

A case report of oral lichenoid lesions. Are patch tests necessary?

Francisco J. Navarro-Triviño¹  | Paola M. Navarro-Rivero² | Ricardo Ruiz-Villaverde²

¹Department of Contact Eczema and Immunoallergies Diseases, Dermatology, Hospital Universitario San Cecilio, Granada, Spain

²Department of Dermatology, Hospital Universitario San Cecilio, Granada, Spain

Correspondence

Francisco José Navarro Triviño, Hospital Universitario San Cecilio, Avenida de la Ilustración, s/n CP 18016, Granada, Spain.

Email: fntmed@gmail.com

KEYWORDS: allergic contact dermatitis, amalgam, case report, mercury, oral lichenoid lesions

CASE REPORT

A 41-year-old man was referred to our Contact Eczema Department with a 5-year history of oral and lingual mucosal lesions, diagnosed as oral lichen planus. His treatment comprised oral aqueous solution of triamcinolone acetonide 0.5%, nystatin 100.000 IU, and multiple 21-day cycles of oral prednisone (0.5 mg/kg/d) for the last 3 years, without any clinical improvement. The previously performed biopsy of the right buccal mucosa was compatible with lichenoid reaction. The patient reported burning sensations worsening with hot or citrus foods. No other personal or family history of interest was reported. Of note, the patient had been treated with five non-gamma II-type amalgam fillings (composed of silver [40%], tin [<32%], copper, mercury [50% after amalgamation process], and zinc [<2%]), implanted at the age of 18. There were no tattoos.

Physical examination showed white, reticulated lesions located on the buccal (Figure 1A,B) and dorsolingual mucosa (Figure 1C). Purpuric, bullous, papular, or ulcerated areas were not observed in the oral mucosa examination, and neither lichenoid lesions on the patient's skin. Blood tests were normal, including serology for hepatitis C virus.

Patch tests were performed with the European comprehensive baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), a dental screening series, and a metal series (both Chemotechnique Diagnostics). The results were interpreted according to the criteria of the International Contact Dermatitis Research Group. Patch tests were read on day (D) 2 and D4. The patient showed positive patch test reaction to mercury 0.5% pet. (Figure 1D). Silver nitrate 1% aq., tin 50% pet., copper sulfate pentahydrate 2% pet., and zinc 2.5% pet. were negative.

Allergic contact dermatitis caused by mercury present in the amalgam fillings was diagnosed. The patient was referred to the

dentist to replace the amalgams with new ones without mercury. The examination after 3 months showed a complete resolution of the lesions, along with absence of oral symptoms, without any other treatment.

DISCUSSION

The etiology of oral lichenoid lesions includes a genetic background; autoimmune reactions; infectious agents; immunodeficiency; chronic liver disease; diabetes; drugs, chemical, trauma, stress, and food allergies; malignant neoplasms; electrogalvanism; and dental materials. The connection between allergic contact reactions to mercurial compounds released from dental amalgam was described by Frykholm et al.¹ Although oral lichenoid lesions are regarded as a precancerous condition, no malignant progression is demonstrated in oral lichenoid disease caused by dental amalgam.

Dunsche et al.² followed 467 patients with oral lichenoid lesions that originated after the implantation of amalgam fillings. The patients were classified into three groups (I-III) depending on the distribution of the lesions. Group I patients presented exclusively located lesions on the oral mucosa in contact with amalgam, group II included patients with lesions beyond the zone of contact with amalgam, and group III had lichenoid lesions without any contact with amalgam. According to this classification, our patient belongs to group II-III. Depending on the clinical characteristics, the oral lichenoid reaction can also be classified into different grades.³ The most frequent pattern is the reticular or grade 1, like our patient. Other grades are plaque like (grade 2), atrophic (grade 3), and erosive or ulcerated (grade 4).

Regarding associated symptoms, pain and burning sensation are characteristic, which worsen with some foods and spices, although

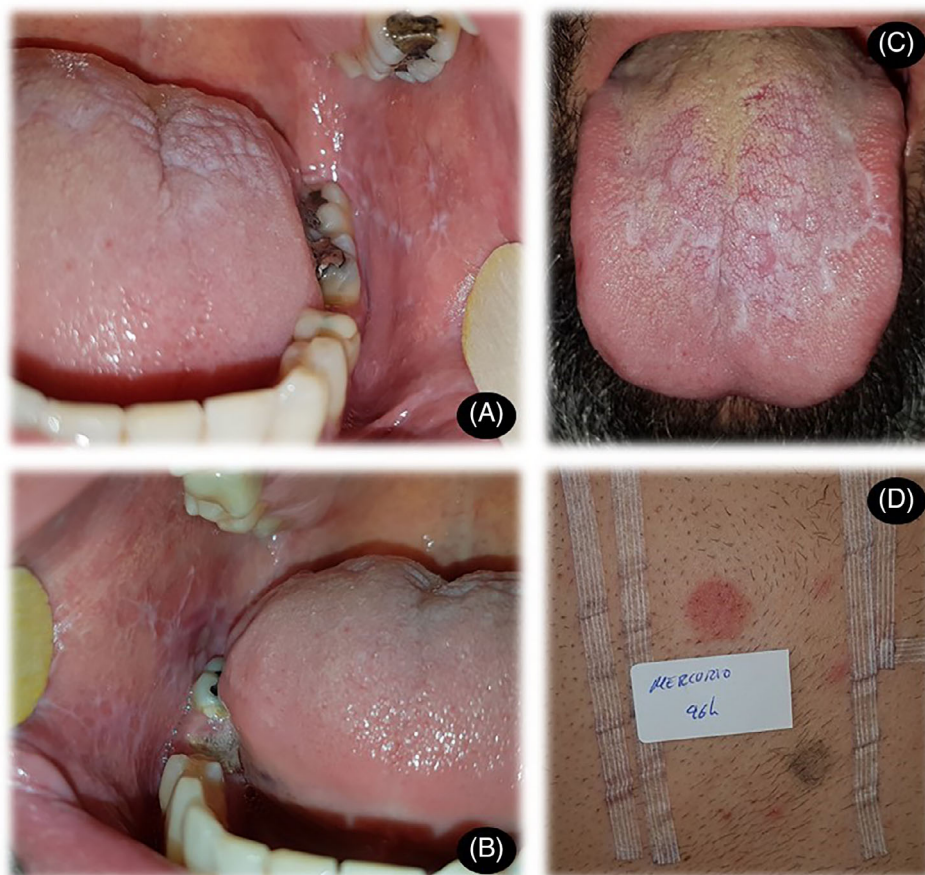


FIGURE 1 (A) Reticulated whitish patch on the left buccal mucosa. (B) Reticulated whitish patch on the right buccal mucosa (C) Reticulated whitish patch on the dorsal surface of the tongue. (D) Positive reaction to mercury 0.5% pet. on day 4

some patients remain asymptomatic. To suspect contact allergy due to dental implants, lesions on the tongue appear typical clinically.

From the clinical and histopathological point of view, it is impossible to distinguish a true oral lichen planus from an oral lichenoid reaction. Hence, a complete medical history is crucial, where factors related to lichenoid reactions can be identified. It is mandatory to ask about dental implants, recent or past, because even if they were placed years ago, they can be one of the reasons for lesions and pass unnoticed, like with our patient, who had received amalgam fillings 20 years ago.

In summary, the role of patch tests is very important for a complete study of these patients, who are often diagnosed of oral lichen planus, without any response to prescribed treatments. It is necessary to know the composition of the amalgams, as well as specifically patch the entire dental series. Among the most frequently reported allergens, mercury is the main one,⁴ followed by copper. Conventional amalgam (low in copper) and nongamma II amalgam (high in copper) are the two principal types, which are regulated by ISO standards. After patch testing and identification of the responsible allergen, the patient must be referred to the dentist to change the dental material. Amalgam can be replaced by gold composites, glass ionomer cement, porcelain, metal-ceramic crowns, or titanium. Several published articles demonstrate this is enough to produce a complete improvement of the lichenoid lesions in up to 97.1% of the cases.⁵ It is important to

keep in mind that replacing amalgam can be expensive for the patient. Therefore, patch tests are mandatory to recommend it, or otherwise.

ACKNOWLEDGEMENTS

We acknowledge all staff working in the Contact Eczema and Immunoallergies Diseases Department, especially the specialized nurse Víctor Alfredo Cassini Gómez de Cádiz.

CONFLICT OF INTEREST

None to declare.

ORCID

Francisco J. Navarro-Triviño  <https://orcid.org/0000-0002-5454-3671>

REFERENCES

1. Frykholm KO, Frithiof L, Fernström AI, Moberger G, Blohm SG, Bljörn E. Allergy to copper derived from dental alloys as a possible cause of oral lesions of lichen planus. *Acta Derm Venerol.* 1969;49(3): 268-281.
2. Dunsche A, Kästel I, Terheyden H, Springer ING, Christophers E, Brasch J. Oral lichenoid reactions associated with amalgam: improvement after amalgam removal. *Br J Dermatol.* 2003;148(1):70-76.
3. Östman PO, Anneroth G, Skoglund A. Amalgam-associated oral lichenoid reactions. Clinical and histologic changes after removal of

- amalgam fillings. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 1996;81(4):459-465.
4. Wong L, Freeman S. Oral lichenoid lesions (OLL) and mercury in amalgam filling. *Contact Dermatitis.* 2003;48(2):74-79.
 5. Ibbotson SH, Speight EL, Macleod RI, Smart ER, Lawrence CM. The relevance and effect of amalgam replacement in subjects with oral lichenoid reactions. *Br J Dermatol.* 1996;134(3):420-423.

How to cite this article: Navarro-Triviño FJ, Navarro-Rivero PM, Ruiz-Villaverde R. A case report of oral lichenoid lesions. Are patch tests necessary? *Contact Dermatitis.* 2020; 1–3. <https://doi.org/10.1111/cod.13526>