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References

1. NIGAM PK, SAXENA AK. Allergic contact dermatitis from henna. *Contact Dermatitis* 1988;**18**:55–56.
2. LESTRINGANT GG, BENER A, FROSSARD PM. Cutaneous reaction to henna and associated additives. *Br J Dermatol* 1999;**141**:598–600.
3. GALLO R, GHIGLIOTTI G, CIZZANI E, BALESTRERO S. Contact dermatitis from para-phenylenediamine used as a skin paint: a further case. *Contact Dermatitis* 1999;**40**: 57.
4. LE COZ CJ, LEFEVRE C, KELLER F, GROSSHANS E. Allergic contact dermatitis caused by skin painting (pseudotattooing) with black henna, a mixture of henna and *p*-phenylenediamine and its derivatives. *Arch Dermatol* 2000;**136**:1515–1517.

Allergy to cow bone dust

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Key words: cow bone dust; occupational asthma.

● ALLERGIC reactions to bone dust are extremely infrequent and are described only in patients who work closely with it. A 17-year-old male butcher complained of rhinoconjunctival symptoms, with cough, dyspnea, and wheezing, a few minutes after cow bones had been cut in the butchery. He became asymptomatic during weekends and holidays.

A case of occupational inhalation allergy.

In the allergologic study, skin prick testing was negative to common inhalants, beef, and milk, and positive to cow's epithelium and *Tyrophagus putrescentiae*.

Prick and intradermal tests to bone dust extract (BDE) were positive in our patient and negative in 10 controls. Specific IgE was detectable against BDE, *T. putrescentiae*, beef, and cow dander, and undetectable against BSA, bovine fetal serum, or cat and dog dander. In an ELISA-inhibition study, cow dander and beef extracts inhibited by 45% and 35% the specific IgE to BDE, respectively, and no antigenic relationship was found between BDE and *T. putrescentiae*. A 12% polyacrylamide gel was carried out with BDE, cow dander, and beef extracts. Allergens of 32, 47, and 100 kDa were detected in BDE; 20 and 65 kDa in cow-dander extract; and 32, 47, and 200 kDa in beef.

The specific bronchial challenge test was performed with bone extract. In the first 10 min, a 21% drop of the basal VEMS was observed, and the patient developed moderate dyspnea. The VEMS returned to normal value after salbutamol treatment, and no late-phase reaction appeared. This test was negative in a different asthmatic control patient.

Allergy to mammalian bone is extremely rare. We have found only one report of recurrent anaphylaxis in a scrimshander (bone carver) due to deer bone dust (1). Allergy to cow epithelium and dander is not common, but it has been identified as a cause of occupational allergy among farmers and veterinarians in a few reports (2). Although our patient seemed to be sensitized to other cow proteins (dander, meat), he had no symptoms after eating beef, and he did not remember any exposure to cow dander. ELISA inhibition studies demonstrated cross-reactivity among bone, epithelium, and beef. At least some bone allergens were present in the epithelium and meat extracts. These common proteins are

probably heat sensitive or not clinically relevant. In spite of the fact that shared allergens have been described in cow epithelium and milk, we failed to detect IgE antibodies specific to milk, and our patient tolerated it completely.

BSA (3), a common allergen in mammalian products, causes cross-reactivity among various animals. We could not demonstrate specific IgE to BSA in the blot analysis, perhaps because of the boiling step of the procedure. The allergologic study found the allergen of *T. putrescentiae* to be positive. This house-dust mite is a contaminant of jam (4). At our patient's workplace, jam was not present, and he had no symptoms at the butchery if bones were not being cut. In view of these clinical data and the absence of cross-reactivity revealed by *in vitro* tests, we excluded this allergen as the cause of occupational asthma in our patient. The nonclinically relevant mite protein tropomyosin may explain the specific IgE in our patient to *T. putrescentiae*.

In conclusion, we present the first case of occupational asthma by inhalative exposure to cow bone dust, based on clinical symptoms after exposure, positive skin tests, specific IgE against cow bone dust, and positive specific bronchial challenge.

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References

1. PATTERSON R, GANZ MA, ROBERTS M. Anaphylaxis and asthma in a scrimshander due to deer bone dust. *Ann Allergy* 1991; **67**:529–532.

2. VIRTANEN T, VILHUNEN P, HUSMAN K, MÄNTYJÄRVI R. Sensitization of dairy farmers to bovine antigens and effects of exposure on specific IgG and IgE titers. *Int Arch Allergy Appl Immunol* 1988;**87**:171–177.
3. CHESTER T, STAFFORD MD, STEVEN A. Anaphylaxis to human serum albumin. *Ann Allergy* 1988;**61**:85–88.
4. DIAZ MATEO P, MONEO GOIRI I, ALDAY FIGEROA E. Occupational asthma to mites in jams. *Alergol Immunol Clin* 1992;**7 Suppl** 2:44.

Delayed exanthema to nonionic contrast medium

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Key words: delayed exanthema; iohexol; nonionic contrast media.

● ADVERSE reactions after injection of nonionic iodinated contrast media occur in about 3% of patients (1). We present two cases of delayed exanthema with positive patch test to

iohexol.

The first patient was a

54-year-old woman with an ovary neoplasm, who was referred to our service because, 4 months before, she had presented widespread itchy erythema and palpebral edema 24 h after a contrast TAC examination with an intravenous injection of iohexol (Omnitrac[®]). The symptoms disappeared in 4 days with oral antihistaminics, without any residual lesions.

The second patient was a 68-year-old man suffering from aorta aneurysm, who had undergone coronary angiography with iohexol (Omnitrac[®]) as contrast medium. He presented a maculopapular rash of the

trunk and lower extremities 24 h after the examination; cutaneous lesions had disappeared in about 8 days with antihistaminics, leaving a slight desquamation of the affected area.

Both patients were nonatopic, and there were neither previous infusions of radiocontrast media nor adverse reactions to medications.

Skin test results are shown in Table 1. Prick and patch tests to five healthy people were carried out with negative results in all cases.

Late adverse reactions occur more than 1 h after injection of nonionic iodinated contrast media. The pathogenetic mechanism of most of these reactions is not known, but maculopapular eruptions may be based on the delayed-type hypersensitivity reaction.

There are a few well-documented case reports of late skin rashes due to a nonionic contrast medium with positive delayed skin test (1–4). The implicated contrast media were mostly nonionic monomers except for one case in which the

implicated contrast medium was a nonionic dimmer (1, 2, 4).

In all documented cases, as in our two patients, the contact with the contrast medium was by arterial injection, and the median interval between injection of the contrast medium and onset of the symptoms was 24 h (1).

The patch test gave positive results to the contrast medium used in all cases except when a nonionic contrast dimmer was used (1–4). Both of our patients had a positive patch test to iohexol, and also to another nonionic contrast medium (iodixanol) to which the patients had never been exposed. In the first patient, it was positive to another nonionic monomer contrast medium; in the second patient, it was positive to a nonionic dimmer contrast medium. This may be interpreted as the cross-reactivity of structurally related contrast media. There are some case reports of possible cross-reactions between nonionic monomer contrast media (1, 2), but this study also describes the case of a cross-sensitization between dimmer and monomer nonionic contrast media.

Two patients with positive patch tests.

Table 1. Allergologic tests performed in our patients

	Patient 1		Patient 2	
	Prick (15 min/24 h)	Patch (48/96 h)	Prick (15 min/24 h)	Patch (48/96 h)
<i>Ionic</i>				
Amidotrizoate	–	–	–	–
Iopanoico	NT	–	NT	NT
<i>Nonionic</i>				
Monomers				
Iohexol	–	++/++	–	+/+
Ioversol	–	++/++	–	–
Dimmer				
Iodixanol	–	–	–	+/+
Additives				
Trometamol	NT	–	NT	–
EDTA	NT	–	NT	–
True test [®]		–		–

NT: not tested.