

Allergic and nonallergic hypersensitivity reactions to silicone: a report of one case

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Although silicones were presumed to be inert materials, immune-mediated reactions in human and animal tissues have been reported since the beginning of the use of silicone implants (1–5). Silicone has been implicated as the causative agent of chronic local or systemic reactions such as inflammatory processes, foreign-body reactions or rheumatologic diseases. However, at present, only one case of immediate-type hypersensitivity to silicone has been reported (5). We report a case of immediate pruritus, oedema and erythema upon the first insertion of a silicone nasogastric tube in a 10-year-old boy.

A 10-year-old nonatopic boy was treated with enteral nutrition through a polyurethane nasogastric tube for a severe Crohn's disease without incident during several weeks. For greater comfort considering the more flexible consistency of silicone, it was suggested that the patient try a silicone nasogastric tube. The tube was inserted without any resistance. However, a few minutes later, the patient experienced nasal and throat pruritus, erythema and mild oedema of the wings of nose and mouth, and repeated sneezing. The tube was immediately withdrawn. Symptoms rapidly decreased and totally disappeared within

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2 h without requiring medication. A polyurethane nasogastric tube was reinserted and nutrition was resumed uneventfully. No allergological work-up was performed at the time of the reaction. Two years later, the insertion of a central venous catheter for parental nutrition was required. During the preanaesthesia consultation, the allergic-like event was recalled by the parents. A work-up for suspected latex and/or silicone allergy was undertaken. Latex serum IgE determination was negative, as well as skin prick tests with latex extracts and with a silicone gel (Silisonde®, Vygon, Ecouen, France). Prick tests with silicone were also negative in three control subjects with no suggestive history of silicone allergy. Negative and positive (codeine phosphate) prick test controls (Stallergènes, Antony, France) elicited negative and positive responses respectively. Challenge tests (prolonged cutaneous and mucous contact with a silicone nipple and with a silicone nasogastric tube) were negative. The central venous catheter was inserted in the internal jugular vein and was well tolerated on the short and long term.

Medical silicone devices have the potential to induce foreign-body and local and systemic nonspecific (nonallergic) inflammatory reactions. However, evidence for true allergic reactions to silicone in implants and silicone-coated medical devices has also been provided (1–6). Delayed hypersensitivity seems to play a major role in the *de novo* development of this allergy (4).

In our patient, the rapid course of events suggested a type-I hypersensitivity reaction. At present, only one case of immediate-type hypersensitivity to a silicone tracheal tube has been reported by Stuck et al. (5). Skin prick and patch tests and specific-IgE were negative, and only scratch tests with native tube material generated positive responses. Unfor-

tunately, our patient was tested 2 years after the initial episode. Specific-IgE and prick test with latex and prick test with silicone were negative, and the child tolerated prolonged cutaneous, mucous and venous contact with silicone. We cannot explain the initial reaction of the child to the insertion of a silicone nasogastric tube. Nevertheless, it is probable that this outcome reflects an initial nonspecific (nonallergic) reaction to the silicone tube rather than a true IgE-mediated hypersensitivity spontaneously resolving within 2 years.

We report the case of a child with suspected immediate-type allergy to latex and/or silicone. Together with the data of the literature, our observation confirms that most reactions to silicone are non-allergic (nonspecific) and suggests that the specificity and negative predictive value of immediate-reading skin tests with silicone are good.

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