together on the same individual. Eczema with unidentified cause is usually considered contact dermatitis with the involvement of an extrinsic substance. Topical steroids and oral antihistamines are applied as the first line of treatment for eczema at all stages.

1. Acute eczema

Acute eczema is accompanied by exudative erythema, edema, and sometimes vesicles (Fig. 7.4). It is newly produced eczema only several days after its onset. Intercellular edema (spongiosis), intense dermal edema, and inflammation occur. Acanthosis usually does not.

2. Subacute eczema

Subacute eczema has a severity between that of acute and that of chronic. Such eczema is accompanied by erythema and edema, and it is slightly lichenoid. Mild edema is produced in the epidermis. Acanthosis and parakeratosis are observed.

3. Chronic eczema

Chronic eczema is characterized clinically by lichenification. When acute eczema continues for more than one week after onset, it is likely to appear lichenified, and the diagnosis is chronic eczema. Acanthosis and parakeratosis are noticeable histopathologically (Fig. 7.6); however, there is less infiltration of inflammatory cells into the epidermis than with acute and subacute eczema.

b. Eczemas with more specific names according to their distinguishing features

1. Contact dermatitis

   - Contact dermatitis is localized to the site of extrinsic stimulation by foreign substance or allergic reaction.
   - Eczema reactions such as reddening and blistering occur at the contact site.
   - There are specific types of contact dermatitis, such as diaper dermatitis and housewife’s hand eczema.
   - The causative substances include certain plants, chemical agents, and nickel, mercury and other metals.
   - Patch testing is useful for diagnosis. Topical steroid application is the first-line treatment. The causative agent should be eliminated.

Clinical images are available in hardcopy only.

Fig. 7.6 Chronic eczema.
Hyperkeratosis is severe, as in tylosis. Erythema and fissures are seen.

Fig. 7.7-1 Contact dermatitis.
a: “Ginkgo nut dermatitis.” This patient touched his face without washing his hands after gathering ginkgo nuts.
Clinical features

Erythema, serous papules, vesicles, erosions and crusts are localized at the contact site of the causative agent (Figs. 7.7-1 to 7.7-3). The eczematous lesions are relatively sharply circumscribed and are intensely itchy. Although only localized areas are affected, erosive lesions may become widespread when the causative agent is spread by rubbing and scratching. If the inflammation spreads over the entire body, systemic symptoms such as fever may arise. When the causative agent is highly stimulative, it may cause necrosis of the skin and ulceration.

Atypical cases of contact dermatitis

1. **Pseudoatopic dermatitis**: When the skin is repeatedly stimulated by a causative agent, symptoms closely resembling those of adult atopic dermatitis may appear.

2. **Melanosis Riehl**: Ingredients of cosmetics are converted by light into allergens that cause pigmentation without noticeable inflammation (Chapter 16).

3. **Systemic contact dermatitis**: When an individual is sensitized by contact allergy and inhales an antigen, a systemic allergic reaction is induced. Mercury is well known as such an antigen.

4. **Gold dermatitis caused by earrings**: Readily ionized metals such as nickel often cause dermatitis. In recent years, the number of cases caused by gold earrings has increased significantly. They are characterized by intractable induration where the ear is pierced. A lymphoid follicle-like structure may form (Fig. 7.8).

Pathogenesis

Primary irritant contact dermatitis is an inflammatory reaction caused by lysosomes or various cytokines that are released from keratinocytes when the keratinocytes are injured by substances in the causative agent. With a certain level of irritation, contact dermatitis may occur in anyone from the very first contact.

Allergic contact dermatitis basically occurs as a type IV allergic reaction (Fig. 3.9). The causative agent invades the body percutaneously and is captured by Langerhans cells, which are epidermal antigen-presenting cells. It moves to the regional lymph nodes and transmits information about the antigen to thymus-derived T cells. Those T cells proliferate in the lymph nodes (sensitization). If the causative agent reinvades the body after sensitization, the sensitized T cells become activated to release various cytokines, which leads to a prompt inflammatory reaction that causes dermatitis. This reaction is not produced by the first contact, but it is produced in previously sensitized persons even by contact with a minute amount of the antigen (that is, there is no threshold amount of a causative agent that causes contact dermatitis).

Almost anything, from plants to cosmetics to detergents to chemicals in workplaces and homes, can be an allergen (Table 7.2).
Laboratory findings, Diagnosis

Each causative agent causes a particular distribution of eruptions; the agent in each case is easily identified by the distribution and history-taking. Substances that frequently cause contact dermatitis are listed by the location on the body in Table 7.3. The causative substance is determined by patch testing (Chapter 5).

Treatment

The irritant should be avoided. Topical steroids and oral antihistamines are the first-line treatments. Although desensitization therapy is performed at some institutions, the efficacy varies from case to case.

Note

There are more specific names for contact dermatitis according to types of patients and particular locations on the body.

1. **Diaper dermatitis**: This occurs where the diaper comes into contact with the skin (Fig. 7.9).
2. **Housewife’s hand eczema**: This affects the hands of those who frequently work with water. Keratodermia tylodes palmaris progressiva is included in this category.
3. **Dyshidrotic eczema**: Small vesicles (also called pompholyx) and desquamation occur frequently on the palms and soles, and they often worsen during the summer.

### Varieties of contact dermatitis

Contact dermatitis may be diagnosed as ginkgo nut dermatitis, rhus dermatitis, mercury dermatitis, or shiitake dermatitis. The diagnosis depends on the allergen.