

Cruz Eduardo*, Andrade Isabela*, Soria Jaime*, Mantilla Ronnie*, Guerrero Thomas*, Tafur Alfonso', Cherrez-Ojeda Ivan*

* RESPIRALAB
Guayaquil – Ecuador

'Department of Internal Medicine
Mayo Clinic, Rochester, MN

Introduction

Nickel is one of the most common allergen among the general population, and ranks among the top occupational sensitizers. Nickel allergy is the most frequent contact allergy.

Oral exposure to nickel may induce a systematic contact dermatitis in a dose-dependent fashion.

A major source of nickel exposure for the general population is considered to be food. The amount of ingested nickel in food and drinking water, under normal circumstances may exclusively induce a systemic reaction in a minority of nickel-allergic patients.



Skin histological sections that show irregular psoriasiform hyperplasia, spongiosis, foci of parakeratosis, superficial erosions with abundant neutrophils and bacterial colonies. The dermis shows discrete fibrosis and perivascular lymphocytic and eosinophilic infiltrate.

Clinical Case

We present the case of a 14-year old female patient with a 2-year history of nickel hypersensitivity. Past medical history was significant for asthma. She also had a history of allergy to chocolate, dry fruits and raspberry. There was history of allergy in her family. Initially she presented with two lesions in the left lower limb.



The patient was examined by a dermatologist who suspected a mixed fungal and bacterial infection, after antibiotic treatment one of the lesions disappeared but the other persisted. During this time the patient used several corticosteroid creams topically without any improvement. Due to the lack of improvement with therapy she decided to seek treatment by a homeopath that gave therapy with magnets. Following this therapy the symptoms worsened. The lesions, which up to this point were limited to the lower extremities, appeared in the upper extremities and in the face. They were papules of different sizes that coalesced forming erythematous and exudative plaques.



Mycophenolate mophetil was started at a dose of 500 mg daily. At this time dermatitis artefata was suspected, however after a thorough psychological evaluation this option was ruled out. The patient's quality of life was severely affected, to the point where she could not go to school, exposure to sun and sweating caused irritation and worsening of the lesions, so she could not practice any sports during the day.

The patient was evaluated by another dermatologist who ordered a new skin biopsy, which was suggestive of "an allergic process".

The patient was referred to an allergologist, who performed a patch test, which was positive for nickel. Following these results the patient was advised to begin nickel free diet. Food containing high nickel concentrations such as chicken, corn, bread, cereals and seafood were avoided. Mycophenolate mophetil was discontinued and Fexofenadine 180 mg BID was initiated, plus Hidroxyzine.

Conclusion

Oral exposure to nickel from food and drinking water may induce a systemic contact dermatitis and may produce erythematous-papular and/or vesicular eruptions .

Reducing the daily amount of nickel intake seems to be effective in the resolution of the lesions provoked by oral ingestion of nickel. The maximum amount of daily nickel intake is variable. If the daily intake of nickel is exceeded, the lesions reappear in a dose-dependent fashion only disappearing again with a diet low in nickel.

This pathology severely reduces the ability of the patient to engage in social and physical activities, considerably affecting their quality of life.



Improvement of the lesions after a nickel free diet.

References

- 1.- Jurij J. Hostýnek. "Nickel-induced hypersensitivity etiology, immune reactions, prevention and therapy." Arch Dermatol Res. 2002 Aug;294(6):249-67. Epub 2002 Jun 29.
- 2.- Brigitta Meding J. Epidemiology of nickel allergy. J. Environ. Monit., 2003, 5, 188–189
3. - Christian Stab Jensen, Torkil Menne, Jeanne Duus Johansen. Systemic contact dermatitis after oral exposure to nickel: a review with a modified meta-analysis. Contact Dermatitis 2006; 54: 79–87

CORRESPONDENCE:
Cherrez Ojeda Ivan
icherrez@yahoo.com