

Granulomatous contact dermatitis to palladium following ear piercing

Sir,

Contact of the skin with metals can induce several types of cutaneous reactions, mainly eczematous skin lesions. However, the increasing tendency to use metallic implants in the skin, mainly by the young populations, is leading to the appearance of other types of cutaneous reactions that can be difficult to differentiate from other infectious and noninfectious cutaneous disorders. We report a case of a granulomatous sarcoidal reaction following ear piercing, a rare complication with only incidental cases reported in the world literature.

A 26-year-old healthy man consulted us on the appearance of several cutaneous lesions since 6 months. The lesions were located in both ears and the patient stated that they had begun to appear 10 days after ear piercing. They caused occasional pain and had remained unchanged since he had first noticed them. Physical examination revealed bilateral lesions in the free margin of both auricular helices. The lesions were well-demarcated erythematous papules measuring 4 to 5 mm and showed a linear distribution corresponding to the insertion points of metallic ear-piercing [Figure 1]. The patient had no other lesions elsewhere and did not complain of any systemic symptoms. Biochemistry and hematological parameters were within normal limits, and culture of the skin lesions revealed no microorganisms.

Histopathological analysis of the skin biopsy revealed a granulomatous sarcoidal reaction [Figure 2] with negative histochemical stains (Ziehl-Neelsen and PAS). The level of angiotensin-converting enzyme was normal. The plain chest x-ray and the Mantoux test were within normal limits. The patient underwent epicutaneous contact tests with a battery of dental allergens (Sugelabor DS 1000, Chemotechnics Diagnostics, Madrid, Spain). Results were positive at 72 and 96 hours only for palladium chloride. Twenty days after skin testing, an infiltrated erythematous plaque persisted, and histological analysis after excision revealed the same sarcoidal granulomatous reaction as described for the ear lesions.

Final diagnosis was sarcoidal type granulomatous contact dermatitis due to palladium. The patient began therapy



Figure 1: Nodular lesions at sites of the metal piercings

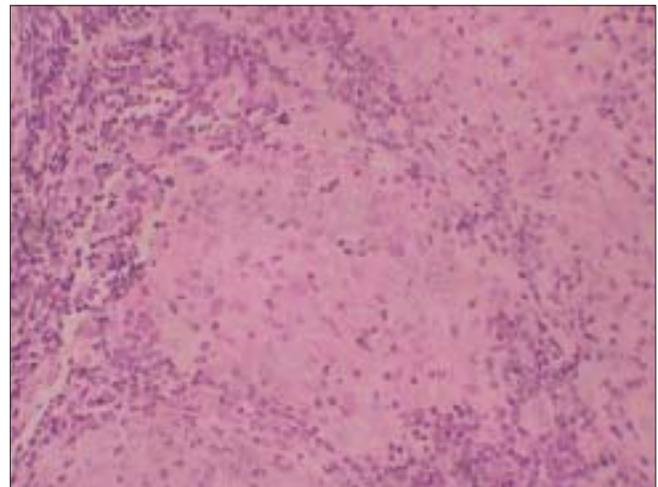


Figure 2: High-power detail of the cutaneous epithelioid non-caseating granulomas (H&E, x400)

with local steroid infiltration, and the lesions regressed completely. After 2 years of follow-up, he remains well and free of any cutaneous lesions.

Metallic ornament use is increasing, and this is leading to the more frequent appearance of cutaneous lesions of different types. In this report, we describe a granulomatous sarcoidal reaction following ear piercing, with subsequent epicutaneous testing confirming an allergic type sarcoidal granulomatous reaction against palladium.

Palladium is a metal whose use has almost doubled in recent years. It is widely used in jewelry and dentistry, although the main exposure can be attributed to its use as a catalyst for automotive control emissions.^[1] Several studies have shown an increase of the concentration of palladium

in dust and air, and this increased exposure can lead to a sensitization against this metal, even in very low doses, with risk of allergic reaction, especially in susceptible individuals. Several authors have described reactions both to nickel and palladium ions,^[1-3] which has led to the thinking that the reaction is not dependent on the element itself but rather on the formation of complexes between the ions and skin proteins.

In a literature review since the first description of this entity,^[4] we have only found 5 cases of granulomatous sarcoidal skin reactions against palladium following ear-piercing. In 3 of the cases,^[4] the patch tests revealed an allergic reaction not only against palladium but also against nickel and/or platinum; while in the 2 remaining cases, only palladium patch testing was positive. Biopsies were described as granulomatous, but at least in 2 of them, there were widespread foci of necrosis in the granulomas, which suggests a greater possibility of mycobacterial infection than a true sarcoidal lesion.^[5] In 1 of the reported cases, the patch testing site was biopsied and it showed granulomas similar to those found in our patient and seen in the original ear lesions. Allergic reaction is the most probable pathogenic mechanism for the lesions. This kind of reaction had also been previously described with other metallic ornaments, including gold and platinum.

We feel it is extremely important to recognize this source of granulomatous cutaneous lesions, for their frequency might increase following more widespread use of this kind of ornamental devices, mainly by the young. The clinical and histological differential diagnosis of these lesions is wide and includes true sarcoidosis and, in some countries like Spain, mycobacterial cutaneous infections.

Although some of the reported cases have been resistant to conventional therapies, our patient has responded well to local injections of steroids, and the lesions have regressed without any further recurrence to date.

M. J. Fernández-Aceñero, P. Fernández-López

Departments of Surgical Pathology and Dermatology, Hospital General de Móstoles, Móstoles, Madrid, Spain

Address for correspondence: MJ Fdez-Aceñero,
C/Hilarión Eslava 28, 6^o-A. 28015 Madrid, Spain.
E-mail: mjfernandez.html@salud.madrid.org

REFERENCES

1. Kielhorn J, Melber C, Keller D, Mangelsdorf I. Palladium: A review of exposure and effects to human health. *Int J Hyg Environ Health* 2002;205:7-32.
 2. Santucci B, Cristaudo A, Cannistraci C, Picrdo M. Interaction of palladium ions with the skin. *Exp Dermatol* 1995;4:207-10.
 3. Casper C, GrothW, Hunzelmann N. Sarcoidal-Type allergic contact granuloma: A rare complication of ear piercing. *Am J Dermatopathol* 2004;26:59-62.
 4. Jappe U, Bonnekoh B, Gollnick H. Persistent granulomatous contact dermatitis due to palladium body-piercing ornaments. *Contact Dermatitis* 1999;40:111-2.
 5. Goossens A, De Swerd A, De Coninck K, Snauwaert JE, Dedeurwaerder M, De Bonte M. Allergic contact granuloma due to palladium following ear piercing. *Contact Dermatitis* 2006;55:338-41.
1. Kielhorn J, Melber C, Keller D, Mangelsdorf I. Palladium: A review of exposure and effects to human health. *Int J Hyg*