12 Dermatitis

The terms dermatitis and eczema are among the most confusing in dermatology. Dermatitis means “inflammation of the skin,” although some object to the term because it seems to omit the vital interplay between epidermis and dermis in cutaneous inflammation. Eczema comes from the Greek ekein (=boiling) and is used by some to refer to an acute inflammation with vesicles and edema; others, however, are happy with the concept of chronic eczema. We have chosen only to use the term dermatitis, modify it with acute, subacute, or chronic, and regard eczema as a synonym. Dermatosis means “condition of the skin” and generally refers to noninflammatory disorders, although there is considerable overlap.

12.1 Atopic Dermatitis

Definitions

- **Atopy**: A familial predisposition to development of allergic asthma, conjunctivitis, rhinitis, and atopic dermatitis.
- **Atopic dermatitis**: In the best tradition of a circular definition, atopic dermatitis is the dermatitis that develops in individuals with atopy. It usually appears in infancy, is chronic and intensely pruritic with varying clinical patterns at different stages of life.

Epidemiology

Some 5–10% of the population of western Europe develop atopic dermatitis. The disease is familial, with apparent polygenic inheritance. A number of suspected gene loci have been identified. A classic feature is that one family member may have allergic rhinitis and no skin findings, while another has only atopic dermatitis.

Pathogenesis

There appear to be two rather different ways to reach the same disease state:

- **Extrinsic atopic dermatitis syndrome (EADS):**
  - 80%.
  - Elevated total serum IgE.
  - Polyvalent type I sensitization (children against foods, adults against pollens and house dust mites).
  - CD4 cells dominate infiltrate.
- **Intrinsic atopic dermatitis syndrome (IADS):**
  - 20%.
  - No immunologic changes as in EADS.
  - CD8 cells dominate infiltrate.
- **Other features:**
  - Increased cholinergic reactions (white dermatographism, paradoxical sweat response to cholinergic agents).
  - Dry skin with distorted barrier function, perturbations in epidermal lipid composition (overlaps with ichthyosis vulgaris, p. 333).
Clinical Features

The clinical features of atopic dermatitis can be divided into the basic features and the facultative or associated features. There are many diagnostic scoring schemes for atopic dermatitis; if a patient has three major features and three minor features, they are likely to have the disorder.

► Major features:
  - Pruritus.
  - Typical dermatitis (face in children, flexures in adolescents, hands or nape in adults) (Figs. 12.1, 12.2a–c).
  - Chronic or chronic, recurrent course (Fig. 12.2d).
  - Positive personal or family history for atopy.

► Minor features:
  - Cradle cap as infant; yellow crusts on scalp.
  - Dry skin with ichthyosis vulgaris, hyperlinear palms, keratosis pilaris.
  - Thick, fine dry hair.
  - Elevated serum IgE; IgE-mediated skin reactions.
  - Predisposition to skin infections (Staphylococcus aureus, herpes simplex virus, human papilloma virus, molluscum contagiosum) because of selective reduced cellular immunity.
  - Dermatitis on palms and soles (juvenile plantar dermatosis).
  - Nipple dermatitis.
  - Cheilitis (dry, inflamed lips, Fig. 12.2e).
  - Lateral thinning of the eyebrows (Hertoghe sign).
  - Double fold of lower lid (Dennie–Morgan fold or line).
  - Periorbital hyperpigmentation, obvious facial paleness, or erythema.
  - Pityriasis alba.
  - White dermatographism.
  - Increased pruritus with sweating.
  - Diseases flares with emotional changes.
  - Unable to tolerate wools or fat solvents.
  - Food allergies.

Fig. 12.1 · Distribution of lesions of atopic dermatitis over a lifetime. a Infants. b Children. c Adolescents and adults.
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- Recurrent conjunctivitis, keratoconus, anterior and/or posterior subcapsular cataracts.
- Absent or reduced corneal or gag reflex.

**Provocation factors:** Irritants, type I allergens, pseudoallergens (citrus fruits; other foods or food additives), bacterial superantigens, hormones, increased sweating, dry air, emotional stress.
**Histology**

- **Acute:** Parakeratosis, spongiosis, perivascular infiltrates.
- **Chronic:** Hyperkeratosis, acanthosis, sparse infiltrates.

**Diagnostic Approach**

- **Routine measures:**
  - Typical skin changes varying with age of patient.
  - Family and allergy history.
  - Serum IgE level, CBC (looking for elevated eosinophil count).
  - White dermatographism, reduced gag reflex.
  - Eye examination.
- **Special investigations:**
  - Prick testing with common food and inhalant allergens.
  - Allergen-specific IgE determinations.
  - Atopy patch testing. Common aeroallergens are applied and interpret as in a routine patch test.

**Differential Diagnosis**

- The differential diagnostic considerations vary considerably over the lifetime of the patient and location of the findings. The classic pictures of facial, flexural, or nuchal dermatitis are extremely typical and can be diagnosed at a glance.
- In infants with scalp involvement, seborrheic dermatitis often is identical; often the diagnosis is made later in life as typical findings appear. Atopic dermatitis tends to appear after 6 months of age, whereas seborrheic dermatitis may be present earlier.
- Allergic contact dermatitis should be excluded; even though patients with atopic dermatitis are hard to sensitize, they are exposed to so many creams and ointments that sensitization is not uncommon.
- Adults may present with hand dermatitis (p. 200), eyelid dermatitis, or nuchal dermatitis.

**Therapy**

- **Note:** No disease is more complicated to treat than atopic dermatitis. It is absolutely essential to work with the patient (and the parents). Listen to their observations; make them a part of the treatment team. This is the easiest way to reduce the emotional aspects of the doctor–patient–parent relationship. For example, do not decide that a patient needs an ointment; instead ask the patient or parent “Do you do better with a cream or ointment—something that rubs in or something that stays a bit greasy?”
- **Topical:**
  - Routine skin care with emollient creams or ointments; if tolerated, with urea as humectant; bath oils.
  - **Topical anti-inflammatory agents:**
    - *Topical immunomodulators* (p. 599): Pimecrolimus (> 6 months); tacrolimus 0.03% > 2 years, 0.1% > 15 years. Use b.i.d. until response, then taper; can combine with corticosteroids.
    - *Corticosteroids* (p. 596): Usually class I–II agents suffice; class III–IV reserved for flares, limited time period. In most instances once daily application is adequate; never more than b.i.d.