

[PICTURES IN CLINICAL MEDICINE]

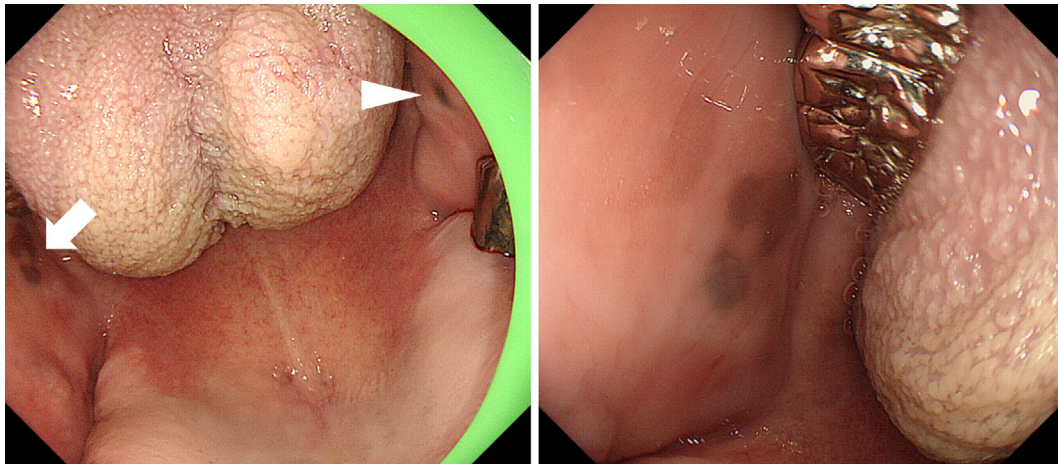
Oral Tattoos Associated with Dental Alloys

Masaya Iwamuro¹, Yoshiro Kawahara² and Hiroyuki Okada¹

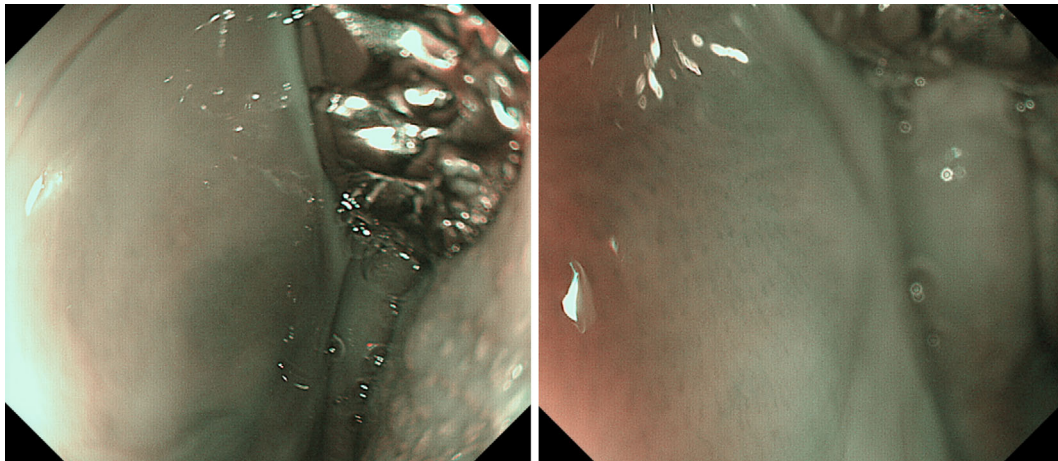
Key words: esophagogastroduodenoscopy, gold-silver-palladium alloy, melanoma

(Intern Med 59: 1331-1332, 2020)

(DOI: 10.2169/internalmedicine.4163-19)



Picture 1.



Picture 2.

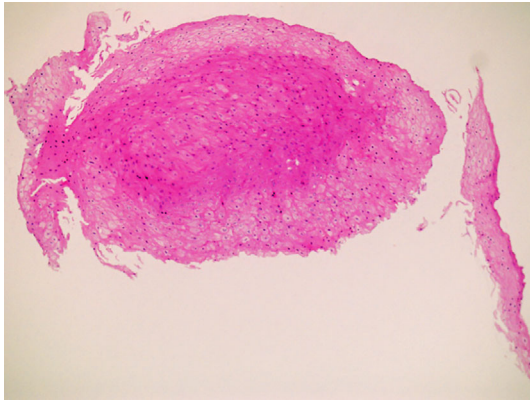
A 66-year-old Japanese man underwent endoscopic submucosal dissection for early gastric cancer. He was a social drinker and an ex-smoker who had smoked 60 cigarettes/day

for 30 years. Because of his smoking history, we chose to observe his oral cavity and laryngopharynx during esophagogastroduodenoscopy performed two years later. Our

¹Department of Gastroenterology and Hepatology, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Japan and ²Department of Practical Gastrointestinal Endoscopy, Okayama University Hospital, Japan

Received: November 11, 2019; Accepted: January 5, 2020; Advance Publication by J-STAGE: February 19, 2020

Correspondence to Dr. Masaya Iwamuro, iwamuromasaya@yahoo.co.jp



Picture 3.

assessment revealed multiple points of black pigmentation on the bilateral buccal mucosa (Picture 1). The pigmented lesions were adjacent to the metal crowns of gold-silver-palladium alloys. Magnifying observation of the lesions with white-light and narrow-band imaging (Picture 2) revealed a vague color change without irregular microvessels on the mucosa. Endoscopically biopsied tissues contained no neoplastic cells or black substance (Picture 3). We therefore diagnosed the condition as tattooing of the buccal mucosa associated with dental alloys. Dental alloys can cause exogenous pigmentation of the oral mucosae, and amalgam, an alloy of mercury with silver, is the most common cause (1). In addition, gold-silver-palladium alloy is reportedly associ-

ated with oral pigmentation resulting from the deposition of those metals (2). The present patient developed pigmentation on the bilateral buccal mucosa caused by bilateral dental alloys. We speculate that the vague color change on magnifying observation reflects histological localization of pigments in the submucosal (or deeper) layers. The deposited substances could not be detected because only the surface mucosa was obtained by an endoscopic biopsy. Nevertheless, this case reminds us that tattooing due to dental alloys should be considered when black pigmentation is observed adjacent to a metal prosthesis. In conclusion, a biopsy examination is an essential method for differentiating tattooing from melanoma, an aggressive and potentially life-threatening cancer.

The authors state that they have no Conflict of Interest (COI).

References

1. Dubach P, Caversaccio M. Images in clinical medicine. Amalgam tattoo. *N Engl J Med* **364**: e29, 2011.
2. Funayama A, Mikami T, Niimi K, et al. Electron probe microanalysis of exogenous pigmentation of oral mucosa originating from dental alloy: two case reports. *Open Journal of Stomatology* **6**: 120-126, 2016.

The Internal Medicine is an Open Access journal distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view the details of this license, please visit (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).