

Case report

Tobacco-associated yellow discoloration of upper lip hair: smoker's mustache

Bryce D. Beutler BS¹ and Philip R. Cohen MD²

Dermatology Online Journal 21 (5): 2

¹University of Nevada, Las Vegas, School of Allied Health Sciences

²Division of Dermatology, University of California San Diego, San Diego, CA

Correspondence:

Bryce D. Beutler, BS
1060 Wiegand Road
Encinitas, CA 92024
brycebeutler@hotmail.com

Philip R. Cohen, MD
10991 Twinleaf Court
San Diego, CA 92131
mitehead@gmail.com

Abstract

Background: Hair is susceptible to exogenous sources of discoloration. There are several exogenous etiologies for yellow hair discoloration, including tobacco.

Purpose: We describe the clinical features of five men with tobacco-associated yellow discoloration of their mustache, a condition known as "smoker's mustache." We also review the characteristics of men with tobacco-associated yellow discoloration of their scalp or mustache hair.

Materials and methods: The features of five men with smoker's mustache are presented. Using PubMed, the following terms were searched and relevant citations assessed: 4-4'-methylenedianiline, acid, dithranol, MDA, mustache, nicotine, picric, resorcin, smoker, tar, tobacco, and yellow. In addition, the literature on smoker's mustache is reviewed.

Results: Smoker's mustache was an incidental finding and not the reason for patients presenting for medical attention. The condition was asymptomatic. In our patients, 60% (3 of 5) also had tobacco-related clinical findings on the distal soft tissue and/or nails of their fingers.

Conclusion: Smoker's mustache refers to tobacco-associated discoloration of the hair of the upper lip of men. It is an asymptomatic condition that usually presents as an incidental finding. Indeed, patients tend to be unaware of the condition until it is brought to their attention. In addition to hair manifestations, patients may also demonstrate other tobacco-associated skin and nail findings, particularly brown or yellow-brown discoloration of their fingertip and/or fingernail. We postulate that discontinuation of smoking would eventually result in spontaneous resolution of the condition. However, all of our patients were determined to continue smoking.

Keywords: 4-4'-methylenedianiline, acid, dithranol, MDA, mustache, nicotine, picric, resorcin, smoker, tar, tobacco, yellow

Introduction

Yellow discoloration of upper lip hair has been observed in men who smoke tobacco products, including cigarettes, pipes, and cigars. The condition, known as "smoker's mustache," is thought to be associated with tobacco products, such as nicotine and tar. It most commonly affects Caucasian men with light-colored hair. In some patients, tobacco-associated brown or yellow-brown pigmentation of the fingertips, fingernails, or both may also be present. Smoker's mustache is entirely benign; in fact, patients are often unaware of the yellowing of their mustache until it is brought to their attention.

Case synopsis

Case 1. A 71-year-old man presented for evaluation of several keratotic plaques on his face and scalp, which were diagnosed and treated as actinic keratoses. In addition to the keratotic plaques, cutaneous examination revealed yellow discoloration of his mustache. The yellowing affected all of the hair of his upper lip but spared both his beard and his scalp hair. The patient stated that he had been smoking cigarettes for over forty years and had been smoking a pipe for at least six hours per day for the previous 6-7 years. Notably, there was also yellow-brown discoloration on the tip of his right index finger; the patient explained that he used his right index finger to pack tobacco into his pipe (Figure 1).



Figure 1 (a, b, and c). Prominent yellowing of the mustache (a) and index finger (b) of a 71-year-old man who smokes both a pipe and cigarettes. The yellow-brown staining of the index finger corresponds to the finger the man uses to pack pipe tobacco (c).

Case 2. A 65-year-old man presented for evaluation with a scaly rash on his left lower leg, which was diagnosed as contact dermatitis caused by an elastic bandage. A complete head-to-toe skin examination revealed prominent yellowing of the central

portion of his mustache. The yellow discoloration spread bilaterally along his mustache, becoming gradually less distinct toward the distal ends. Staining of his right index fingernail was also observed (Figure 2). The man stated that he had been smoking cigarettes for nearly fifty years. However, he had been unaware of the yellow discoloration until it was demonstrated to him during that clinic visit.



Figure 2 (a and b). Close view of yellow discoloration of the mustache of a 65-year-old man with a fifty-year history of smoking (a). Yellow-brown staining of his right index fingernail was also observed (b).

Case 3. A 63-year-old man presented for evaluation of keratotic plaques on his face and central chest; the lesions were determined to be actinic keratoses and were treated using liquid nitrogen cryotherapy. Examination also revealed a 5 x 5 millimeter papule on his medial left cheek that was suspicious for malignancy; pathology showed a basal cell carcinoma. In addition to the aforementioned lesions, yellow discoloration of his mustache was observed, most prominently in the area directly below his nostrils (Figure 3). The patient stated that he had been smoking one pack of self-rolled cigarettes per day for the past fifty years.

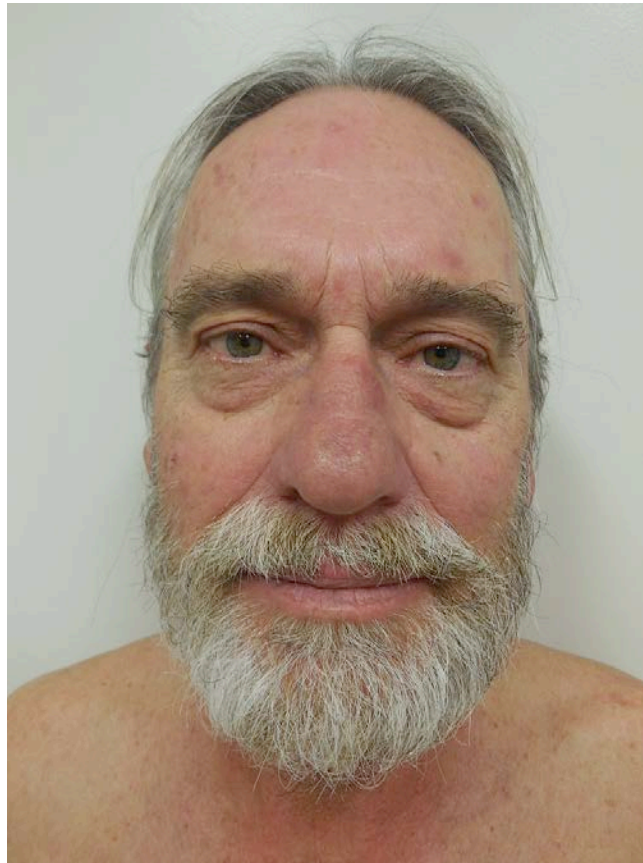


Figure 3. Distant view of mustache yellowing of a 63-year-old man with a 50 pack-year smoking history. The discoloration is most noticeable on the area of the mustache directly below his nostrils.

Case 4. A 58-year-old man presented for evaluation of verrucous plaques on the plantar aspect of his left foot; biopsy confirmed the suspected diagnosis of plantar verrucae. Cutaneous examination also showed yellow discoloration of his mustache (Figure 4). The patient stated that he had been a smoker for approximately forty years, smoking one and a half packs of cigarettes a day since age 18.



Figure 4. Close view of the smoker's mustache of a 58-year-old man.

Case 5. A 54-year-old man, who had a history of chronic obstructive pulmonary disease and emphysema, presented with pruritic erythematous plaques of dermatitis on his arms; they were successfully treated with 0.1% triamcinolone cream. In addition, there was yellow staining of his mustache as well as prominent yellow-brown discoloration on his distal left index and middle fingers and fingernails (Figure 5). The patient stated that he had smoked one pack of cigarettes per day for 42 years.



Figure 5. Yellowing of the digits of a 54-year-old man with a 42 pack-year smoking history. The nail of the left index finger and the distal soft tissue of the left index and middle fingers show yellow-brown staining.

Discussion

Exogenous causes of hair discoloration can result in different colors: blue, green, mahogany, purple-brown, reddish-brown, and yellow [1]. Yellow discoloration of hair has been attributed to several etiologies (Table 1) [2-6].

Table 1. Causes of yellow hair discoloration

Chemical agent	Source
Dihydroxyacetone (DHA) [2]	Self-tanner
Dithranol [3]	Topical cream or ointment (for psoriasis)
4-4'-methylenedianiline (MDA) [4]	Plastics production
Nicotine [5]	Tobacco products (used in cigarettes, cigars, and pipes)
Picric acid (formerly 2,4,6-trinitrophenol or TNP) [3]	Antiseptics, dyes, and explosives
Resorcin [6]	Adhesives, antiseptics, photography, and topical erythematous eczema solution
Selenium sulfide [2]	Shampoo (for seborrheic dermatitis)
Tar [3]	Tobacco products (used in cigarettes, cigars, and pipes)

In 1986, Ebling et al. noted that "yellow or yellow-brown discoloration of white or grey hair by cigarette smoke is very common [3]." However, there is a paucity of reports of tobacco-associated yellow hair discoloration in the dermatological literature. It is possible that the majority of patients are not cognizant of the discoloration and therefore do not seek medical evaluation. Indeed, none of our patients were aware of the yellowing of their mustache until it was demonstrated to them. Tobacco-associated yellow hair discoloration has been observed in both the scalp hair and the upper lip hair of men.

In 1990, Kellen et al. described a 63-year-old Caucasian man with grey hair and a prominent yellow forelock. The man had smoked a pipe for over 15 years, consuming approximately ten ounces of tobacco per week. Analysis of the yellow forelock revealed elevated nicotine content; a sample of hair from the site of the yellow forelock had more than four times the nicotine content of hair taken from the back of the scalp. In addition to the yellow forelock, the man reported painless vision loss that had been progressing for two months prior to presentation. The authors concluded that the yellow hair discoloration was a new neuro-ophthalmological sign that could be used to help establish a diagnosis of tobacco-related amblyopia [5].

The term "smoker's mustache" was introduced by Dimmick and Wagner in 2006. They described a 55-year-old, white-haired Caucasian man with a 26 pack-year smoking history who developed a "peculiar yellowish pigmentation" on the hairs of his mustache. Notably, the yellowing corresponded to the area directly above where he held his cigarettes. The man was counseled to stop smoking. However, no follow-up appointment was scheduled [1].

Table 2 summarizes the clinical features of five men with smoker's mustache. Each of our patients presented for evaluation of other dermatological issues. In fact, all five were unaware of the yellow discoloration of their mustache until it was brought to their attention during their office visit. Similar to previous reports of tobacco-associated hair discoloration, all of our patients were Caucasian and had white or light-colored facial hair.

The yellow discoloration observed in smoker's mustache typically begins in the central portion of the mustache and spreads bilaterally. Often, a minimum of 50% of the mustache is involved. However, in some patients, only a small portion of the mustache is affected. In 60% (3 of 5) of our patients, one or more of the digits on the dominant hand had brown or yellow-brown discoloration of the nail, distal fingertip, and/or both. Therefore, examination of the fingers -- in addition to the mustache -- may provide collaborating clinical findings supportive of tobacco-induced hair discoloration.

Table 2. Clinical features of five men with smoker's mustache

Case	Age	Race	Pack-year history	Tobacco source	Percent of mustache affected	Digit involvement

1	71	Caucasian	105	Cigarettes and pipe	100%	Yes
2	65	Caucasian	49	Cigarettes	50-75%	Yes
3	63	Caucasian	50	Self-rolled cigarettes	25-50%	No
4	58	Caucasian	60	Cigarettes	50-75%	No
5	54	Caucasian	42	Cigarettes	25-50%	Yes

The mechanism of pathogenesis for tobacco-associated hair discoloration remains to be determined. Tobacco smoke contains over 7,000 different chemical compounds, including nicotine and tar [7]. However, the amount of nicotine in cigarettes only ranges from 1 to 2.5% of tobacco weight [8]. Interestingly, electronic cigarettes emit vaporized nicotine [9], yet -- to the best of our knowledge -- no patients with yellow hair discoloration have been reported associated with these devices. Therefore, we speculate that the cause of tobacco-associated yellow hair discoloration may be multifactorial: either secondary to nicotine, tar, and/or both substances in combination with some of the other chemical additives that are present in tobacco. Smoker's mustache is a cosmetic condition. We suspect that cessation of smoking would result in the growth of new hair without discoloration and the problem would therefore resolve spontaneously. However, none of our patients were agreeable to quit smoking.

Conclusion

Smoker's mustache is a benign condition characterized by yellow discoloration of upper lip hair. It occurs predominantly in men with white or light-colored hair and has been associated with both cigarette and pipe smoking. In some patients, yellow or yellow-brown discoloration of the fingertips, fingernails, or both has also been observed. Treatment options for smoker's mustache have not been described in the medical literature. However, the condition would likely resolve spontaneously with the growth of new hair provided that the patient stops smoking.

References

1. Dimmick JR, Wagner RF Jr.: A patient with a smoker's mustache. *Res Staff Phys.* 2006;52(4):23-25. (No PMID).
2. Prevost N, English JC 3rd.: Xanthotrichia (yellow hair) due to selenium sulfide and dihydroxyacetone. *J Drugs Dermatol.* 2008;7(7):689-691. [PMID: 18664164].
3. Ebling FJG, Dawber RPR, Rook A: Chapter 53 - The Hair. In: *Rook/Wilkinson/Ebling Textbook of Dermatology*, Volume 3, 4th edition. Oxford, Blackwell Science: 1986;1937-2037.
4. Cohen SR: Yellow staining caused by 4,4'-methylenedianiline exposure. Occurrence among molded plastics workers. *Arch Dermatol.* 1985;121(8):1022-1027. [PMID: 4026338].
5. Kellen RI, Schrank B, Burde RM: Yellow forelock - a new neuro-ophthalmological sign. *Br J Ophthalmol.* 1990;74(8):509-510. [PMID: 2390530].
6. Cline DJ: Changes in hair color. *Dermatol Clin.* 1988;6(2):295-303. [PMID: 3288386].
7. Benjamin RM: Exposure to tobacco smoke causes immediate damage: a report of the Surgeon General. *Public Health Rep.* 2011;126(2):158-159. [PMID: 21387941].
8. Kozlowski LT, Mehta NY, Sweeney CT, Schwartz SS, Vogler GP, Jarvis MJ, West RJ: Filter ventilation and nicotine content of tobacco in cigarettes from Canada, the United Kingdom, and the United States. *Tob Control.* 1998;7(4):369-375. [PMID: 10093170].
9. Hahn J, Monakhova YB, Hengen J, Kohl-Himmelseher M, Schussler J, Hahn H, Kuballa T, Lachenmeier DW: Electronic cigarettes: overview of chemical composition and exposure estimation. *Tob Induc Dis.* 2014;12(1):23. [PMID: 25620905].