

LETTER TO THE EDITOR

Response to: Can patch test sensitization with gold sodium thiosulfate be ruled out?—A case report

To the Editor,

We read with interest and applaud the commitment to patient safety with which the authors present “Can patch test sensitization with gold sodium thiosulfate be ruled out?—A case report”.¹ However, we have concerns about the presentation and conclusions of this report.

First, it omits the timing of patch test readings and fails to report patch test grade according to ICDRG reading criteria.² The authors do mention, in the discussion, that the patient has oral gold alloys; however, the presence of other implants, a history of jewellery use or avoidance, etc. are not reported.

Additionally, we respectfully disagree with their conclusions. Patch test active sensitization is generally defined as a negative patch test result followed by a flare-up after 10 to 20 days, and then a positive reaction after 3 days at retesting. However, gold sodium thiosulfate (GST) is a well-described, specifically noted exception to the above definition.³ This normal delayed reaction pattern is well described,⁴ including in known GST-allergic subjects who are incapable of being actively sensitized.⁵ A late reaction to GST is a positive reaction to GST, not a “negative reaction followed by a flare”. The crescendo in patch test reaction may be explained not only by the booster effect, but also by increased serum gold levels resulting from the patient's dental gold restorations, and/or gold intake from homeopathic remedies, liquids, and food^{6–8}—all of which may decrease the minimal elicitation threshold for gold patch test reactions.⁹

Finally, it must be mentioned that gold contact allergy frequently presents as facial dermatitis, even when clear relevance is not found.¹⁰ The patient presented with facial dermatitis, has ongoing gold exposure, and developed a positive reaction to GST in a time frame characteristic for patients with known gold allergy⁵—this is consistent with gold allergic contact dermatitis (ACD) until proven otherwise. The clinical relevance—or lack thereof—can only be considered after removal of the known ongoing exposure: the dental gold.

Consider the recent report of a woman complaining of facial and flexural dermatitis with known multiple dental alloys but no oral symptoms.¹¹ She had positive patch test reactions to multiple metals—including gold. This woman's cutaneous symptoms resolved completely after removal of amalgam-containing and gold-containing oral alloys. Although the authors seem to consider “subclinical” gold sensitization from oral exposure¹² to be less plausible than active sensitization, prior investigations have found that this is exceedingly

common—asymptomatic patients (ie, without stomatitis) with gold dental restorations have positive gold patch test reactions in up to 30% of cases.¹³

The authors seem concerned about the persistent nature of the original gold patch test reaction—and the case report implies that this persistent reaction is what prompted repeat patch testing. These persistent reactions are already well reported in the literature.¹⁴ They are common, and there is no known association between persistent reactions and active sensitization. The hypothesis that gold granulomas may cause active sensitization is interesting, but not supported by this case, as this patient had a positive gold patch test reaction concomitantly with granuloma formation, and is thus incapable of de novo or “repeat” sensitization. Tumour necrosis factor- α expression is seen in both granulomatous processes and ACD.¹⁵ Its presence is non-specific and does not support active sensitization by patch testing.

As written, this case best represents a true gold-allergic patient, probably sensitized via oral gold exposure,¹² with currently unclear but possible clinical relevance warranting investigation, and a characteristic¹⁴ persistent reaction.

Conflict of interest

D. Hamann and C. R. Hamann are first-degree relatives of C. Hamann, who is CEO and owner of SmartPractice (Phoenix, Arizona), a company that produces and sells patch testing materials. M. Bruze has lectured at a patch test course arranged by SmartPractice. J. F. Fowler is a consultant for SmartPractice.

ORCID

Dathan Hamann  <http://orcid.org/0000-0003-2052-3725>

Carsten R. Hamann  <http://orcid.org/0000-0003-2011-7380>

Magnus Bruze  <http://orcid.org/0000-0002-2919-3227>

Dathan Hamann¹ 

Carsten R. Hamann² 

Curt Hamann³

Magnus Bruze⁴ 

Joseph F. Fowler Jr⁵

¹Division of Dermatology, Department of Medicine, The Ohio State University, Columbus, Ohio

²Department of Dermatology and Allergy, Herlev and Gentofte Hospital,
University of Copenhagen, Hellerup, Denmark

³Contact Dermatitis Institute, Phoenix, Arizona

⁴Department of Occupational and Environmental Dermatology, Lund
University, Skåne University Hospital, Malmö, Sweden

⁵University of Louisville School of Medicine, Department of Medicine,
Division of Dermatology, Louisville, Kentucky

Correspondence

Email: dathanhamann@gmail.com

DOI 10.1111/cod.13006

REFERENCES

- Shibata Y, Ohko K, Sano S. Can patch test sensitization with gold sodium thiosulfate be ruled out?—A case report. *Contact Dermatitis*. 2018;78:94-95.
- Uter W, Goossens A, Gonçalo M, Johansen JD. Guidelines for the presentation of contact allergy case reports. *Contact Dermatitis*. 2017;76: 107-113.
- Rietschel RL, Fowler JF. *Fisher's Contact Dermatitis*. Shelton, CT: PMPH-USA, Ltd; 2008.
- Davis MD, Bhate K, Rohlinger AL, Farmer SA, Richardson DM, Weaver AL. Delayed patch test reading after 5 days: the Mayo Clinic experience. *J Am Acad Dermatol*. 2008;59:225-233.
- Bruze M, Hedman H, Björkner B, Möller H. The development and course of test reactions to gold sodium thiosulfate. *Contact Dermatitis*. 1995;33(6):386-391.
- Ahnlide I, Ahlgren C, Björkner B, et al. Gold concentration in blood in relation to the number of gold restorations and contact allergy to gold. *Acta Odontol Scand*. 2009;60:301-305.
- Malinauskiene L, Isaksson M, Bruze M. Systemic contact dermatitis in a gold-allergic patient after treatment with an oral homeopathic drug. *J Am Acad Dermatol*. 2013;68:e58.
- Russell MA, Langley M, Truett AP III, King LE Jr, Boyd AS. Lichenoid dermatitis after consumption of gold-containing liquor. *J Am Acad Dermatol*. 1997;36(5, pt 2):841-844.
- Ekqvist S, Lundh T, Svedman C, et al. Does gold concentration in the blood influence the result of patch testing to gold? *Br J Dermatol*. 2009;160:1016-1021.
- Fowler J Jr, Taylor J, Storrs F, et al. Gold allergy in North America. *Am J Contact Dermat*. 2001;12:3-5.
- Pigatto PD, Brambilla L, Ferrucci S, Zerboni R, Somalvico F, Guzzi G. Systemic allergic contact dermatitis associated with allergy to intraoral metals. *Dermatol Online J*. 2014;20(10).
- Ahlgren C, Ahnlide I, Björkner B, et al. Contact allergy to gold is correlated to dental gold. *Acta Derm Venereol*. 2002;82: 41-44.
- Schaffran RM, Storrs FJ, Schallock P. Prevalence of gold sensitivity in asymptomatic individuals with gold dental restorations. *Am J Contact Dermat*. 1999;10:201-206.
- Andersen KE, Jensen CD. Long-lasting patch reactions to gold sodium thiosulfate occurs frequently in healthy volunteers. *Contact Dermatitis*. 2007;56:214-217.
- Hoefakker S, Caubo M, van 't Erve EHM, et al. In vivo cytokine profiles in allergic and irritant contact dermatitis. *Contact Dermatitis*. 1995;33:258-266.