themselves might contribute to some of the measured IL-5. However, taking into account the in vitro data and the respective time courses of serum IL-5 and blood eosinophils, it is likely that most IL-5 originated from T cells. Interestingly, hypereosinophilia related to IL-5 secretion by helper T cells was previously demonstrated in post-traumatic eosinophilic pleural effusion.[5] This indicates that different traumatic events can lead to T-cell activation, IL-5 release, and hypereosinophilia. Because activated T cells are known to infiltrate human atherosclerotic plaques, it is possible that in our patient they were mobilized and further stimulated by the catheterization procedure.

Whatever the precise mechanism underlying IL-5 secretion by T cells in atheroembolic disease, our observation strongly suggests that T-cell activation constitutes a major determinant in the hematologic and immunologic abnormalities encountered in this disorder.

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Severe anaphylactic reaction to topical administration of framycetin

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Framycetin is an antibiotic known to cause contact allergy and is mainly used in topical preparations.[1] Anaphylaxis caused by parenteral application of aminoglycoside antibiotics has also been described.[2] However, for the first time we report a case of severe anaphylatic reaction within minutes after topical administration of the aminoglycoside framycetin to the ground of a venous ulcer. The patient also had a systemic reaction within 10 minutes after prick testing, and specific serum IgG directed against framycetin could be detected.

CASE REPORT

A 77-year-old woman attended the office of a general practitioner to receive topical treatment for venous ulcers on both lower limbs. The physician proceeded as always and placed a piece of Leukasekegel dressing on the ground of one ulcer. Leukasekegel (SmithKline Beecham, Munich, Germany) is used for topical fibrinolytic treatment of ulcers and consists of the enzyme trypsin, the aminoglycoside framycetin, the local anesthetic lidocaine, calcium arachidate, polyvinylpyrrolidone, and polyethylene glycol.

Within 1 minute after application, the patient experienced dizziness and collapsed with hypotension. (Respiratory rate was not measurable, and there was no peripheral pulse.) She had apnea with cardiac arrest after another 2 minutes. Cardiopulmonary resuscitation was successful with intubation and administration of epinephrine and dexamethasone. Five minutes later, arterial pressure was 80/60 mm Hg and normalized subsequently within another 10 minutes to 120/70 mm Hg. Three months later, the patient was referred to our clinic for allergological investigation.

Allergological investigation

All single compounds of Leukasekegel dressings were prick tested, and all except framycetin, produced negative results (Table I).

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TABLE I. Prick test of the compounds of Leukasekegel

Prick test substance	Result after 20 min
Trypsin 1 mg/ml	Negative
Lidocaine hydrochloride 1%	Negative
Framycetin sulfate 10 mg/ml	++++, plus systemic reaction
Polyvinylpyrrolidone	Negative
Polyethylene glycol 6000 1%	Negative
Calcium arachidate 10%	Negative
Control	Negative
Histamine	+++

When framycetin was prick tested, the patient had a fourfold positive reaction and experienced dizziness with a strong flush within 10 minutes. The patient's condition was stabilized by intravenous administration of steroids and antihistamines. Framycetin produced negative test results at a concentration of 10 mg/ml in a control group (n = 10).

Laboratory investigation

In a self-designed ELISA, the patient's serum was tested in a dilution of 1:500. Serum samples of donors with no history of framycetin hypersensitivity were used for control purposes. Framycetin-coated microtiter wells were blocked with non-fat dry milk powder and incubated for 20 hours with either patient or control serum, diluted 1:500 in phosphate-buffered saline solution. Phosphatase-labeled goat anti-human IgG (Kirkegaard & Perry, Gaithersburg, Md.) was added for 5 hours in a concentration of 1 μg/ml. After a developing time of 50 minutes, the assay was evaluated photometrically. An analog procedure was used to trace specific IgE antibodies. The photometric mean value obtained from pooled control serum was set to unity, indicating the absence of specific immunoglobulins. Results from the patient's serum were averaged and expressed as patient-to-control ratio. Nothing about absolute immunoglobulin concentrations could be concluded from the data. The specific IgG against framycetin in the patient's serum was 1.36-fold increased as compared with control serum. Specific IgE directed against framecytin was not detected in the patient's serum.

DISCUSSION

About 40% of patients receiving topical preparations for treatment of chronic external otitis are reported to have contact allergies. Aminoglycoside antibiotics, namely neomycin and framycetin, appear to be responsible for most of these allergies with 16%. Systemic type I reactions to aminoglycosides are reported much less frequently.[2] However, a severe anaphylactic reaction within minutes after topical administration of framycetin has not been reported so far. Because our patient experienced a flush reaction 10 minutes after prick testing with framycetin, we took into account the red man syndrome as a differential diagnosis. The red man syndrome, a clinical entity of unknown cause, is manifested in about 50% of patients receiving the aminoglycosid vancomycin intravenously for the first time.[4,5] Because our patient had received framycetin earlier without any reaction, we rejected the diagnosis of red man syndrome. On the other hand, there are several arguments for classifying the described event as an anaphylactic reaction: (1) a severe cardiodepressive reaction elicited by topical contact to a lower limb ulcer, (2) positive prick test responses only to framycetin, and (3) presence of specific IgG antibodies to framycetin in the patient's serum.

Considering these facts, in the case of our patient we postulate an anaphylactic reaction to local administration of framycetin, concomitantly with specific serum IgG antibodies.

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