



Black Hairy Tongue: A Case Report

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Abstract

Black hairy tongue is a benign, asymptomatic oral disease that usually has a good prognosis. It is distinguished by the lingual dorsum of the tongue being noticeably discolored, either black or brownish, and by the hypertrophy of the filiform papillae. The present article describes a case of black hairy tongue in a 45-year-old male patient who attended the clinic with a complain of Halitosis. The clinical examination revealed a distinct hairy appearance of the filiform papillae of the posterior two thirds of the tongue, with yellow discoloration. The treatment involved improvement of oral hygiene, tongue brushing and smoking cessation. At the six-week follow-up visit, the intraoral examination showed a complete resolution of tongue discoloration and an improvement in halitosis.

Keywords: Black Hairy Tongue; Halitosis; Hyperkeratosis of the Tongue; Lingua Villosa Nigra

Introduction

Black hairy tongue is an asymptomatic oral condition that is benign in nature, and typically has a good prognosis [1-3]. It is characterized by a hypertrophy of the filiform papillae, with a distinct black or brownish discoloration of the lingual dorsum of the tongue [4]. The prevalence of black hairy tongue ranges from 0.15% to 11.3%, and it is often seen in certain groups, such as males, elderly people, and drug addicts (can reach up to 57%) [5-7]. Patients with black hairy tongue usually present with no symptoms and have aesthetic complains, however, some may present with symptoms, mostly halitosis, dysgeusia, and glossodynia [8-10].

Currently, the etiological factors for black hairy tongue are still unclear [2]. Some suggested factors associated with this condition are smoking, the use of oral mouthwashes containing hydrogen peroxide, intravenous drug addiction, immunosuppression (e.g., cancer, HIV infection), and frequent consumption of alcohol, tea, and coffee [2,3,10-13].

Halitosis, or bad breath, is a common complaint encountered in dental practice and can often be associated with Black Hairy Tongue (BHT) [10]. While halitosis can arise from various oral and systemic conditions, BHT represents a distinct etiological factor contributing to malodor [14,15]. Halitosis associated with Black Hairy Tongue represents a multifactorial condition influenced by microbial overgrowth, tongue coating, and the production of malodorous compounds [14]. Understanding the interplay between these factors is crucial for effective management and the

resolution of halitosis in patients presenting with BHT [14,15].

This report describes a case of black hairy tongue in a patient who presented to the clinic with complaints of halitosis. The treatment involved enhancing oral hygiene protocols, performing mechanical debridement via tongue scraping, and discontinuing tobacco usage. At the six-week follow-up post-intervention, complete resolution of the discoloration was observed upon intraoral assessment.

Case Report

A 45-year-old male patient presented to the dental clinic complaining of halitosis associated with oral discomfort. He confirmed other symptoms, namely tongue burning and dysphagia. Medical history revealed he had undergone tonsillectomy 35 years ago. Regarding habits, he smoked one pack per day for 27 years (27 pack-years) and consumed about 2-3 cups of coffee throughout the day, along with 2 cups of tea nightly before bedtime. The intraoral examination revealed crowns on the upper and lower teeth from tooth #16 to tooth #46. The tongue exhibited a hairy appearance characterized by the prominent elongation of the filiform papillae in the posterior two-thirds of the tongue. These papillae appeared yellowish in color and could not be removed with gauze. No discoloration was observed on the buccal mucosa, and there were no palpable cervical lymph nodes (Figure 1).

The patient was reassured, and the treatment plan involved reinforcing oral hygiene instructions, which included using a mouthwash (without hydrogen peroxide) twice a day and incorporating the use of a tongue scraper three times a day along



Figure 1: Before treatment



Figure 2: After six weeks of the treatment

with toothbrushing after the main meals. Additionally, the patient was counseled about the complications of smoking and its adverse effects on oral health, with instructions to reduce or quit smoking. Furthermore, the patient was advised to reduce the quantity of tea and coffee consumption.

Four weeks after initiating the treatment and cessation measures, the intraoral examination revealed compliance with the treatment regimen and a slight decrease in the hairy appearance of the tongue, indicating improvement in tongue appearance. The patient also reported experiencing improved oral discomfort and halitosis.

At the six-week follow-up visit, complete resolution of tongue discoloration was observed during the intraoral examination (Figure 2).

Discussion

This case report presents a 45-year-old male with a clinical diagnosis of hairy tongue syndrome, a benign condition characterized by elongated filiform papillae on the tongue's surface, leading to a hair-like appearance [1,3]. This condition is often associated with certain habits and systemic conditions [2]. The patient's history of smoking and consumption of caffeinated beverages are notable factors that may contribute to the presentation of this condition. Differential diagnosis for black hairy tongue and related conditions is summarized in Table 1, providing additional insights into similar oral manifestations and their distinguishing features.

The presented case highlights a multifactorial etiology underlying the patient's complaints of halitosis, oral discomfort, and tongue burning, ultimately diagnosed as Black Hairy Tongue (BHT). Several factors contributed to the development of BHT in this patient, including tobacco smoking, excessive consumption of tea and coffee, and poor oral hygiene practices.

Smoking and oral health

Smoking has been established as a significant risk factor for various oral health issues, including periodontal disease, tooth loss, and oral cancers [11,16]. It affects the oral mucosa's integrity, promotes plaque accumulation, and impairs healing, thereby exacerbating conditions like hairy tongue syndrome [17]. The patient's long history of smoking likely played a role in the development and persistence of his symptoms [16,17]. Cigarette smoke contains numerous chemicals, including tar and nicotine, which can alter the normal physiology of the oral mucosa and promote bacterial and fungal overgrowth, leading to the characteristic black discoloration of the tongue [17]. The patient's history of smoking 1 pack per day for 27 years (27 pack-years) likely played a significant role in the development and persistence of BHT in this case.

Caffeine and oral health

Caffeine consumption, particularly from coffee and tea, can also impact oral health [18,19]. Tannins found in these beverages can contribute to tooth staining and enamel erosion [13]. Additionally, the diuretic effect of caffeine can lead to dry mouth, which may further exacerbate the patient's oral discomfort and halitosis [10]. The patient's habit of consuming 2-3 cups of coffee and 2 cups of tea daily may have contributed to the staining and altered appearance of the filiform papillae.

Treatment and Management

Management of this case primarily involves addressing underlying causative factors and implementing appropriate oral hygiene measures [2,17]. The use of a non-hydrogen peroxide mouthwash and mechanical debridement with a tongue scraper are standard interventions for managing hairy tongue syndrome [2,17]. These measures, along with smoking cessation and reduction in caffeine intake, likely contributed to the resolution of the patient's symptoms. Additionally, the use of antimicrobial mouthwashes and

Condition	Description	References
Black Hairy Tongue	Typically presents with blackish or brownish lingual hairiness, but can also show yellowish or greenish pigmentation in rare cases.	
Addison’s Disease	Associated with dark pigmentation of the tongue.	[20]
Pseudo-Black Hairy Tongue	Induced by bismuth subsalicylate.	[21]
Smoker’s Melanosis	Related to dark pigmentation due to smoking.	[22]
Melanoma	A type of skin cancer that can affect the tongue.	[23]
Hemochromatosis	Can cause dark pigmentation of the tongue.	[24]
Peutz-Jeghers Syndrome	Characterized by pigmented spots on the lips and oral mucosa.	[25]
Acanthosis Nigricans	Presents with velvety, dark patches of skin.	[26]
Laugier-Hunziker Syndrome	Associated with pigmentation of the lips and oral mucosa.	[27]
Metallic Deposition	Dark pigmentation due to metal exposure in medical history.	[28]
Congenital Lingual Melanocytic Macules	Commonly linked to a black tongue in young people.	[29,30]
Congenital Melanocytic Nevus	Another disorder linked to a black tongue in young people.	[31]

Table 1: Table summarizing the differential diagnosis for black hairy tongue and related conditions.

dietary modifications aimed at reducing microbial proliferation can aid in the management of both BHT and halitosis [14,15]. The observed improvement in the patient’s symptoms and tongue appearance following four weeks of treatment and cessation measures underscores the importance of addressing underlying etiological factors in the management of BHT. Complete resolution of tongue discoloration at the six-week follow-up visit further supports the efficacy of the implemented treatment regimen.

Conclusion

This case highlights the importance of addressing modifiable risk factors in the management of hairy tongue syndrome. Smoking cessation and reduction of caffeine intake are crucial steps in mitigating the condition’s impact on oral health. The positive outcome in this patient’s case reinforces the need for comprehensive patient education and adherence to oral hygiene practices.

Bibliography

- Gurvits GE and Tan A. “Black hairy tongue syndrome”. *World Journal of Gastroenterology WJG* 20 (2014): 10845.
- Schlager E., et al. “Black hairy tongue: predisposing factors, diagnosis, and treatment”. *American Journal of Clinical Dermatology* 18 (2017): 563-569.
- Thompson DF and Kessler TL. “Drug-induced black hairy tongue”. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy* 30 (2010): 585-593.
- Kulig K., et al. “Differences in the morphological structure of the human tongue”. *Folia Morphology (Warsz)* (2023).
- Shinde SB., et al. “Prevalence of tongue lesions in western population of Maharashtra”. *International Journal of Applied Dental Sciences* 3 (2017): 104-108.

- Sawan D., et al. “Hairy Tongue and Associated Risk Factors among Outpatients in Faculty Dentistry of Damascus University: A Cross-Sectional Study”. *Journal of Pharmaceutical Negative Results* (2022): 2649-2656.
- Patil S., et al. “Prevalence of tongue lesions in the Indian population”. *Journal of Clinical and Experimental Dentistry* 5 (2013): e128.
- Prabha N., et al. “Glycopyrrolate-induced black hairy tongue”. *Indian Dermatology Online Journal* 11 (2020): 256-257.
- Ren J., et al. “Antibiotic-induced black hairy tongue: two case reports and a review of the literature”. *Journal of International Medical Research* 48 (2020): 0300060520961279.
- Moghbel A., et al. “The effect of green tea on prevention of mouth bacterial infection, halitosis, and plaque formation on teeth” (2011).
- Rad M., et al. “Effect of long-term smoking on whole-mouth salivary flow rate and oral health”. *Journal of Dental Research, Dental Clinics, Dental Prospects* 4 (2010): 110.
- Sun K-W and Yang Z-C. “Long-term use of triple antibiotic-induced black hairy tongue: A case report”. *SAGE Open Medical Case Reports* 11 (2023): 2050313X231204136.
- OKAMURA T., et al. “Effects of tannin on experimental staining of enamel”. *Journal of Oral Tissue Engineering* 20 (2022): 47-54.
- Cortelli JR., et al. “Halitosis: a review of associated factors and therapeutic approach”. *Brazilian Oral Research* 22 (2008): 44-54.
- Aylıkçı BU and Çolak H. “Halitosis: From diagnosis to management”. *Journal of Natural Science, Biology and Medicine* 4 (2013): 14.

16. Millar WJ and Locker D. "Smoking and oral health status". *Journal of the Canadian Dental Association (Tor)* (2007): 73.
17. Hernawati S. "Management of hairy tongue with oral candidiasis in active smokers". *Health Notions* 4 (2020): 43-47.
18. Nawrot P., et al. "Effects of caffeine on human health". *Food Addit Contam* 20 (2003): 1-30.
19. Cogo K., et al. "In vitro evaluation of the effect of nicotine, cotinine, and caffeine on oral microorganisms". *Canadian Journal of Microbiology* 54 (2008): 501-508.
20. Rezende HD., et al. "Hyperpigmentation of the tongue as a clue to the diagnosis of Addison's disease".
21. Cohen PR. "Black tongue secondary to bismuth subsalicylate: case report and review of exogenous causes of macular lingual pigmentation". *Journal of Drugs Dermatology JDD* 8 (2009): 1132-1135.
22. Yunita L., et al. "Smoker's Melanosis Tongue Identification System using the Spatial and Spectral Characteristic Combinations Tongue in the Visible and Near-Infrared Range". In: 2019 International Seminar on Research of Information Technology and Intelligent Systems (ISRITI). IEEE (2019): 30-33.
23. Venugopal M., et al. "Amelanotic melanoma of the tongue". *Journal of Oral and Maxillofacial Pathology* 17 (2013): 113-115.
24. Al Wayli H., et al. "Hereditary hemochromatosis of tongue". *Oral Surgery, Oral Med Oral Pathol Oral Radiol Endodontology* 111 (2011): e1-5.
25. Pereira CM., et al. "Peutz-Jeghers syndrome in a 14-year-old boy: case report and review of the literature". *International Journal of Paediatric Dentistry* 15 (2005): 224-228.v
26. Hall JM., et al. "Oral acanthosis nigricans: report of a case and comparison of oral and cutaneous pathology". *American Journal of Dermatopathology* 10 (1988): 68-73.
27. Mignogna MD., et al. "Oral manifestations of idiopathic lenticular mucocutaneous pigmentation (Laugier-Hunziker syndrome): a clinical, histopathological and ultrastructural review of 12 cases". *Oral Disease* 5 (1999): 80-86.
28. Joseph BK and Savage NW. "Tongue pathology". *Clinical Dermatology* 18 (2000): 613-618.
29. Dohil MA., et al. "The congenital lingual melanotic macule". *Archives of Dermatology* 139 (2003): 767-70.
30. de Arruda JAA., et al. "Congenital Melanotic Macule of the Tongue: Report of Two Cases and Literature Review". *Head and Neck Pathology* 17 (2023): 581-586.
31. Marangon Júnior H., et al. "Oral congenital melanocytic nevus: a rare case report and review of the literature". *Head and Neck Pathology* 9 (2015): 481-487.