

Atopic Dermatitis

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The term atopic, which means "strange disease," was first used in 1925 to describe a group of diseases which include allergic rhinitis, bronchial asthma, urticarial reactions to drugs as well as food allergies or idiosyncrasies. These conditions have in common the presence of skin sensitizing homocytotropic antibodies (IgE) in the serum of the person at some point in the natural history of the disease. There is little evidence that the dermatitis found in the atopic individual is produced by IgE which is present in the serum and skin of the person with atopic dermatitis.

Atopic dermatitis is by definition, then, an inflammatory flexural dermatosis of the skin found in the patient who has other manifestations of atopy or a family history of these disorders. It is probably the number one cause of hand eczema in adults. This particular disorder causes many persons to be rejected for military service, and the man hours lost in daily work due to this disorder are significant.

Etiology. The specific etiology of this particular type of eczema is unknown. It is multifactorial dermatosis. These factors include:

1. A genetic susceptibility.
2. A defective barrier layer in the normal skin which is accompanied by increased transepidermal water loss from the epidermis with an associated increase in absorption of antigens into the skin. The normal skin of the atopic person may be more easily damaged by irritants which include soaps and detergents, wool, and other factors.
3. Sudden temperature changes and sweat retention.

4. Topical allergens such as nickel and neomycin may induce sensitization contact dermatitis in these patients.
5. Inhaled allergens probably play little role in producing the dermatitis in adults.
6. Emotional feelings may lead to scratching and this trauma may induce the dermatitis. Frustration and anger seem to enhance itching.
7. A factor that has not been given proper attention in the past is bacterial infection and bacterial colonization in the skin.

Immunology. A specific immunologic defect has not been proven to exist in patients with dermatitis. In general, patients with localized atopic dermatitis confined to the hands and feet have a normal serum IgE level. Patients with generalized atopic dermatitis have elevated serum IgE levels, particularly when there is exudation and infection in the skin.

Patients with an elevated serum IgE level do not have serum fluctuations with the activity of the disease whether the disease is minimal or severe. The reason for this serum elevation in generalized atopic dermatitis is not clear. One possibility is bacterial infection while another is autoimmunity to an antigen such as human dander.

Clinical Manifestations. The clinical manifestations of patients having atopic dermatitis are many. The most common are listed below:

1. The infant usually presents with a dermatitis on the face, and the extensor surfaces of arms, legs, and hips are involved.
2. The child who has atopic dermatitis may manifest the eruption first on the dorsal surface of the hands and feet.
3. The medial surface of the middle finger as well as the small finger of the hand is a fre-

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quent site. Accumulation of material around rings and other jewelry may be the initiating factor in producing this form of the disease.

4. The presence of chronic lichenified dermatitis on the flexural aspects of the arms, legs, and trunk as well as the hands and feet which may lead to exfoliation of the skin.

Diagnosis. An important clue in making the diagnosis of atopic dermatitis is a family history of asthma, hay fever, urticaria, or atopic dermatitis. The morphology and distribution of the lesions in flexural folds is helpful as well as the serum IgE level. A history of foot dermatitis as a child, particularly on dorsal surface, is helpful in establishing the atopic pattern in a patient suspected of having this troublesome dermatosis. This dermatitis on the dorsal surface of the foot in a child is usually atopic dermatitis, not contact dermatitis or dermatophytosis.

A careful physical examination of the skin to reveal other components of the atopic skin syndrome will aid in making the diagnosis. These include:

1. The history and physical evidence for recurrent allergic rhinitis with or without associated mucosal swelling of the sinuses.
2. Double lines on the face beneath the eyes may be present.
3. Allergic persons with atopic histories frequently have a light blue appearance to the mucous membranes of the nose with an associated high, arched palate.
4. Cutaneous papules on a dry skin are more common in the atopic patient.

Confirmatory Tests. Once a differential diagnosis

has been outlined, diagnostic confirmatory tests are in order. In the patient with a chronic pustular dermatitis of the hands or a generalized dermatitis, the serum IgE level may be helpful in separating this disorder from other eczematous states. Elevated serum IgE levels alone, however, are not diagnostic.

Patch Testing. Appropriate patch tests should be performed in order to establish the presence or absence of sensitization contact dermatitis. All patients with generalized eczematous dermatitis should have patch tests performed to rule out specific cell mediated immunity to a variety of environmental antigens.

Management. Important modalities in the management of atopic dermatitis include:

1. The avoidance of a constant exposure to irritants as well as excessive water. Generalized bathing should be limited to twice weekly with intermittent sponge bathing.
2. The judicious use of systemic antibiotics for bacterial infections is most important.
3. Topical corticosteroid therapy combined with partial occlusion especially for hands and feet is the hallmark of anti-inflammatory therapy for atopic dermatitis. Complete occlusion of the dermatitis with a material such as polyethylene is to be avoided.
4. Bath oils and emollients are helpful.

Careful consideration must be given to the emotional aspects of this illness. Family members must receive proper instructions in handling children with this disorder, and the adolescent and adult patient will need counseling by the physician.