

Nummular lichenoid dermatitis from mercury dental amalgam

P. D. Pigatto¹, G. Guzzi² and P. Persichini¹

¹Department of Dermatology, University of Milan and IRCCS, Ospedale Maggiore, and

²Private Practice, Milan, Italy

Key words: allergic contact dermatitis; amalgam; mercury; nummular dermatitis; oral lichen planus.

Dental amalgam may be one of the aetiologic factors in oral lichen planus or lichenoid dermatitis (1). Dental amalgam fillings release several metal ions into the saliva, due to electrochemical corrosion (2).

A 36-year-old woman presented with an itchy lichenoid patch of dermatitis, about 1 cm in diameter, on her left cheek (Fig. 1). She reported depression, malaise, difficulty in con-

centration, and poor memory. Blood tests showed only a moderately elevated ESR and an elevation of the streptolysin-O titre.

The patient was also patch tested according to the international standards with the SIDAPA (GIRDCA) Italian series (3, 4), a dental series (Chemotechnique, Malmo, Sweden), and her own dental amalgam. She was positive (+ +) only to amalgam. Dental examination at that time showed that her posterior teeth contained 34 dental amalgam surfaces.

The patient was submitted to evaluation of mercury in saliva using flow injection atomic spectrometry–atomic absorption spectrometry (FIAS-AAS) and inductively coupled plasma mass spectrometry (ICP-MS). Saliva samples were collected in metal-free tube collectors, 5 mL of saliva to each tube, and total mercury content was determined by FIAS 200 (Perkin Elmer) AAS (Perkin Elmer 4100 ZL) and ICP-MS (Laboratory of Environmental Hygiene and Industrial Toxicology, S. Maugeri

Foundation, Pavia, Italy). The total mercury in saliva was 1.40 µg/L.

We started treatment with simple removal of amalgam restorations and replacement with ceromer fillings (5, 6). Dental restoration replacements took 5 months, but the patient began to improve after only 4 months. Results of salivary total mercury levels at 5 months showed a 40% reduction (1 µg/L). Her nummular lichenoid dermatitis, as well as psychiatric disorders, disappeared after total dental amalgam replacement (Fig. 2).

Lichenoid contact dermatitis is mainly due to para-phenylenediamine compounds used in colour film developers, but also from metals like copper, nickel and mercury (7–9). Replacement of mercury and/or copper-containing amalgam fillings has eliminated lichen planus lesions in the mouth, as well as in our case the cutaneous lesions. Although we cannot rule out the possibility that the course was affected by other factors, the evidence suggests an association



Fig. 1. Lesion on left cheek at presentation.

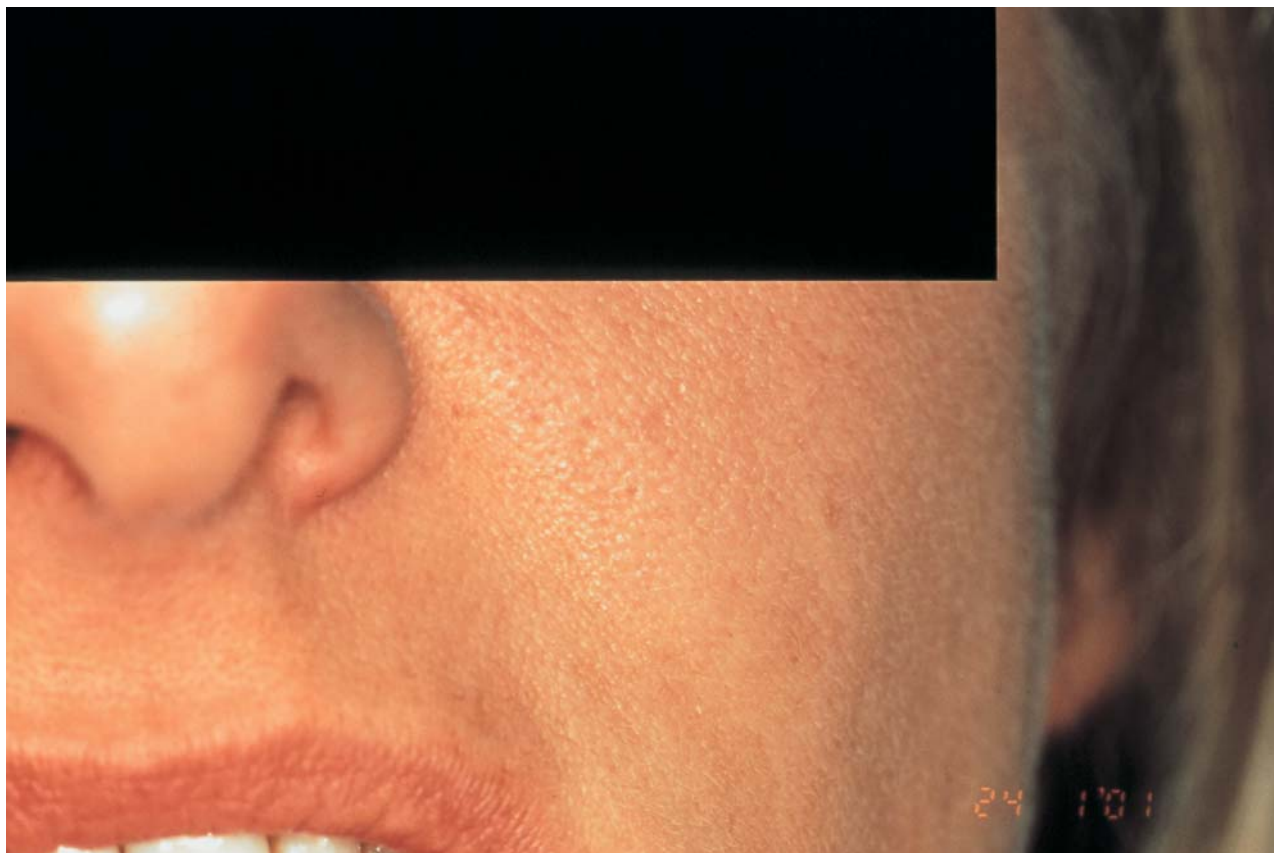


Fig. 2. Left cheek after amalgam replacement.

between dental amalgam replacement and the clearance of a nummular lichenoid dermatitis.

References

1. Koch P. Oral lesions and symptoms related to metals used in dental restorations: a clinical, allergological and histologic study. *J Am Acad Dermatol* 1999; 41: 422-430.
2. Pleva M. The dental amalgam issues, A review. *Experientia* 1991; 47: 9-22.
3. Italian Contact Dermatitis Group (GIRDCA). Announcement *Contact Dermatitis* 1984; 11: 60-84.
4. Rietschel R L, Fowler J F. Fisher's Contact dermatitis. 4th ed. Baltimore: Williams and Wilkins; 1995: p. 9.
5. Sandborgh-Englund G, et al. Mercury in biological fluids after amalgam removal. *J Dent Res* 1998; 77: 615-624.
6. Adachi A. Mercury-induced nummular dermatitis. *J Am Acad Dermatol* 2000; 43: 382-385.
7. Lombardi P, Campolmi P, Sertoli A, et al. Lichenoid dermatitis caused by nickel salts? *Contact Dermatitis* 1983; 9: 520.
8. Frykholm KO, Frithiof L, Fernström Å I B et al. Allergy to copper derived from dental alloys as a possible cause of oral lichen planus. *Acta Derm Venereol* 1969; 49: 268.
9. Laine J, Kalimo K, Forsell, et al.. Resolution of oral lichenoid lesions after replacement of amalgam restorations in patients allergic to mercury compounds. *Br J Dermatol* 1992; 126: 10.

Address:
P. D. Pigatto
Department of Dermatology
University of Milan
Milan
Italy