

recurred in the same areas of the skin: one on the external face of the right ankle, four on the right flank, and one over the right upper lip. They disappeared within 15 days without postinflammatory hyperpigmentation.

She remembered taking one Nolotil capsule the night before the last episode.

We performed the skin prick test and the intradermal test with Nolotil at 1:1000 and 1:100 concentrations with negative results. Epicutaneous patch tests were performed on unaffected and previously affected skin. The drug was prepared at 10% concentration in petrolatum. These tests also proved negative.

After written informed consent had been obtained, the patient underwent an oral challenge test with a single dose of 250 mg of Nolotil. She developed the same lesions in the same sites after 8 h. Cutaneous biopsy of one lesion from the right flank was performed. It showed local changes of epidermal acanthosis and parakeratosis, edema in the papillary dermis, and an inflammatory subpapillary infiltrate with lymphocytes and eosinophils.

To our knowledge, this is the first reported case of nonpigmented fixed cutaneous exanthema due to Nolotil (metamizole). Despite the epidermal changes, there was no residual pigmentation. It is possible that initial episodes of fixed exanthemas occur without pigmentation, and they might be imputed to other causes. Thus, we may assume that fixed exanthemas are underdiagnosed, and it is in later episodes when residual pigmentation appears that we achieve the correct diagnosis.

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Anaphylactic reaction to formaldehyde

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Key words: anaphylaxis; dental treatment; formaldehyde; urticaria.

● It is known that (para-)formaldehyde and paraformaldehyde, which are commonly used as denture base material, can cause severe anaphylactic reactions in patients with dental treatment (1–3). A total of 14 cases has been reported, but the presented diagnostic criteria are contradictory (1–6). Specific IgE antibodies against formaldehyde or formaldehyde-human

serum albumin (F-HSA) conjugates were detected in eight patients. Four of the patients had a positive patch

IgE sensitization to root canal dental paste.

test, whereas in only two patients was a positive scratch test reported. Prick tests in all of the patients were negative (Table 1) (7). We describe a patient with anaphylactic symptoms after the second application of the root canal paste Toxavit, which contains paraformaldehyde.

A 31-year-old man with no personal or family history of allergies was referred to our outpatient clinic with a massive swelling of his face after a second endodontic treatment. He had had his first contact with Toxavit about 6 weeks before. This formaldehyde-containing tooth-filling material, which is used for devitalization of the tooth pulp, had to remain in the tooth for 6 weeks. Approximately 5 h after the second treatment with Toxavit, our patient developed an anaphylactic reaction (urticaria) with associated cardiovascular symptoms, but without unconsciousness. He received immediate medical help and recovered within 1 day. Our patient was a nonsmoker and did not take any medications at all, not even local anesthetics.

Allergy testing showed a highly positive RAST (Pharmacia and Upjohn, Sweden) to formaldehyde (CAP-FEIA class 3, total: 3.6 kU/l), whereas total IgE was within the normal range (29.7 kU/l). Prick testing with formaldehyde in aqueous solution up to 1% revealed no reaction after 30 min or after 24 h, but an erythematous papule appeared on day 2. Patch testing with Finn Chambers on Scanpore also revealed an erythematous reaction to aqueous formaldehyde (1.0%) but was otherwise uneventful. Although the exact mechanism of sensitization to formaldehyde in our patient is unknown, our results seem to support the notion of contact sensitization leading to a type-I as well as a delayed-type hypersensitivity.

Table 1. All patients reported in literature so far with systemic reactions probably based on allergic mechanism to (para-)formaldehyde-containing dental material (7)

Reference Year	Patients (n)	Severe reaction	Time delay until first symptoms appeared	Serologic screening	Prick/scratch/intracutaneous testing	Patch test
(5), 1985	1	Angioedema	n.i.	n.d.	n.d./n.d./n.d.	pos.
(10), 1991	3	Asthma, cardiovascular reaction	1 h	IgE against HSA-formaldehyde	neg./n.d./n.d.	neg.
		Angioedema	Approx. 10 h	IgE against HSA-formaldehyde	neg./n.d./n.d.	neg.
		Cardiovascular reaction with syncope	Approx. 5–6 h	IgE against HSA-formaldehyde	neg./n.d./n.d.	neg.
(14), 1992	3	Angioedema, cardiovascular reaction	Approx. 0.5–2 h	IgE against formaldehyde	neg./pos./n.d.	n.d.
		Urticaria	n.i.	n.d.	neg./n.d./n.d.	pos.
		Angioedema	n.i.	n.d.	neg./n.d./n.d.	pos.
(16), 1994	3	Angioedema, dyspnea	7 h	IgE against formaldehyde	neg./n.d./neg	neg.
		Generalized urticaria, cardiovascular reaction	3 h	IgE against formaldehyde	neg./n.d./neg	pos.
		Generalized urticaria	12 h	IgE against formaldehyde	neg./n.d./neg	neg.
(52), 1995	1	Generalized urticaria, syncope	10–12 h	IgE against formaldehyde	neg./n.d./n.d.	neg.
(12), 1995	1	Contact urticaria	A few (?) hours	n.d.	n.d./pos./n.d.	neg.
Presented case	1	Angioedema, cardiovascular reaction	5 h	IgE against formaldehyde	Late reaction/n.d./n.d.	pos.

n.i.: no information available; n.d.: not done.

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Allergic contact dermatitis from 2-butan-1,4-diol

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Key words: butindiol; contact dermatitis; CAS no; galvanization; occupational eczema; occupational health.

● 2-BUTIN-1,4-diol (HO-CH₂-C≡C-CH₂-OH, CAS no. 110-65-6) is a colorless substance with a wide variety of applications. Its main use is as a gloss improver and corrosion inhibitor in nickel-plating galvanic baths,

ACD to this diol must be considered in galvanization workers.