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## Case Report

### Doxycycline - Metronidazole Induced Black Hairy Tongue (Lingua Villosa Nigra)- A Case Report

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**Abstract:** Black hairy tongue (BHT) is a benign, self limiting condition, also known as lingua villosa nigra, characterized by the discoloration of the tongue due to deficit in desquamation and reactive hypertrophy of the filiform papillae. This condition is predominant in adults than younger individuals or child. BHT is generally asymptomatic, but nausea, metallic taste, ageusia, halitosis and tongue fullness are also reported. A number of etiologies of BHT have been proposed, including use of topical or systemic antibiotics like doxycycline, erythromycin, amoxicillin-clavulanate, metronidazole, piperacillin-tazobactam etc, use of psychotropic drugs, poor oral hygiene, trigeminal neuralgia, smoking, regular black coffee consumption, immunocompromised conditions, hyposalivation etc [1]. Prolonged use of oxidizing mouthwashes containing sodium perborate, sodium peroxide, and hydrogen peroxide has also been associated with the development of BHT. The optimal treatment of BHT is still unclear. Hereby we report a 47 year old male patient with BHT who has been successfully treated with a topical antifungal and corticosteroid treatment along with tongue hygiene instructions [1,2]. The case report is an awareness of the association with BHT and broad spectrum antibiotic, which may impose additional burden on patients, healthcare providers if failed to be recognized and treated properly.

### Case Presentation

A 47 year male patient is presented with a loss of appetite, metallic taste and chronic granulomatous ulceration on the lateral border of the tongue along with black coating on the dorsal surface of the tongue consistent with BHT, which was asymptomatic since 5 days. He gave the history of taking the prescribed Metronidazole 400 (Per Oral thrice daily ) and Doxycycline mouthwash (100 mg : 15 mL) for last 7 days. There were no signs of lymphadenopathy, rash or joint swelling. Full blood count, Hb%, renal function, liver function and viral screening were within normal range. Consequently, we concluded that the most probable diagnosis was BHT secondary to metronidazole or topical broad spectrum antibiotic Doxycycline. The oral condition was examined properly and sharp edges of teeth were found at the offending side which had been causing frictional trauma on the lateral border of the tongue. The sharp edges of teeth were removed by selective grinding and he was prescribed with anesthetic topical gel for symptomatic relief and topical application of amlexanox (5%), chlorhexidine ointment for ulceration and topical antifungal (clotrimazole) and topical corticosteroid (Triamcinolone acetonide) along with Vit A and retinoids for BHT. Patient reported after 5 days with complete remission of BHT and much better healed traumatic tongue ulcer.



Fig 1 - Antibiotic induced BHT with ulceration on the lateral border of the tongue

Fig 2 - Remission of BHT along with ulceration

## Discussion

It is thought that bacterial or fungal infection causes the discoloration of the dorsal surface of the tongue. Differential diagnosis include acanthosis nigricans, oral hairy leukoplakia, pigmented filiform papillae, Addison's disease or black staining due to food colouring. Acanthosis nigricans in the oral cavity manifests as multiple dark and demarcated papillary lesions on the dorsum and lateral region of the tongue with frequent labial involvement and may be associated with underlying malignancy [3,4]. Different reports suggested that *Bacillus subtilis* or *Candida* sp infections may cause BHT. Based on animal experiments, it has been suggested that *Bacillus subtilis* varietas *niger* infection causes BHT [5,6].

Prevention and treatment of BHT includes avoiding risk factors, and practicing good oral hygiene especially brushing the posterior tongue. Many treatment modalities have been proposed till date like use of antifungals (Fluconazole), corticosteroids, third generation Cephalosporin- Cefditoren, vitamin preparations etc. Lifestyle modifications, including aggressive oral hydration are important and increased dietary consumption of raw fruits and vegetables may help improve this condition by facilitating the roughage on the tongue [7,8]. Anecdotal use of antimicrobial therapies, topical triamcinolone acetonide, gentian violet, salicylic acid, vitamin B complex, thymol, and topical or oral retinoids (e.g., isotretinoin), as well as keratinolytics (podophyllin), topical 30% urea solution, and trichloroacetic acid have been reported in the literature. Sometimes, it exhibits self remission after stoppage of broad spectrum antibiotics. Gentle debridement with a soft toothbrush or tongue scraper to promote desquamation of the hyperkeratotic papillae. Topical application of baking soda or rinsing with diluted hydrogen peroxide solution may help improve desquamation of the keratinized filiform papillae and bleach the color [9,10].

## Conclusion

Antibiotic induced black hairy tongue is a common entity, though it can provoke anxiety episodes to patient and health care professional both. So, a comprehensive history of habits, examination, drug history review is essential as causes of BHT could range from simple poor oral hygiene to more sinister conditions like malignancy and immunocompromised conditions like HIV. Antibiotic induced BHT demands reassurance, promoting oral hygiene practice and regular follow up.

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