



## Clinical Image

# Black hairy tongue caused by metronidazole

Yu Niiyama <sup>a,b</sup>, Ryota Hase <sup>ID a,b,\*</sup>

<sup>a</sup> Department of Infectious Diseases, Japanese Red Cross Narita Hospital, Narita, Chiba, Japan

<sup>b</sup> Department of Infectious Diseases, Kameda Medical Center, Kamogawa, Chiba, Japan

### ARTICLE INFO

#### Article history:

Received 27 August 2021

Accepted 13 September 2021

Available online 8 October 2021

An 82-year-old woman complained of fever, headache, and left hemiplegia. She has past medical histories of hypertension and brain infarction. CT scan revealed brain abscess. Hence, she underwent surgical drainage and antimicrobial treatment with ceftriaxone and metronidazole. On hospital day 28, she manifested anorexia and nausea, with black discoloration of her tongue (Fig. 1A). We suspected antibiotic-induced black hairy tongue (BHT) and thereby discontinued metronidazole. Within two weeks, her anorexia, nausea, and the black discoloration of her tongue gradually improved (Fig. 1B). Therefore, she was diagnosed with BHT due to metronidazole.

BHT is a benign condition characterized by hypertrophy and lengthening of the filiform papilla on the dorsal aspect of the tongue. The hair-like appearance of BHT results from the inadequate desquamation of keratin over the filiform papillae; meanwhile, its discoloration results from the presence of porphyrin-producing chromogenic bacteria or yeast, with black to blackish-brown as the most common discoloration.<sup>1</sup> Moreover, BHT is linked to various behavioral factors, such as smoking and poor oral hygiene, and the use of several medications, including antibiotics. Erythromycin, doxycycline, linezolid, penicillin, minocycline, and metronidazole reportedly cause BHT.<sup>2</sup> Generally, BHT is managed by discontinuing

the potential causative medication, modifying the predisposing factors, maintaining a good oral hygiene with tongue care to promote desquamation of the hyperkeratotic papillae.<sup>3</sup>

Patient consent for publication: Written informed consent was obtained.

### Conflicts of interest

None.



**Fig. 1 – (A) Black hair-like lesion appeared on the dorsal aspect of the patient's tongue 28 days after starting metronidazole treatment. (B) Both black discoloration and hair-like appearance on the patient's tongue were improved 14 days after discontinuing metronidazole treatment.**

\* Corresponding author at: Department of Infectious Diseases, Japanese Red Cross Narita Hospital, Narita, Chiba, Japan.

E-mail address: [hase.ryota@kameda.jp](mailto:hase.ryota@kameda.jp) (R. Hase).

<https://doi.org/10.1016/j.bjid.2021.101633>

1413-8670/© 2021 Sociedade Brasileira de Infectologia. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

REFERENCES

---

1. Schlager E, CSt Claire, Ashack K, Khachemoune A. Black hairy tongue: predisposing factors, diagnosis, and treatment. *Am J Clin Dermatol.* 2017;18:563–9.
2. Ren J, Zheng Y, Du H, Wang S, Liu L, Duan W, et al. Antibiotic-induced black hairy tongue: two case reports and a review of the literature. *J Int Med Res.* 2020;48.
3. Gurvits GE, Tan A. Black hairy tongue syndrome. *World J Gastroenterol.* 2014;20:10845–50.