



## CASE STUDY

### HAIRY TONGUE : A CASE REPORT AND REVIEW OF LITERATURE

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#### ABSTRACT

Hairy tongue (HT), also known as "lingua villosa nigra", is a benign and reversible condition and is characterised by marked accumulation of keratin on the filiform papillae of the dorsum of the tongue resulting in a hair-like appearance. The Color of the papillae may vary from brown to black. Here we report a case of hairy tongue in a 45 year old male patient.

## INTRODUCTION

Black hairy tongue is an acquired, painless, benign and reversible condition characterized by abnormal hypertrophy and elongation of filiform papillae on the dorsal surface of the tongue. Originally described by Amatus Lusitanus in 1557, as hairs on the tongue that would regrow upon being removed (Sumanth *et al.*, 2011). Hair-like appearance, due to marked accumulation of keratin on the filiform papillae of the dorsal tongue, which may have different color, varying from white to yellowish, brown to black or even green and blue depending on the extrinsic factors (eg. tobacco, coffee, tea, food, drugs) and intrinsic factors (chromogenic organisms in normal microflora) also superimposed by candidal hypae (Sumanth *et al.*, 2011; Athanasios *et al.*, 2008). Black hairy tongue has also been referred to as hyperkeratosis of the tongue, lingua villosa nigra, keratomucosis linguae, nigrites linguae and melanotrihia lingua (Sumanth *et al.*, 2011). The course of black hairy tongue is usually asymptomatic, but it can be present with nausea, halitosis, dysgeusia and gagging (Gurvits *et al.*, 2014; Khasawneh *et al.*, 2013). Patients with this disorder may experience both physical discomfort and esthetic embarrassment and typically causes frequent dental office visits. Its etiology and pathophysiology have not been fully

elucidated and are likely multifactorial. Predisposing factors, such as neglected oral hygiene, a shift in the microflora, excessive alcohol consumption, therapeutic radiation and certain medications. Visual inspection is often sufficient for diagnosis (Khasawneh *et al.*, 2013; Mehmet Akif Camkurt *et al.*, 2015). Overall prognosis is excellent as the disease is largely self-limiting and rarely requires procedural intervention. This paper, reports a black hairy tongue in a 45 year old man.

### Case report

A 45 year old male patient visited to the department of oral medicine and radiology with a chief complaint of pain in left lower back tooth region for past 2 days. Medical history was non-contributory. Personal history, he has been smoking 4 cigarettes per day for past 20 years. Intraoral examination showed poor oral hygiene with generalized stains and calculus present. On soft tissue examination, the buccal mucosa, labial mucosa, palate showed no abnormalities, but there was a yellowish brown to brownish black discoloration, that appears as an elongation of the filiform papillae on the dorsum of the tongue that spared the tip of the tongue (Figure 1 & 2). The discoloration and elongated papillae could not be wiped by gauze. On hard tissue examination, root stumps was present in relation to 37, 38. Clinical diagnosis is based on filiform papillae that are elongated more than 3mm on the dorsal

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surface of the tongue. Infected root stumps was extracted in relation to 37, 38 under LA and antibiotic coverage. Oral prophylaxis was done, stains and calculus were removed. The patient was treated with topical clotrimazole (Mouth paint) 3-4 times per day, chlorhexidine mouth wash twice daily and oral hygiene instructions were given, advised to brush teeth and tongue twice daily and to quit the habit, most of the oral lesion diminished after the treatment.

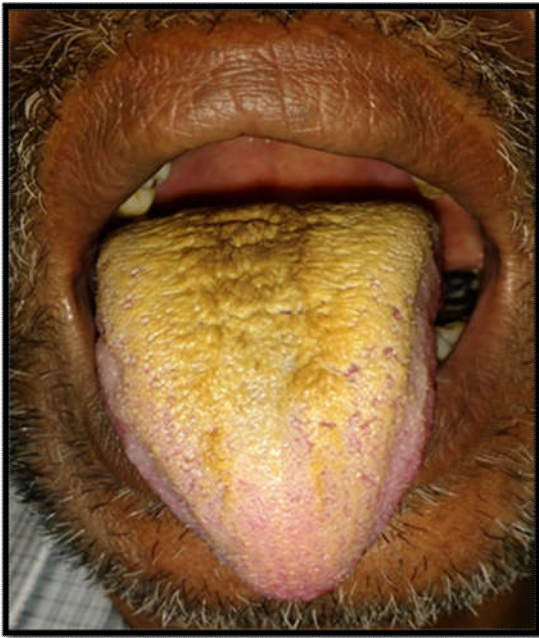


Figure 1. Hairy tongue on the dorsal surface



Figure 2. Hypertrophy and elongation of filiform papillae on dorsal surface

## DISCUSSION

Black hairy tongue, also known as lingua villosa nigra, abnormal coating of the tongue. It is found in about 0.5% of the population but varies widely from 8.3% in children and young adults, 57% in prisoners and drug addicts (Sumanth *et al.*, 2011). It typically affects the dorsum of the tongue, which is divided into the oral (presulcal part) and the pharyngeal (postsulcal part) by the V-shaped sulcus terminalis. Lingual papillae are protrusions of dorsal mucosa on the

presulcal part of the tongue. Four main types of lingual papillae are filiform, fungiform, foliate, and circumvallate papillae. Filiform papillae densely cover most of the presulcal dorsal tongue and are chiefly affected in black hairy tongue. Appears as a small conical or cylindrical protrusions consisting of a central body surrounded by numerous threadlike cornified projections named as secondary papillae. They function to increase friction between the tongue and food and move particles within oral cavity. Pathophysiology of black hairy tongue has not been fully elucidated. It is thought to arise from defective desquamation of the dorsal surface of the tongue, which prevents normal debridement, leading to accumulation of keratinized layers, results in a hair-like appearance. Normally less than 1 mm in length but the elongated papillae can reach a length of 12-18 mm and width of 2 mm. These then secondarily collect fungi, bacteria, and debris. According to Manabe *et al.* using antikeratin probes on hairy tongue epithelium, found that the “hairs” are highly elongated cornified spines that result from delayed desquamation of the cells in the central column of filiform papillae and marked retention of secondary papillary cells that expressed hair-type keratins (Gurvits and Tan, 2014; Mehmet Akif Camkurt *et al.*, 2015; Partha Pratim Chakraborty *et al.*, 2013). Histology manifests as elongated hyperkeratotic filiform papillae and multiple colonies of microorganisms (Athanasios K Pouloupoulos *et al.*, 2008). Different colours of the elongated papillae may be due to extrinsic factors (i.e. tobacco, coffee, tea, food, drugs) or intrinsic factors (i.e. chromogenic microorganisms of the oral microflora) also superimposed by candidal hyphae. It is possibly due to some change in the local oral environment, although it is not known whether this is a physical or chemical change in the saliva itself or a change in the microbial floral (Sumanth *et al.*, 2011; Athanasios K Pouloupoulos *et al.*, 2008). A possible association between the cigarette smoking habit and poor oral hygiene of the elderly man was suspected in our case.

Differential diagnosis includes “pseudo-hairy tongue”, oral hairy leukoplakia, pigmented fungiform papillae of the tongue and acanthosis nigricans. “Pseudo-black hairy tongue” appears as a darkly stained tongue in absence of elongated filiform papillae seen in black hairy tongue. Oral hairy leukoplakia can be seen in the immunocompromised patients and has a white plaque appearance on the ventral and dorsal surfaces of the tongue, as well as buccal mucosa, and gingiva. Pigmented fungiform papillae (due to melanin laden macrophages), characterized by isolated hypertrophied lesions on the lateral aspect and apex of the tongue that has a tendency to dark skinned patients. Acanthosis nigricans in the oral cavity presents 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. Thorough history and physical examination is essential to arrive at the correct diagnosis, with particular significance on identifying known etiologic factors (Gurvits and Tan, 2014). Black hairy tongue is a benign condition with no serious sequelae. Predisposing factors should be eliminated and oral hygiene should be encouraged. Desquamation of the hyperkeratotic papillae can be nurtured by periodic scraping or brushing with a toothbrush or tongue scraper. In few cases, topical retinoids, oral retinoids, topical triamcinolone

acetone, gentian violet, salicylic acid, vitamin B complex and 40% urea solution, keratolytic agents such as podophyllin, 3% hydrogen peroxide or baking soda (Khasawneh *et al.*, 2013), surgical excision of the papillae and anti-candidal drugs have been reported to be successful in the treatment of black hairy tongue (Athanasios *et al.*, 2008; Ken Kobayashi *et al.*, 2010). Patient education on proper oral hygiene and lifestyle modifications including smoking cessation and alcohol abstinence are vital to prevent recurrence (Gurvits and Tan, 2014).

### Conclusion

In conclusion, patients with hairy tongue typically present with indolent self-limited course that responds well to local treatment. Management is primarily focussed on mechanical debridement, maintenance of proper oral hygiene and removal of potential causative agents. Overall, clinical prognosis of hairy tongue is excellent.

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