

## Contact allergy to budesonide and perforation of the nasal septum

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### Case Report

A 38-year-old woman with vasomotor rhinitis had been using budesonide (Rhinocort Turbuhaler®) 200 µg in each nostril 1× daily for 1 year. She had also overused vasoconstrictive nosedrops, 3× daily since more than 5 years. During the intranasal steroid treatment, she continued to take vasoconstrictive nosedrops daily but reduced the dose.

Nasal bleeding had started 6 months after the initiation of budesonide, followed by crust formation and leading to a septal perforation. Budesonide was stopped and patch testing including several corticosteroids was done. The patient tested negatively to budesonide at the concentration usually advocated, but positively to lower concentrations (Table 1).

### Discussion

Perforation of the nasal septum is a well-known complication of intranasal corticosteroid therapy (1, 2), though the mechanism is far from clear (3–5). Allergic contact dermatitis from budesonide was first described in 1980 (6), and in 1986 Meding & Dahlberg (7) reported the 1st case of contact allergy to budesonide in a nasal spray. Later, several cases (8–10) with worsening of rhinitis, some without skin symptoms, have been reported due to contact allergy to budesonide. Some of these patients experienced nasal dryness, congestion, burning and pruritus. Painful intranasal nodular lesions, progressing rapidly into hemorrhagic superficial ulcers on inhalation of beclomethasone dipropionate after 1 week of usage, but without any patch testing done, were described in 1986 (11).

This patient gave a negative reaction to the internationally recommended concentration of budesonide on D3 and D7, but a positive reaction to lower concentrations.

In another study (12), we have shown that lower concentrations of budesonide than recommended for patch testing give a higher number of positive reactions in patients allergic to budesonide. She denied ever having used budesonide or hydrocortisone-17-butyrate topically prior to Rhinocort, but had been given corticosteroid injections and topical corticosteroids because of fibromyalgia and hand eczema, respectively, in the past, so it is unclear whether the sensitization to budesonide was initiated within the skin or mucosa. Reports of primary sensitization through the mucosa are sparse (13).

Whether there was any causal relationship between the patient's contact allergy to budesonide and her nasal septal perforation is debatable.

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Table 1. Patch test results

|                                       | D3  | D7  |
|---------------------------------------|-----|-----|
| Test session I                        |     |     |
| tixocortol pivalate 1% pet            | +++ | +++ |
| hydrocortisone alcohol 0.5% DMSO/etOH | +   | +   |
| hydrocortisone-17-butyrate 1% pet.    | –   | –   |
| budesonide 0.1% pet.                  | –   | –   |
| Test session II                       | D3  |     |
| budesonide 0.02% etOH                 | ++  |     |
| budesonide 0.002% etOH                | ?+  |     |
| budesonide 0.0002% etOH               | +   |     |

etOH: ethanol 99.5% w/v; DMSO: dimethylsulfoxide.

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