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**Sarcoid-type Allergic Contact Granuloma Caused by Earrings in a Boy**

Granuloma alérgico de contacto tipo sarcoidal por pendientes en un niño

To the Editor:

The formation of cutaneous sarcoid-type allergic contact granuloma is rare and was first reported by Mann et al.\(^1\) over 20 years ago in a patient who used gold earrings. We recently studied the case of a child who developed a sarcoid-type allergic contact granuloma on the ear after wearing several earrings containing a range of metals including palladium.

The patient, an 11-year-old boy with no relevant medical history, visited his pediatrician in January 2008 with an asymptomatic papule on the lobe of his left ear. The papule had appeared 3 years earlier, specifically 3 months after the boy had started wearing an earring. The lesion was removed in the general surgery department and the patient was referred to our department with a histology report describing a “sarcoidal granulomatous infiltration with no evidence of refrigent material in the sample” (Fig. 1). Physical examination revealed a papule with residual scarring on the lobe of the left ear but there were no other relevant mucocutaneous or systemic findings. A chest radiograph and laboratory tests, including angiotensin-converting enzyme and serum and urine calcium measurements, ruled out systemic sarcoidosis.

Skin patch tests were performed using the standard series of the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC) (T.R.U.E. TEST; Mekos Laboratories), additional allergens from Chemotechnique Diagnostics, and a series of 33 metal allergens provided by Marti Tor. Readings were performed at 48, 96, and 168 hours. At 168 hours (day 7), positive reactions were observed for palladium chloride (++), platinum chloride (++), ammonium tetrachloroplatinate (++), and mercury (+). In all cases, the lesions had an eczematous appearance (Fig. 2).

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Sensitization to palladium generally manifests as eczema, but on rare occasions it can trigger the formation of sarcoid-type granulomas due to a type IV hypersensitivity reaction. Like other authors, we believe that this granulomatous reaction is related to individual factors rather than to the nature of the metal and is probably an indication that individuals sensitized to the metal have a genetic predisposition that eventually induces a cytokine release pattern that favors the recruitment of macrophages, thereby resulting in the formation of a granuloma rather than the appearance of eczema. Consequently, such individuals, just like patients who develop sarcoid-type granulomas and/or sarcoidosis following several tattoos, might constitute a risk group for systemic sarcoidosis.

On reviewing the literature, we found just 7 cases of contact allergic granuloma due to palladium in earrings; in 4 of these there was co-sensitization to nickel, which was not the case with our patient. Finally, our patient was the youngest of all the patients described in these reports, reflecting perhaps the increasing influence and popularity of piercing in young children.

References


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Table 1  Metal Composition of Earrings Brought in by the Patient (Semiquantitative Analysis).

<table>
<thead>
<tr>
<th>Earrings</th>
<th>Major Components</th>
<th>Minor Components</th>
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<tbody>
<tr>
<td>M1</td>
<td>Cu, Pb, Zn, Na, K, Fe, Al, Gd, Pd, Sn, Se, Au</td>
<td>Cr, Ni, W</td>
</tr>
<tr>
<td>M2</td>
<td>Au, Cu, Na, K, Ca, Fe, Al, Gd</td>
<td>Mg, Cr, Ni, Zn, Pd, Pb, Cd, W, Pt</td>
</tr>
<tr>
<td>M3</td>
<td>Au, Cu, Na, K, Ca, Fe, Al, Gd</td>
<td>Mg, Cr, Ni, Zn, Pd, Pb, Cd, W, Pt</td>
</tr>
</tbody>
</table>

* Earring that triggered the initial reaction.