

Patch Testing with Nickel Sulfate 2.5% vs 5%, and Palladium Chloride vs Sodium Tetrachloropalladate: The McGill Experience:



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Background

The prevalence of sensitization to palladium ranges from 7% to 9% when patch testing with palladium chloride but testing with sodium tetrachloropalladate is reported to increase the detection rate by up to 50%. (1)

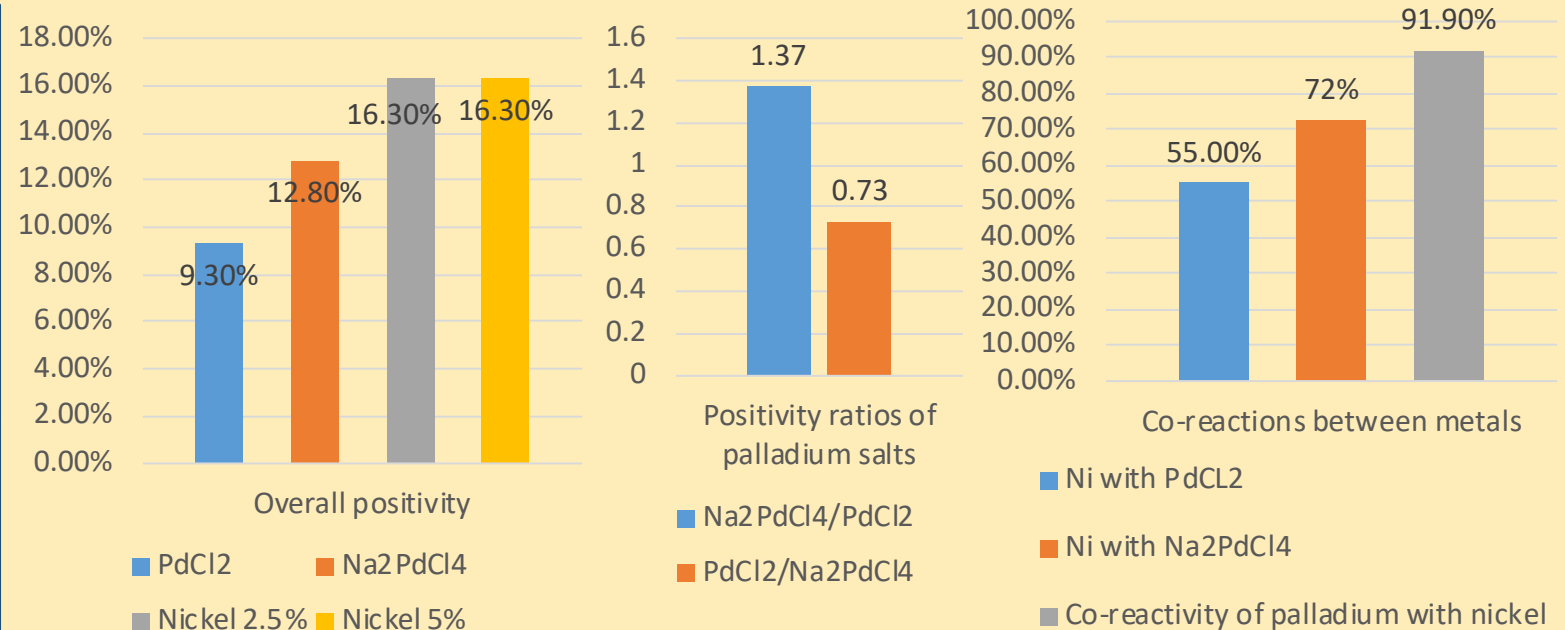
Objectives: 1) To determine which palladium salt is the optimal patch testing allergen. 2) To compare patch testing results of two concentrations of nickel sulfate. 3) To report the proportion of concomitant allergy to nickel and palladium.

Methods

From May 2019 to January 2020, 288 patients were consecutively patch tested with palladium chloride 2% pet, sodium tetrachloropalladate 3% pet, and nickel sulfate 5% and 2.5% pet. The first three allergens (Chemotechnique) were applied on IQ chambers. Nickel sulfate 2.5% was tested in the NACDG series (AllergEAZE, SmartPractice) on Finn Chambers. Readings were performed at 48 and 96 hours. Reactions $\geq 1+$ were deemed positive.

Results

- Nickel 2.5% and 5% were both positive in 47 (16.3%) patients
- Sodium tetrachloropalladate reacted in 37 (12.8%) patients
- Palladium chloride reacted positively in 27 (9.3%) patients
- 93% of palladium-positive patients co-reacted with nickel
- 55% of nickel-positive patients co-reacted with PdCl_2
- 72% of nickel-positive patients co-reacted with Na_2PdCl_4



Discussion

Our study showed no benefit of testing Nickel 5% vs 2.5%. Our results parallel previous studies (1)(2) with a 9% rate of palladium sensitization when tested with palladium chloride. Isolated allergy to palladium was rare, with only 3 patients not also reacting to nickel. However, unidirectional co-sensitization of nickel with palladium was higher than previously reported with 55% and 72% of nickel-allergic patients testing positive to PdCl_2 and Na_2PdCl_4 . Sodium tetrachloropalladate is a superior salt to detect palladium sensitization, as 37% of the cases would have been missed with palladium chloride.

References

- 1) Muris J, Goossens A, Gonalo M, et al. Sensitization to palladium in Europe. *Contact Dermatitis* 2015;72(1):11–19.
- 2) Gonzlez-Ruiz L, Vergara De Caso E, Pea-Snchez R, et al. Delayed hypersensitivity to palladium dichloride: 15-year retrospective study in a skin allergy unit. *Contact Dermatitis* 2019;81(4):249– 3.