

Psychotropic Agent-Induced Black Hairy Tongue

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Black hairy tongue is characterized by an abnormal coating of the dorsal surface of the tongue. Although the cause is unknown, several precipitating factors may be implicated in the pathogenesis of this disorder. A case is presented in which black hairy tongue appeared subsequent to the administration of fluoxetine hydrochloride, thiothixene hydrochloride, benztropine mesylate, and clonazepam for bipolar affective disorder.

Black hairy tongue (BHT), also known as *lingua villosa nigra*,¹ is a benign disorder characterized by hypertrophy of the filiform papillae of the tongue, resulting in a brownish-black discoloration of the papillae. The pathogenesis of BHT is an enigma, but predisposing factors have been identified.² A case of BHT appearing after the administration of psychotropic agents is presented.

Case Report

A 36-year-old man complained of an abnormal appearance of his tongue of 8 months' duration. The patient noted a bad taste in his mouth. His medical history was remarkable for treated hypothyroidism and bipolar affective disorder diagnosed prior to his presenting problem. Shortly before the onset of his oral complaint, he was prescribed fluoxetine hydrochloride, thiothixene hydrochloride, benztropine mesylate, and clonazepam. There was no history of diabetes mellitus or antibiotic use. The patient smoked less than one pack of cigarettes per day and denied imbibing alcohol. He attempted to treat his condition by brushing it with a toothbrush and baking soda, without any obvious improvement. Physical examination demonstrated a dark brown, "furry," dorsal surface of the tongue distal to the circumvallate papillae (Figure 1). A diagnosis of BHT was rendered. Tretinoin gel 0.025% administered with brushing was prescribed. Follow-up examination 3 months later revealed significant improvement of the condition.

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FIGURE 1. A dark brown, "furry," dorsal surface of the tongue, characteristic of black hairy tongue.

Comments

BHT is an abnormal coating of the tongue resulting from hyperkeratosis of the filiform lingual papillae.³ The condition was originally described in 1557 by Amatus Lusitanus, who observed hairs on a man's tongue that, when "pulled out would renew themselves."¹ Scanning electron microscopy has demonstrated that the hairs consist of elongated filiform papillae due to accumulated keratinized layers. In between these layers, fungi and bacteria were found. Cultures of the tongue in the patient studied by Harada and Gaafar⁴ demonstrated *Candida albicans* and *Staphylococcus aureus*. Clinically, the tongue appears "hairy" with the color varying from yellow-brown to black. Although BHT is usually asymptomatic, gagging, nausea, or alteration of taste may be noted.³ Halitosis may also accompany BHT.⁵

The pathogenesis of BHT is unknown, although several factors have been implicated. Antibiotics such as tetracycline⁵ and amoxicillin⁶ may be responsible. BHT has been reported in patients using toothpaste that contains neomycin.⁷ Other putative factors include poor oral hygiene, smoking, alcohol, and the use of mouthwashes (Table I).³

Table I

Predisposing Factors for Black Hairy Tongue

Poor oral hygiene
Smoking
Alcohol
Oxidizing agents in mouthwashes (ie, sodium perborate, sodium peroxide, and hydrogen peroxide) ²
Radiation therapy ²
Medications
Antibiotics (ie, tetracyclines, penicillins, neomycin)
Corticosteroids ¹⁴
Psychotropic agents (ie, phenothiazines, thioxanthenes, benzodiazepines, and serotonin uptake inhibitors)
Anticholinergic agents

The patient described developed BHT following the administration of psychotropic agents for bipolar affective disorder. Phenothiazines have been reported to be associated with BHT.^{1,2} Although smoking and questionably poor dental hygiene may have been partially responsible, BHT was not present until the administration of the psychotropic agents. Benzodiazepines such as halazepam may cause a dry mouth.⁸ According to the Physicians' Desk Reference, clonazepam is a benzodiazepine with which a coated tongue has been listed as an adverse reaction. A review of MEDLINE (OVID) did not reveal any references on this subject. Thiothixene hydrochloride is a thioxanthene series psychotropic agent with similarities to the piperazine phenothiazines; autonomic effects of thiothixene hydrochloride include dry mouth.⁹ Bzotrope mesylate is a synthetic atropine used as adjunctive therapy in parkinsonism and also to control extrapyramidal disorders due to neuroleptic drugs. Anticholinergic effects include xerostomia.¹⁰ Fluoxetine hydrochloride is an antidepressant and anti-obsessive-compulsive disorder agent linked to the inhibition of central nervous system neuronal uptake of serotonin. The drug has been associated with dry mouth.¹¹ These four psychotropic agents were administered simultaneously in this patient, with BHT appearing within several months. Presumably the xerostomia, which is an adverse reaction of each of these drugs, may have played a pathogenic role in the development of BHT. Ethical considerations pre-

cluded discontinuation of these medications with subsequent rechallenge to induce BHT.

This patient's disorder improved greatly with the use of tretinoin 0.025% gel applied with a toothbrush to the tongue. Topical retinoids have been reported to be successful in the treatment of BHT³ as have oral retinoids such as isotretinoin.¹² Other therapeutic options may include topical triamcinolone acetonide, gentian violet,¹ salicylic acid, vitamin B complex, and surgical excision of the papillae.³ A 40% urea solution has also been of value.¹³

In conclusion, BHT may be associated with psychotropic agents with which xerostomia is a potential adverse reaction. The presentation of BHT in this patient did not preclude the continued administration of these drugs, as this condition was treated successfully by a topical agent such as tretinoin.

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