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Commentary

Pathology in Atopic Dermatitis: How it Affects Skin?

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DESCRIPTION

Atopic Dermatitis (AD) is also known as atopic eczema which is a pruritic chronic inflammatory disease of the skin that is caused by a complex interplay between the individual's genetics and allergen stimulation.The main triggers of atopic dermatitis are dry skin, irritants, stress, allergies, infection and heat/sweating. It's important to note that these are triggers that worsen the symptoms of atopic dermatitis, and don't necessarily cause atopic dermatitis.

It's a form of skin inflammation that lasts a long time (dermatitis). Itchy, red, bruised, and broken skin is the result. The affected areas may produce clear fluid, which thickens over time. Although the disorder can affect someone at any age, it usually begins in childhood and progresses in severity over time. In children under one year of age, much of the body may be affected. As children get older, the areas on the insides of the knees and elbows are most commonly affected. In adults, the hands and feet are most commonly affected.Scratching the affected areas worsens the symptoms, and those affected have an increased risk of skin infections. Many people with atopic dermatitis develop hay fever or asthma. The cause is unclear, but it is thought to be related to genetics, immune system dysfunction, environmental conditions, and skin permeability issues.

Atopic dermatitis affects about 20% of people at some point in their lives. It is more common in younger children. Males and females are equally affected. Many people outgrow the condition. Atopic dermatitis is sometimes called eczema, a term that also refers to a larger group of skin conditions. Other names include "infantile eczema", "flexural eczema", "prurigo Besnier", "allergic eczema", and "neurodermatitis".

SIGNS AND SYMPTOMS

Dry skin, Itching, this may be severe, especially at night. Red to brownish-gray patches, especially on the hands, feet, ankles, wrists, neck, upper chest, eyelids, inside the bend of the elbows and knees, and in infants, the face and scalp. Small, raised bumps, which may leak fluid and crust over when scratched.The main symptom is a rash that typically appears on the arms and behind the knees, but can also appears anywhere. During a flare, AD becomes a red, itchy rash. Many different physical and internal factors can trigger an eczema flare-up. The resulting inflammation causes increased blood flow and the urge to itch.

Symptoms: Dry, itchy, scaly skin, a rash on the scalp or cheeks, a rash that may bubble and weep clear fluid, scaly patches of skin at the site of the rash, lightened or darkened skin spots, extremely dry and scaly skin.

What are the types of atopic dermatitis?

- Hand eczema is often caused or worsened by exposure to a substance that's irritating- think alcohol, bleach, cleansers or solvents-or one that causes an allergic reaction, such as perfume or certain plants
- Contact dermatitis, which occurs only when the skin makes contact with certain substances
- Dyshidrotic eczema, a blistering form of eczema that's found only on the fingers, palms, and soles of the feet

The basic understanding of AD is that inflammation results from the presence of too many inflammatory cells in the skin. There's also evidence that people with AD have a compromised skin barrier compared to normal skin. Because of the altered skin barrier, people with AD have drier skin. AD skin is more prone to water loss and the entry of irritants. This all leads to the development of red, itchy rashes.

There's no known cure for AD. Finding the right treatment is important to help reduce itching and discomfort. Calming the skin reduces stress and helps prevent excessive scratching that leads to skin infections.Treatment options vary from over-the-counter skin care, prescription medication, and lifestyle changes.

Pathology: Gross findings reflect the lesions seen in life and lesions are generally due to self-trauma. Histological changes are non-specific but include acanthosis, a mixed mononuclear perivascular dermatitis, sebaceous gland metaplasia and secondary superficial pyoderma. Other microscopical findings include: hyperplastic superficial perivascular dermatitis, mast cells, eosinophils and nonmetachromatic mononuclear cells. Perivascular inflammation may be involved especially in horses.

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Allergen-specific IgE tests are only useful when a diagnosis of atopic dermatitis has already been reached by consideration of history and clinical exam, and by ruling out other causes of pruritus. The test is used to identify allergens for immunotherapy by evaluating serum levels of IgE specific for variety allergens. The exact technique varies between laboratories, but the principle is the same: Serum is allowed to react with the allergen before excess serum and antibodies are rinsed away. An IgE-specific reagent linked to an indicator is added, and the amount that binds is proportional to the amount of allergen-specific IgE. This can then be quantified. Several factors can adversely influence the test results. These include age, season, use of corticosteroids and laboratory inaccuracies.