

Table 1. Results of autologous serum skin tests and histamine release tests in patients with chronic urticaria

Patient number	Age/years	Sex	Type of urticaria	Duration/ months	Other diseases	Food prick	Regular medication	Autologous serum test	HR-Test
1	21	F	Dermographism	18	Addison, asthma, gluten-sensitive enteropathy	+	Prednisolone 20 mg, fludro-cortisone	–	25%
2	56	F	Dermographism	24	Asthma	–	–	–	–
3	75	M	Continuous	3	Vitiligo	–	–	8 mm	50%
4	27	M	Continuous	10	Diarrhoea, rhinitis	+	–	–	–
5	43	F	Continuous	5	Rhinitis	–	–	10 mm	21%
6	25	M	Continuous	36	Kallman syndrome	–	FSH, hCG	–*	–
7	34	M	Continuous	2	–	–	–	–	–
8	45	F	Continuous	7	Anaphylactic reactions	–	Levosetirizine 5 mg	–	27%
9	20	F	Dermographism	7	Rhinitis	+	–	–	–
10	43	M	Recurrent	120	Angio-oedema	–	–	–	–

HR, histamine release; F, female; M, male; *, a late reaction of 10 mm was seen after 6 h; FSH, follicle stimulating hormone; hCG, human chorion gonadotropin.

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Mysterious disappearance of an allogenic anterior cruciate ligament graft – a case of allergy against altered collagen

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Key words: allograft; allogenic bone-patellar tendon-bone graft; collagen type I; gelatine.

A 47-year-old man presented with history of an aseptic lysis after implantation of an allogenic anterior cruciate ligament graft. As a consequence of the rupture of his left anterior cruciate ligament he received an allogenic bone-patellar tendon-bone graft (Tutoplast; Tutogen Medical GmbH, Neunkirchen am Brand, Germany). After 6 days of normal wound healing, he noticed a painful swelling and redness of the treated knee. After 2 weeks the knee was revised surgically, assuming that the knee suffered from a bacterial infection. Macroscopically, a near-complete lysis of the allogenic-grafted anterior cruciate ligament was obvious. Microscopically, necrotic tissue with infiltrating granulocytes was seen. Microbiological investigations were

First allergic reaction to an allogenic cruciate ligament graft in a patient with gelatine allergy.

completely negative. Assuming that the graft destruction could have been caused by an allergic reaction, allergy tests were performed. In the skin prick-to-prick test the patient showed positive reactions after 20 min to the genetically identical allogenic anterior cruciate ligament graft, a genetically nonidentically allogenic anterior cruciate ligament graft, cat epithelia, grass pollen, jelly babies from Haribo® (Haribo GmbH & Co. KG, Bonn, Germany) and Storck® (Storck GmbH & Co. KG, Berlin, Germany) and pharmaceutical pork gelatine. The patient reported an aversion against jelly babies since childhood. Patch testings were negative. Two healthy control persons were also tested for the ligament grafts, but showed no reactions in the tests. Bovine and pork gelatine immunoglobulin E (IgE) antibodies in the patients' blood were tested by immunoassays (ImmunoCAP; Pharmacia Diagnostics, Uppsala, Sweden), which showed no specific anti-IgE antibodies against the tested substances.

Human donor ligament allografts are used to re-establish the stability of the knee joint after rupture of the anterior cruciate ligament. Compared with autologous transplant materials, allografts have the advantage of a shorter operation and anaesthetic time, whereas a higher re-rupture rate, delayed incorporation, possible disease transmission and immunological reaction to the allograft by the recipient are among the potential disadvantages of allografts (1). However, so

far, no report of a rejection of an allogeneic ligament graft caused by an early type allergy to altered human collagen has been published.

Tutoplast allografts are sterilized in different ways, at the end they consist mainly of collagen type I. Our patient showed allergic reactions of the early type to ligament allografts, gelatine-containing jelly babies and pork gelatine. Gelatine is a product obtained by the partial hydrolysis of bovine or porcine collagen and consists mainly of denatured type I collagen. It is widely used in foods and pharmaceuticals. Reports of hypersensitive reactions to gelatine containing vaccines and to pork, beef and fish gelatine-containing foods have increased in frequency during the last years (2, 3). Although gelatine-specific IgE is a primary cause of immediate reactions including anaphylaxis, a cell-mediated immunity has been shown to be associated with both immediate and nonimmediate type reactions to gelatine-containing vaccine (4). In gelatine allergy denatured bovine or porcine type I collagen is the major allergen. The collagen molecule is a heterotrimer composed of two $\alpha 1$ chains and one $\alpha 2$ chain, the $\alpha 2(I)$ chain being the major allergen in gelatine allergy (5).

As ligament grafts are chiefly composed of type I collagen, there is a potential for immunological cross-reactivity with dietary collagen (gelatine). We postulate the idea that a preexisting sensitization to type I collagen, acquired by the intake of gelatine-containing food or vaccines, led to subsequent allergic rejection of the allogeneic graft in our patient. This report presents the first case of an allergic reaction to an allogeneic cruciate ligament graft in a patient with an allergy towards gelatine. As the incidence of allergies against gelatine is rising, preoperative allergy testing to exclude sensitization to gelatine might be appropriate in patients receiving allogeneic cruciate ligament grafts.

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Hand eczema by rubberized grip of ballpoint pen in patients with atopic eczema

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Key words: atopic eczema; ballpoint pen; hand eczema; latex allergy; rubberized grip.

We have previously reported that latex allergy is frequently found in patients with atopic eczema (AE) not only in adults, but also in children (1). In 2005 from August to December, we noticed hand eczema of thumb, index finger and middle finger in many AE patients including 16 children and 38 adults.

Subsequent study

revealed that hand eczema was caused by rubberized grip of

ballpoint pen. Avoidance of rubberized grip of ballpoint pen improved clinical symptoms and decreased sensitization to latex in those patients.

All of the patients complained eczema of thumb, index finger and middle finger of right hand after using ballpoint pen as they were right-handed. Then, we noticed that the ballpoint pen had rubberized grip. Similar symptoms were caused by rubberized grip of ballpoint pen from different companies (Pilot Co. Ltd, Tokyo, Japan; Pentel Co. Ltd, Tokyo, Japan; Zebra Co. Ltd, Tokyo, Japan). After obtaining informed consent, 16 children with AE (SCORAD index: mean 8) (nine female and seven male, range 8–14 years), 38 adults with AE (SCORAD index: mean 12) (22 female and 16 male, range 24–40 years), 16 control healthy children (nine female and seven male, range 8–14 years) who visited hospital for screening of allergy, and 38 control healthy adults (22 female and 16 male, range 24–40 years) were studied (2).

All of the patients were treated with application of pinetar (Yoshida Pharmaceutical Co. Ltd, Tokyo, Japan) mixed with zinc oxide ointment, but without oral medication (2), and avoidance of rubberized grip of ballpoint pen. Skin prick test (SPT) to latex and rubberized grip was performed with natural rubber latex extract (C-serum) and extract of rubberized grip, respectively, before and after avoidance. Extract of rubberized grip of the ballpoint pen (Pilot, Pentel, Zebra) was made as followings. Grip was cut into 0.5 cm² piece and was incubated in sterile physiological saline (1 : 2, w/v) at room temperature for 17 h. The extract was then filtered through a Millipore filter (0.2 μ m) and freshly used for SPT (2). As results of extract from grips of ballpoint pen of three companies were almost same, results of data using extract from grip of ballpoint pen of Pilot Co. Ltd were presented. Blood was also sampled and serum latex-specific IgE was measured by fluorescence-enzyme immunoassay (FEIA) before and after

Hand eczema by rubberized grip of ballpoint pen was observed in patients with atopic eczema.