

Short Communication

Nickel allergy in a grafted abdominal-wall flap

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Key words: allergic contact dermatitis; nickel; grafted flap skin; immunological memory. © Munksgaard, 1998.

Case Report

A 15-year-old schoolgirl developed allergic contact dermatitis at typical nickel allergy sites: the earlobes, when wearing inexpensive earrings, and the abdomen just below the umbilicus, when wearing jeans with a metal stud or belts with a metal buckle. She had a history of mild atopic eczema as a child.

About a year later, while leading a skittish horse, she caught her left thumb in the reins and suffered a degloving injury of the pulp of the thumb with exposure of the terminal phalanx. She was seen in an accident and emergency department within 2 h of the accident. The injury was treated by burying the thumb under the skin of the anterior abdominal wall just below the umbilicus. This was at the same site as her previous nickel dermatitis from a jean stud.

4 weeks later, the thumb was released with a piece of the abdominal wall flap, consisting of epidermis, dermis and subcutaneous tissue, covering the defect. The full-thickness graft was fashioned with a fair cosmetic result.

4 years later, she was referred to us with a history of a severe dermatitis on her earlobes, following the inadvisable wearing of some inexpensive earrings. At the same time, she also developed a marked dermatitis exactly in the area of the grafted flap, but not on the rest of her hands. Patch testing to our standard series showed a +++ reaction to nickel and no other positive reactions. The dermatitis cleared from her ears and the grafted skin when she stopped wearing the earrings.

Discussion

Hindson et al. (1) reported higher test reactivity to nickel in previously sensitized skin. Localization of the allergic contact dermatitis in our case might imply persistence of hapten-specific T lymphocytes in the previously sensitized abdominal wall skin. Scheper et al. (2) did demonstrate persistence of hapten-specific T lymphocytes in DNCB-sensitized skin in an experimental guinea-pig model. They felt that this demonstrated immunological memory in the sensitized skin.

In our case, the localization of the allergic contact dermatitis to the previously sensitized grafted skin might represent a similar mechanism. The other less interesting possibility is that the grafted skin was simply less robust than the rest of the skin on her hands. However, the skin was a full-thickness graft and was in fact more bulky than the surrounding skin.

References

1. Hindsom M, Bruze M, Christensen O B. The significance of previous allergic contact dermatitis for elicitation of delayed hypersensitivity to nickel. *Contact Dermatitis* 1997; 37: 101–106.
2. Scheper R J, Von Blomberg M, Van Dier A. Induction of immunological memory in the skin. Rôle of local T-cell reaction. *Clin Exp Immunol* 1983; 51: 141–148.