules. Multiple organisms can be found inside the oral cavity, especially on the tongue. Fungi and bacteria on the tongue are associated with various dental and oral treatments and common health problems. In addition, destructive bacteria produce Volatile Sulphur Compound (VSC) in the dorsum. The tongue is the main cause of halitosis. [7.8] The more layers and thick layers of white plaque present on the tongue dorsum will result in increased halitosis. The production of VSC gas that can cause bad breath or halitosis depends on several factors in the oral cavity, such as the reproduction rate and metabolism of bacteria, the volume and composition of saliva, and a decrease in oxygen concentration. Various bacteria found in the oral cavity include *Porphyromonas gingivalis, Fusobacterium nucleatum, Prevotella intermedia, Treponema denticola,* and *Tannerella forsythia*. These bacteria are associated with intraoral halitosis. In the growing layer of the tongue, microorganisms, especially anaerobic bacteria, overgrow due to low oxygen potential due to the surface morphology of the tongue, such as roughness, papillae and cryptic crevices. [9.10] Factors that can affect the occurrence of *the coated tongue* are poor oral hygiene, smoking, periodontal status, saliva characteristics, changes in eating habits, age, and drugs. [11,12]

The prevalence of *coated tongue was* reported at 8.2% in a study conducted by Dar Wazeh et al. in the Jordanian population. Mayvira's study of 100 older people in Medan showed that all older people had oral mucosal lesions, one of which was coated tongue lesions with a presentation of 69%. Ayu et al. 2014 conducted a similar study on the clinical picture of oral cavity mucosal abnormalities in the elderly at Tresna Werdha Budi Sejahtera Banjarbaru social care home, with results that most lesion presentations were fissured tongue, which was 51.78% and coated tongue 48.21%. [13.14]

The diagnosis of lesions can be concluded based on anamnesis and clinical examination. In this case, it was coated tongue on the entire surface of the tongue dorsum. The treatment plan, in this case, can be done by administering Chlorhexidine mouthwash of 0.2% and giving OHI (Oral hygiene instruction) to improve oral cavity hygiene by educating how to brush the teeth and using aids to brush with a tongue scraper two times a day after tooth brushing. The tongue is gently

and thoroughly cleaned from the posterior towards the anterior direction of the tongue. Tongue cleansing serves to reduce halitosis and needs to be done regularly every day. [9]

Patients were observed for one week and five weeks to see the development of white plaque lesions on the tongue. One week after treatment, the patient observed that a state of white plaque had begun to decrease on the tongue 2/3 anterior dorsum tongue but was still quite thick on the part 1/3 posterior dorsum tongue.

The patient came for the second control of five weeks. The condition of the white plaque on the examination has been reduced very rapidly on the entire surface of the tongue dorsum, and only a thin layer of plaque was seen. Patients continue to routinely use the tongue scraper twice daily after brushing their teeth in the morning and the night before bed.

Clinical studies have shown that regular daily use of *tongue scrapers* reduces the white plaque layer on the tongue dorsum, which can cause bad breath, halitosis, and other problems. Removing food debris on the tongue using a tongue scraper makes taste buds more functional in food taste buds. [15]

CONCLUSION

The treatment plan in coated tongue cases was to give a Chlorhexidine mouthwash of 0.2% and give OHI (Oral hygiene instruction) to improve oral cavity hygiene. Educating how to brush teeth and using aids to brush the tongue with a tongue scraper two times a day after brushing teeth was effective for reducing coated tongue and halitosis on a patient.[5.15]

CONFLICT OF INTEREST

We declare that there is no conflict of interest in the scientific articles

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