Cobalt release and complications resulting from the use of dental prostheses - DTU Orbit (21/08/2019)

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**BACKGROUND:** Cobalt release from dental prostheses has been shown to elicit allergic reactions in cobalt-allergic patients. It is therefore important to investigate whether these prostheses are possible sources of sensitization.

**OBJECTIVES:** To assess (i) cobalt release from dental prostheses and (ii) allergic reactions to components of dental prostheses, and (iii) to investigate the oral mucosa for inflammation 1-5 years after insertion of the prostheses. **METHOD:** Clinical oral examination was conducted in 66 patients with 84 dental prostheses. Cobalt release from 84 functional (used) and 32 non-functional (new) prostheses was investigated with the cobalt spot test. Contact allergy was assessed by patch testing. Smear tests for Candida spp. were performed in patients showing signs of inflammation of the oral mucosa. The prostheses were assessed for biological and technical complications. **RESULTS:** None of the functional prostheses released cobalt, whereas this was observed in 24 of 32 non-functional prostheses. None of the patients had contact allergy to cobalt. Of the 66 patients, 11 showed signs of inflammation of the oral mucosa, 2 had oral candidiasis, 16 had ill-fitting prostheses, and all had insufficient oral hygiene. **CONCLUSIONS:** Dental prostheses released cobalt during the fabrication stages, but not 1-5 years after insertion. No allergic reactions were observed. Signs of inflammation were related to candidiasis, insufficient oral hygiene, and ill-fitting prostheses.