Atopic dermatitis

Clinical features

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CLINICAL FEATURES

Disease Course

AD has a broad clinical spectrum that varies depending upon the age of the patient. It is divided into **infantile, childhood, and adolescent / adult stages.**

In each stage, patients may develop acute, subacute, and chronic eczematous lesions, all of which are intensely pruritic and often excoriated.

Acute lesions predominate in infantile AD and are characterized by edematous, erythematous papules and plaques that may exhibit vesiculation, oozing, and serous crusting.

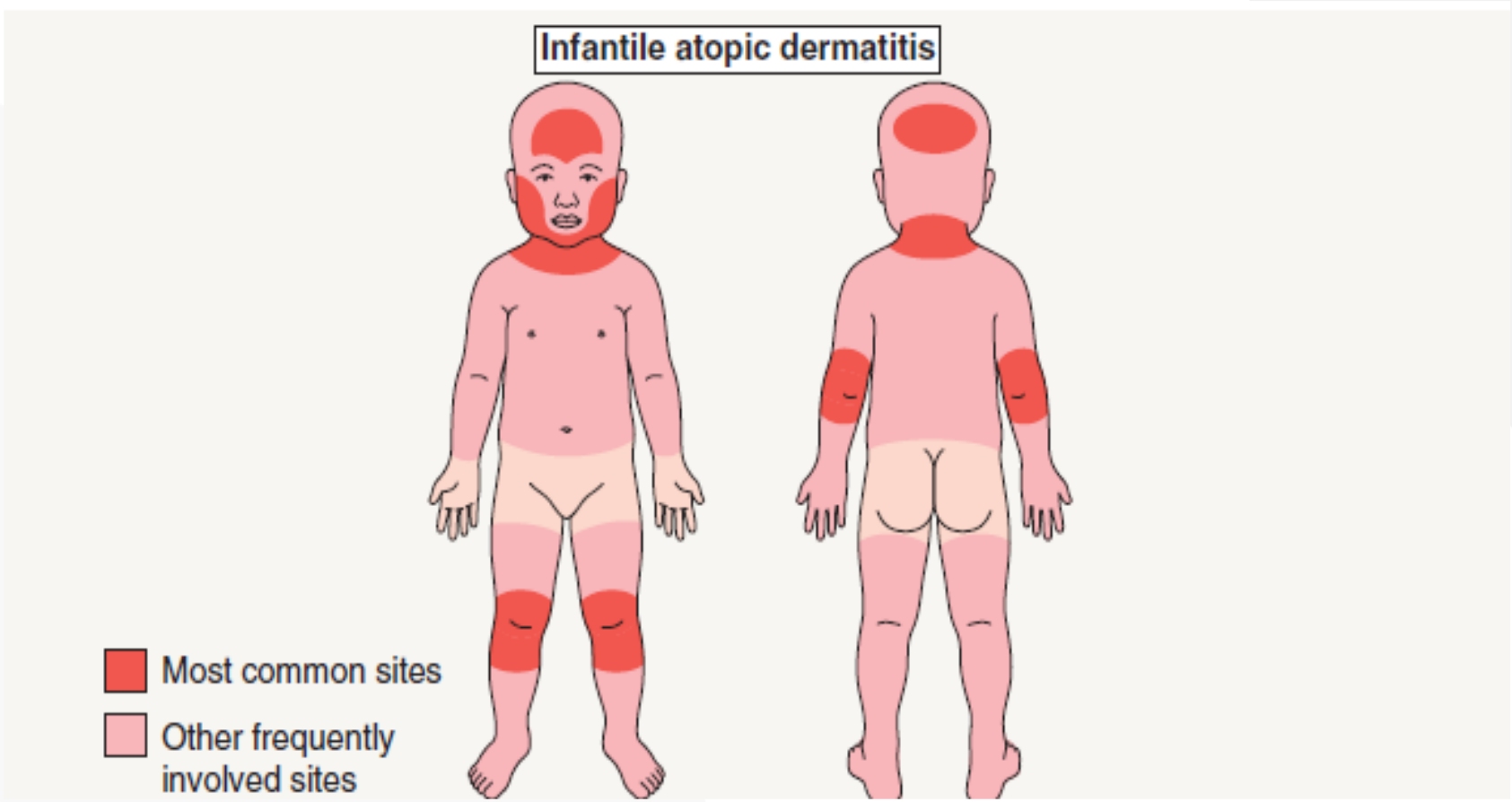
- **Subacute eczematous** lesions display erythema, scaling, and variable crusting.
- **Chronic lesions,** which typify adolescent/adult AD, present as thickened plaques with lichenification as well as scale; prurigo nodule-like lesions can also develop.
- **Perifollicular accentuation** and small, flat-topped papules (**papular eczema**) are particularly common in patients with African or Asian heritage.
- In any stage of AD, a **generalized exfoliative erythroderma** may develop in the most severely affected patients.
- All types of AD lesions can leave post-inflammatory hyper-, hypo-, or occasionally depigmentation upon resolution

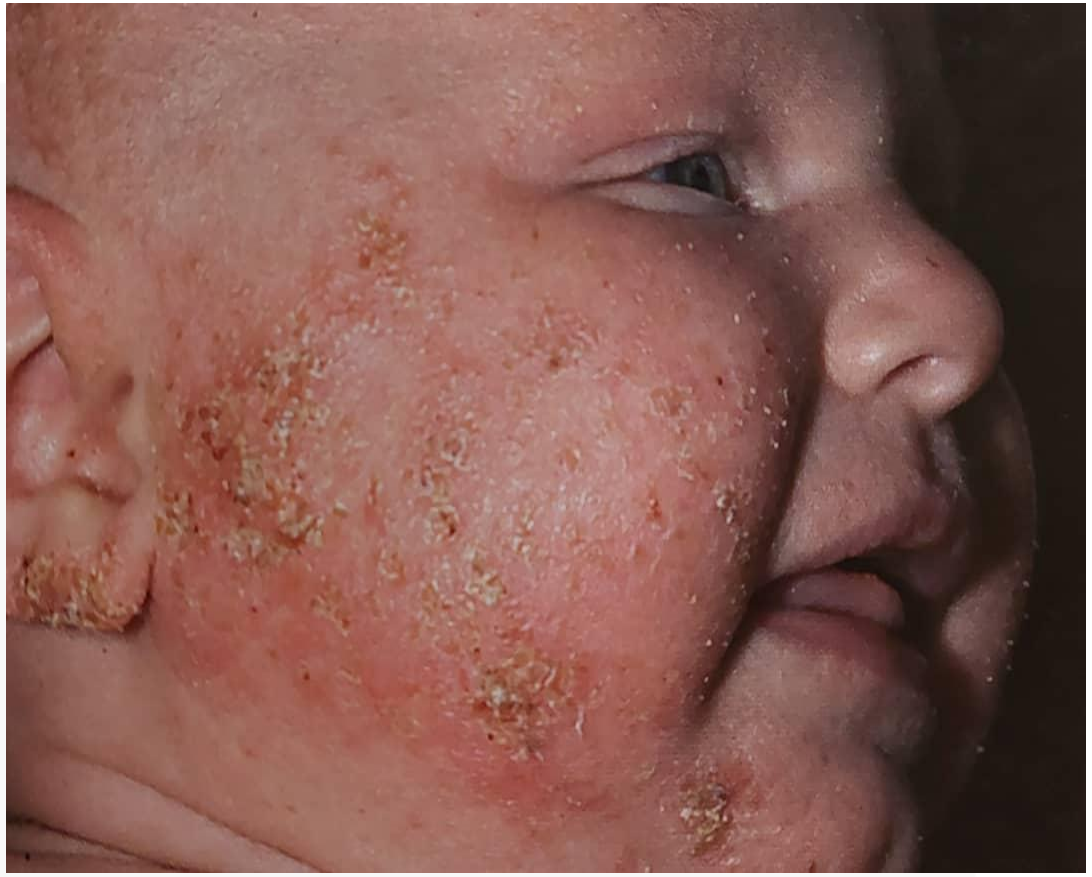
- Infantile AD (age <2 years) typically develops after the second month of life, often initially appearing as edematous papules and papulovesicles on the cheeks, with sparing of the central face; the lesions may evolve to form large plaques with oozing and crusting

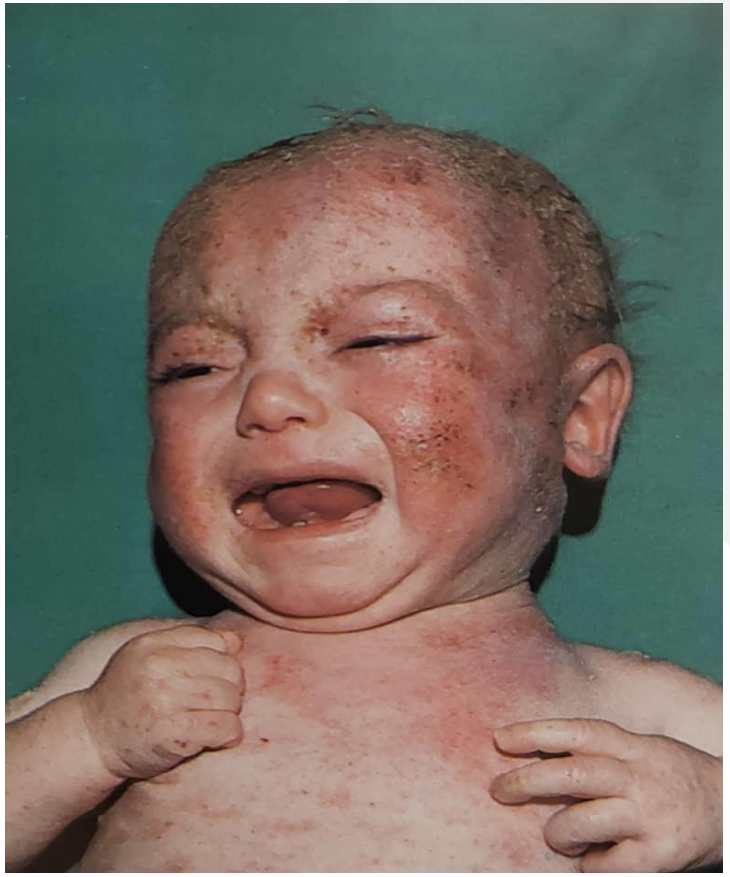
- The scalp, neck, extensor aspects of the extremities, and trunk may also be involved, usually with sparing of the diaper area.

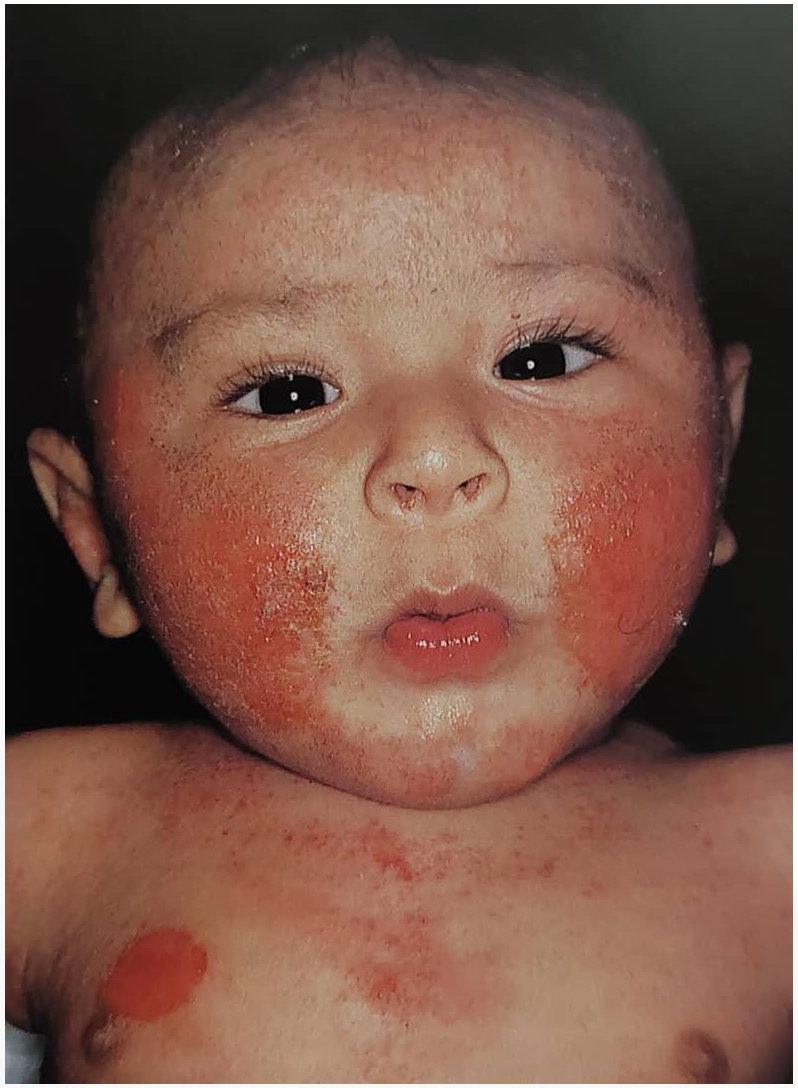
- In the first 6 months of life, the face is affected in >90% of patients with AD.

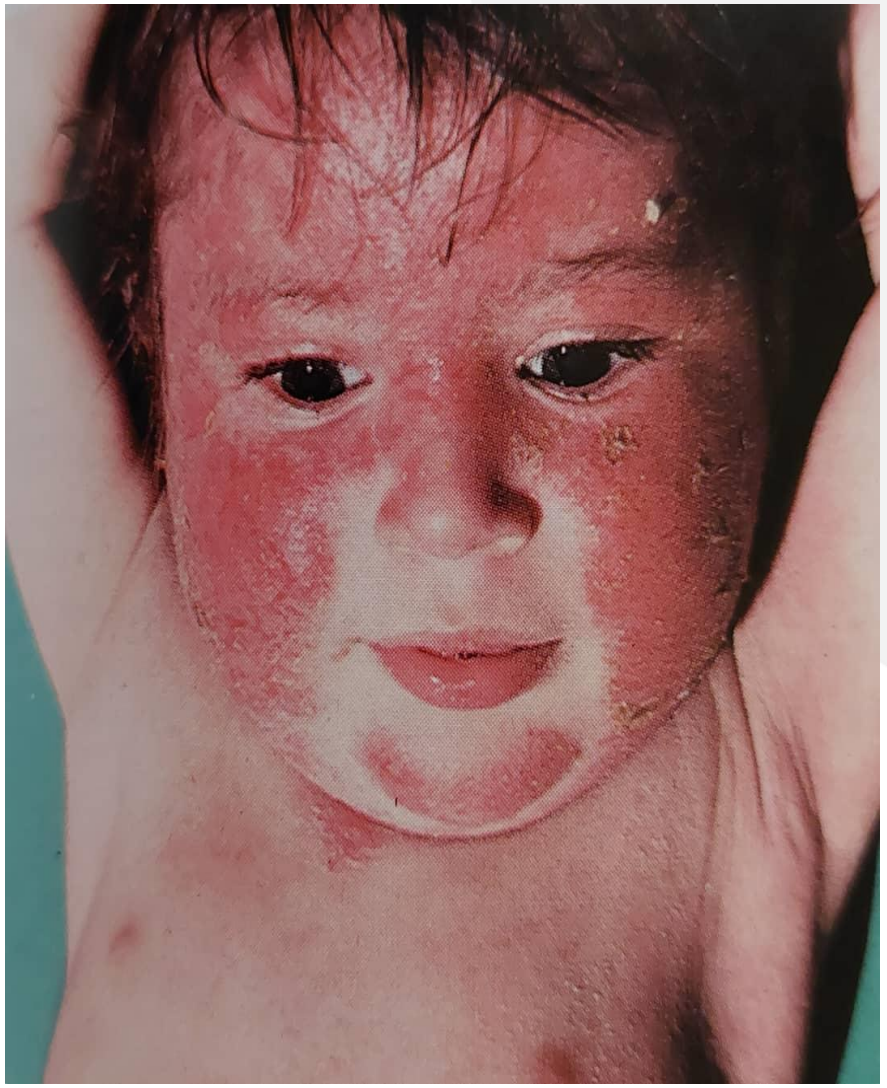
- Young infants may attempt to relieve itch through rubbing movements against their bedding, whereas older infants are better able to directly scratch affected areas.

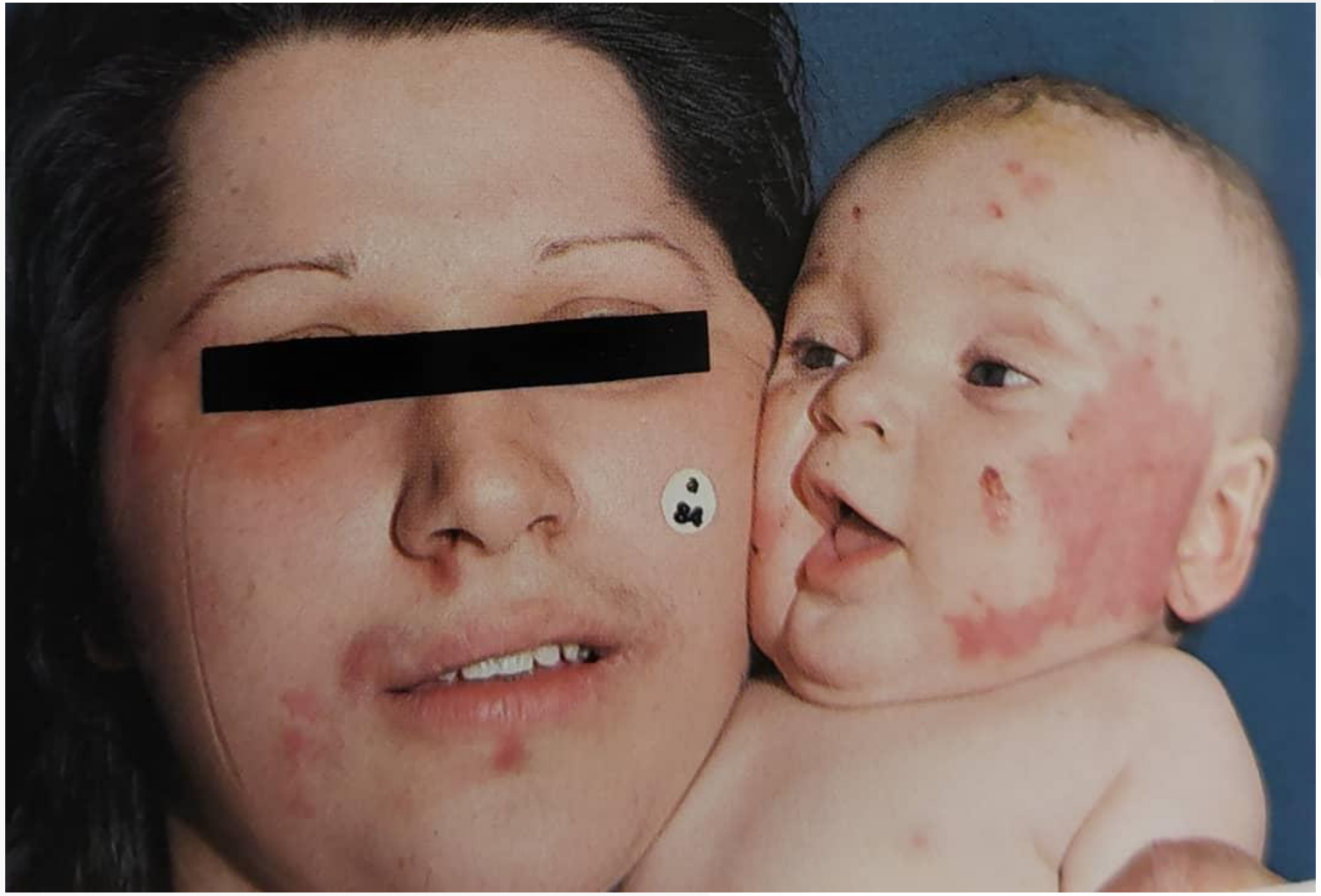

Infantile atopic dermatitis
Most common sites
Other frequently involved sites



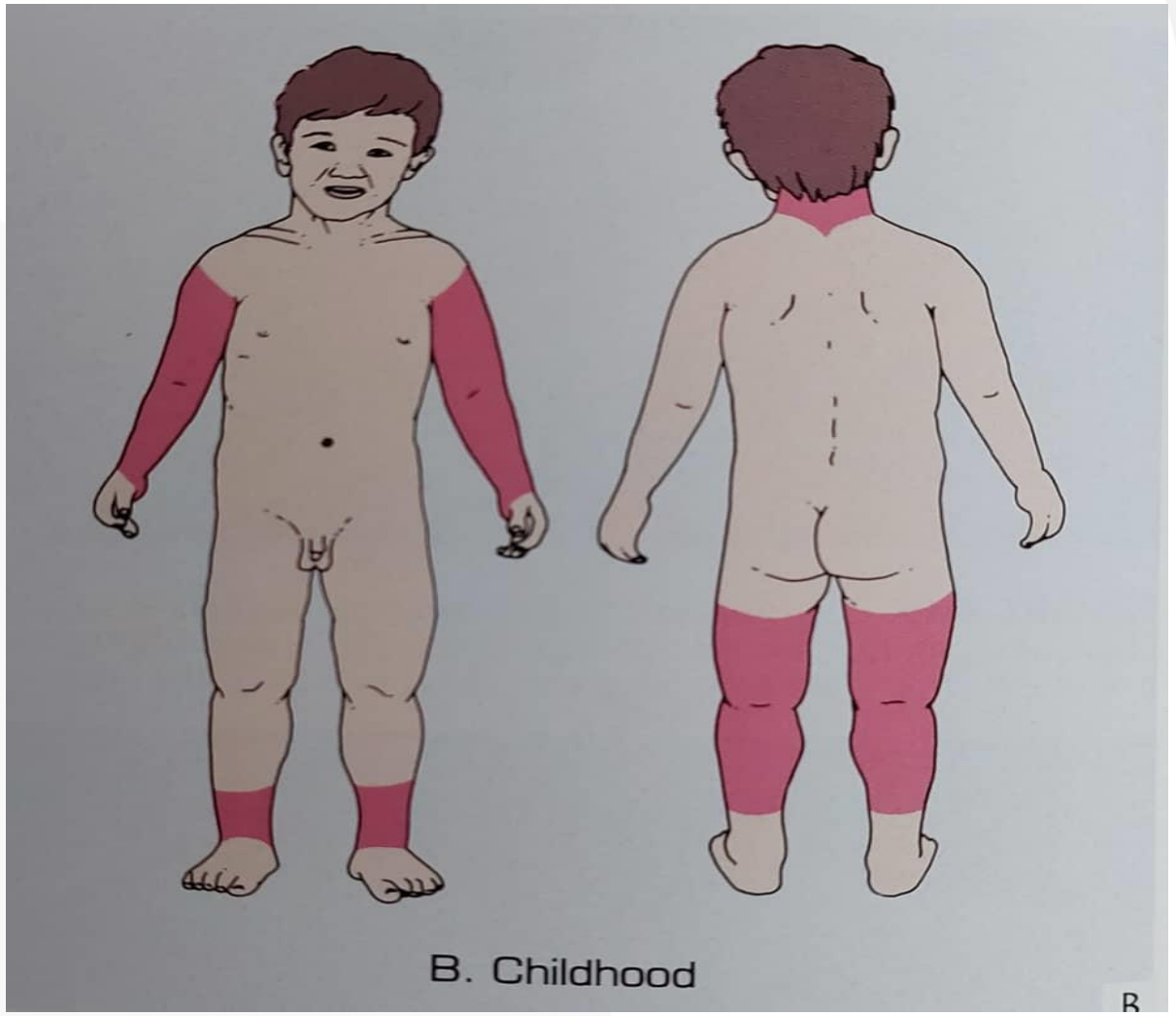


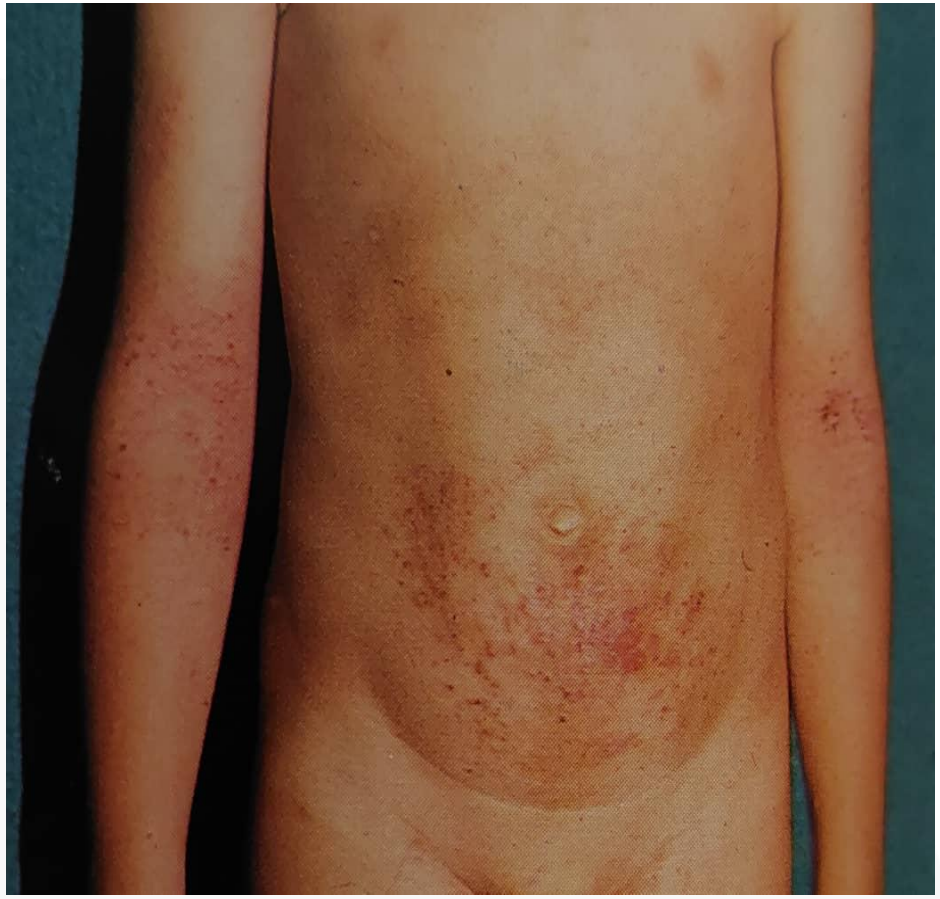


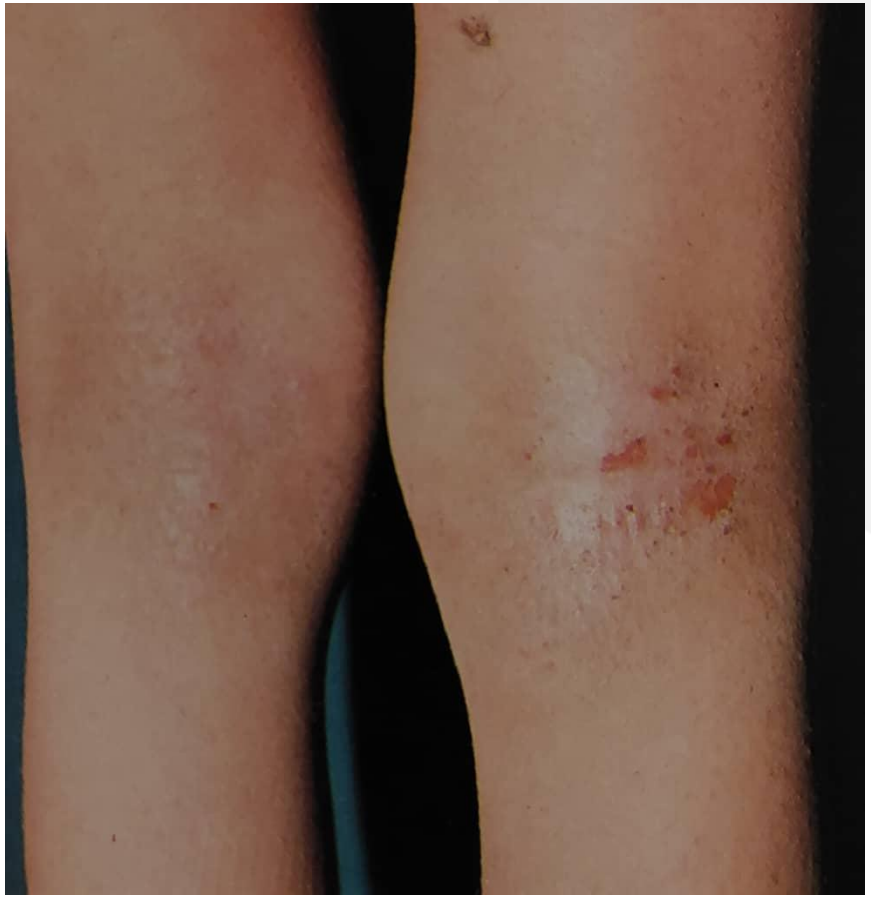


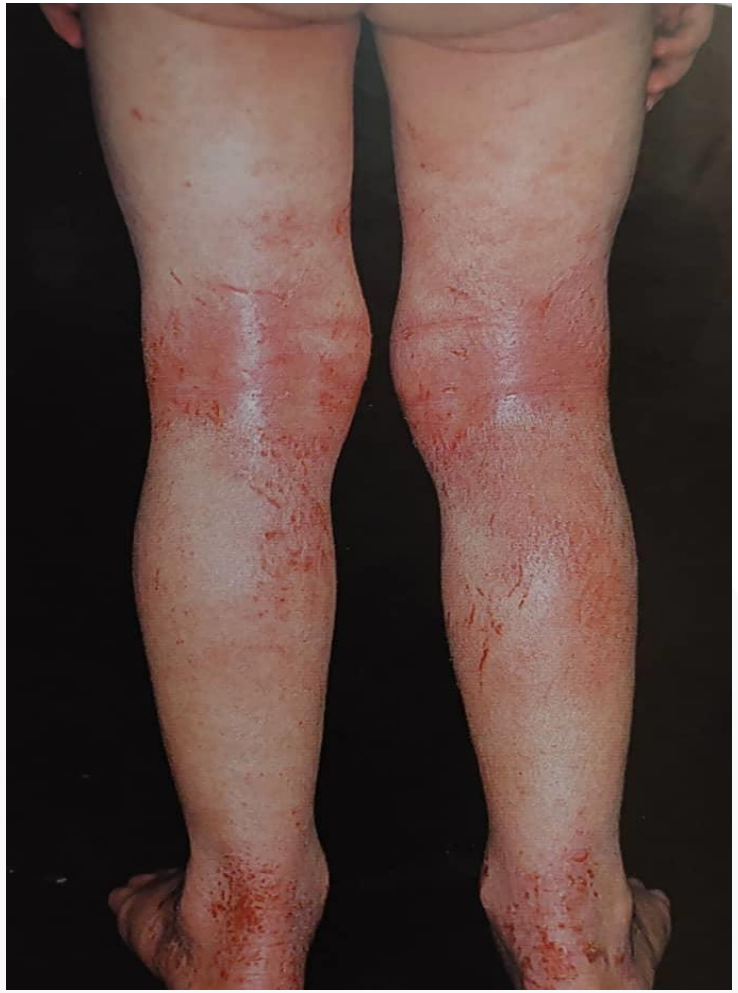


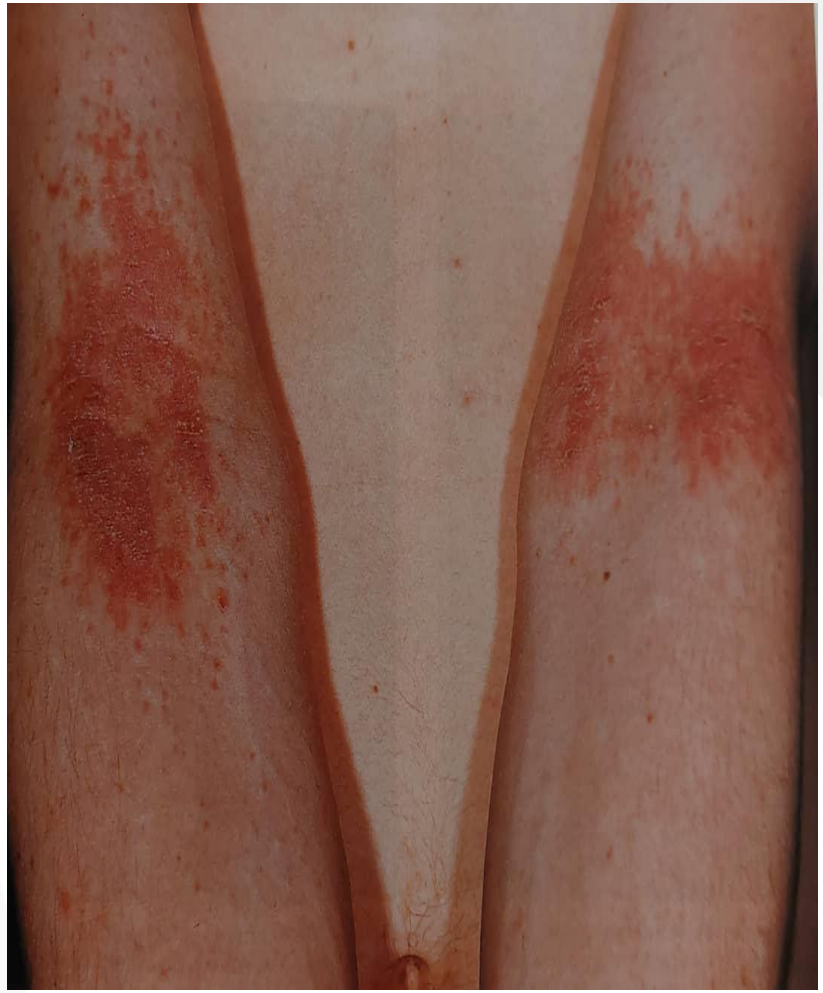
- In childhood AD (age 2 to 12 years), the lesions tend to be less exudative and often become lichenified.
- The classic sites of predilection are the antecubital and popliteal fossae (flexural eczema).
- Other common locations include the wrists, hands, ankles, feet, neck, and eyelids, although any area can be involved.
- Xerosis typically becomes pronounced and widespread.


B. Childhood







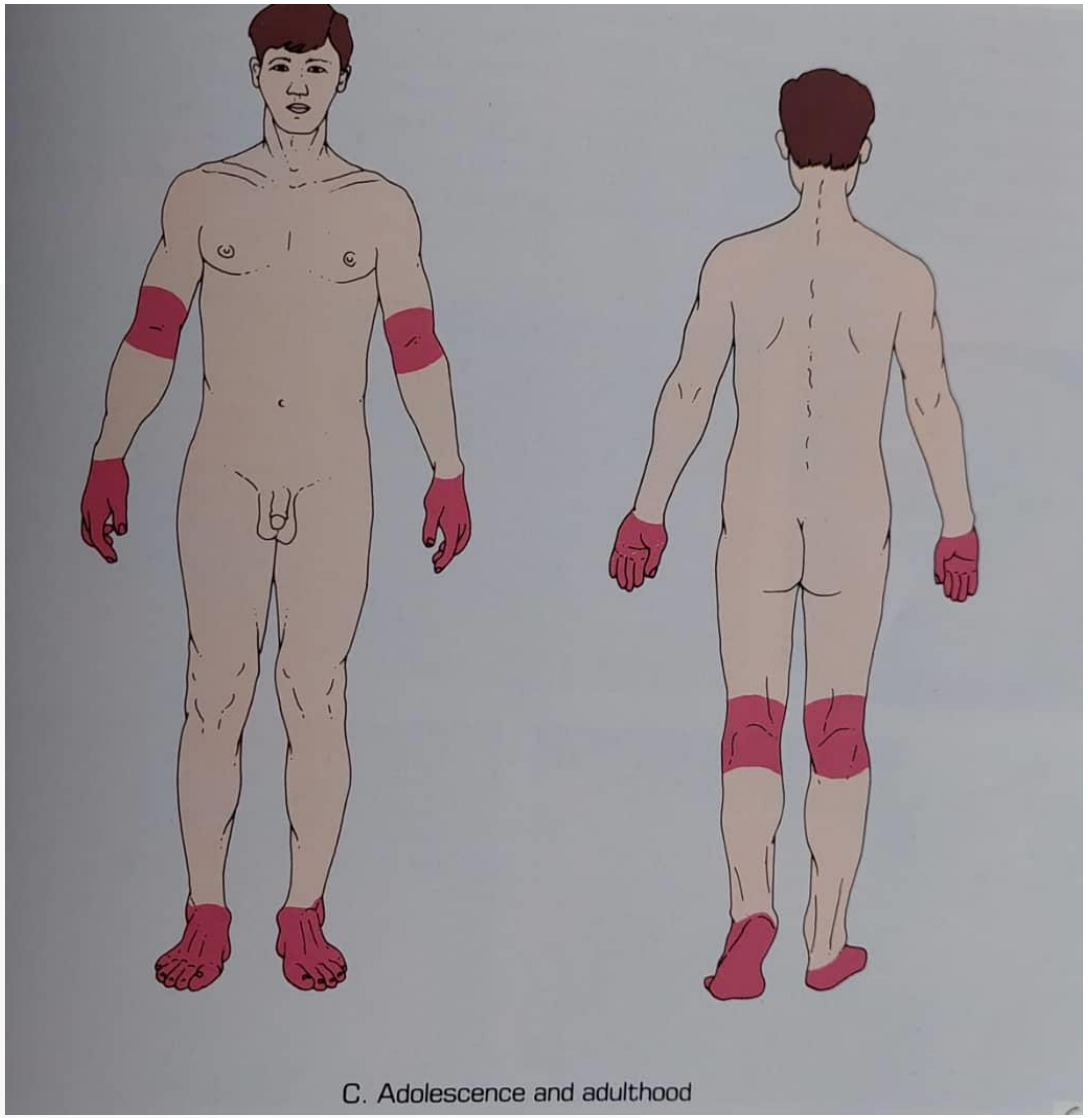


- Adult/adolescent AD (age >12 years) also features subacute to chronic, lichenified lesions, and involvement of the flexural folds typically continues. However, the clinical picture may also change.

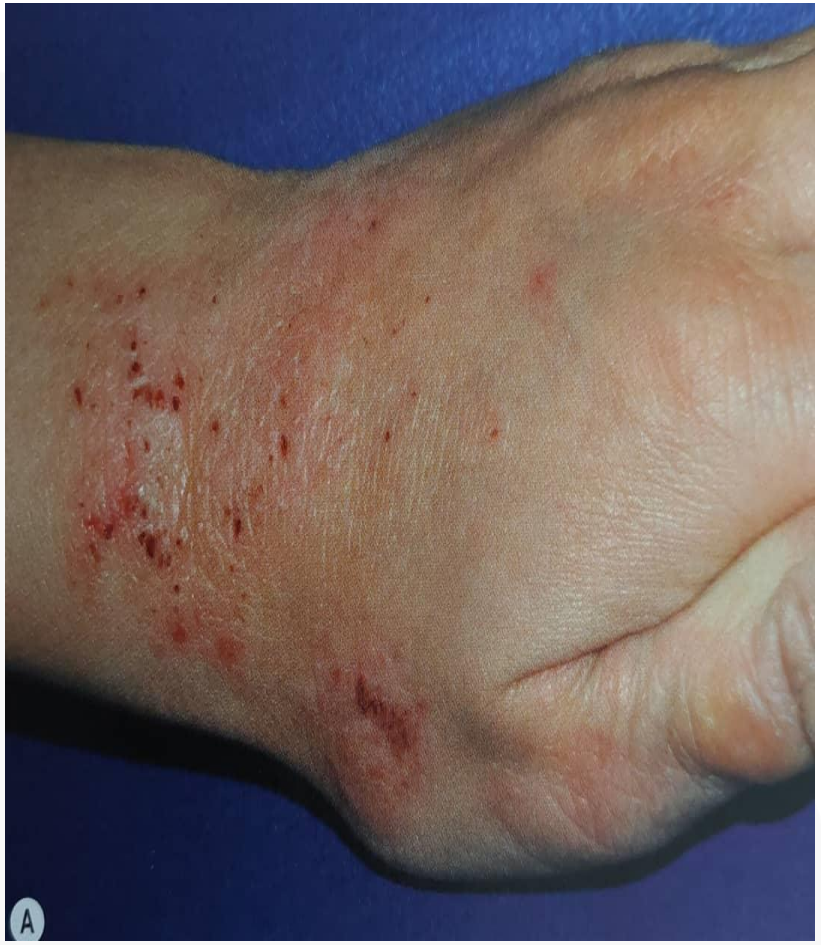
- Adults with AD frequently present with chronic hand dermatitis that has both endogenous and exogenous components, while others have primarily facial dermatitis, often with severe eyelid involvement.

- Patients who have suffered from continuous AD since childhood are more likely to have extensive disease that is resistant to treatment.

- Such individuals may also have severe excoriations and chronic papular skin lesions because of habitual scratching and rubbing



C. Adolescence and adulthood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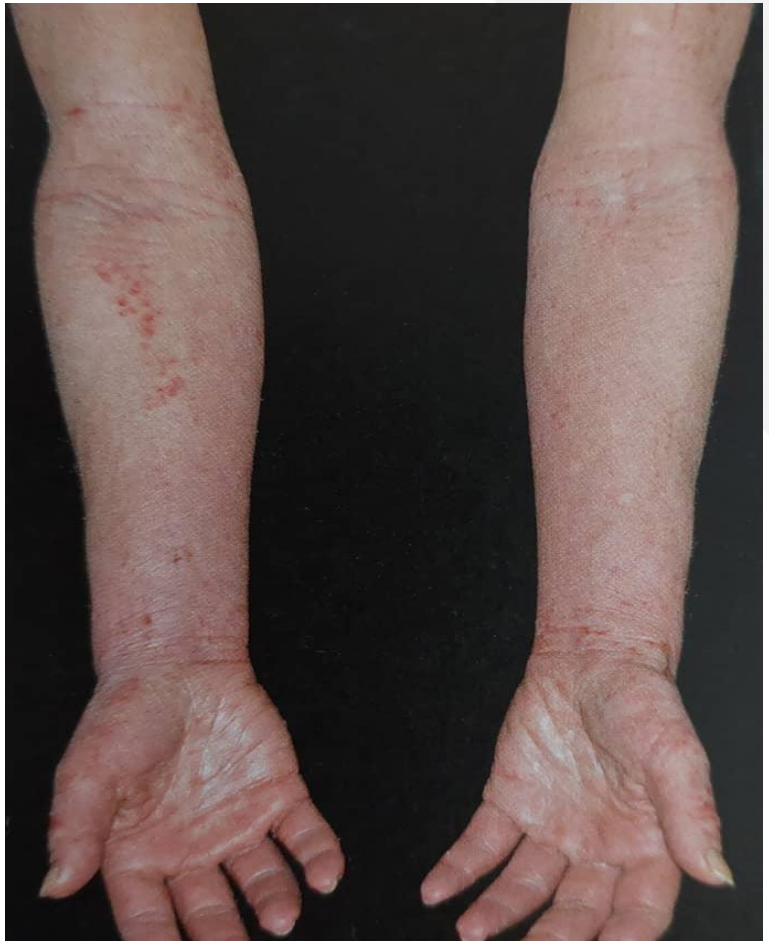
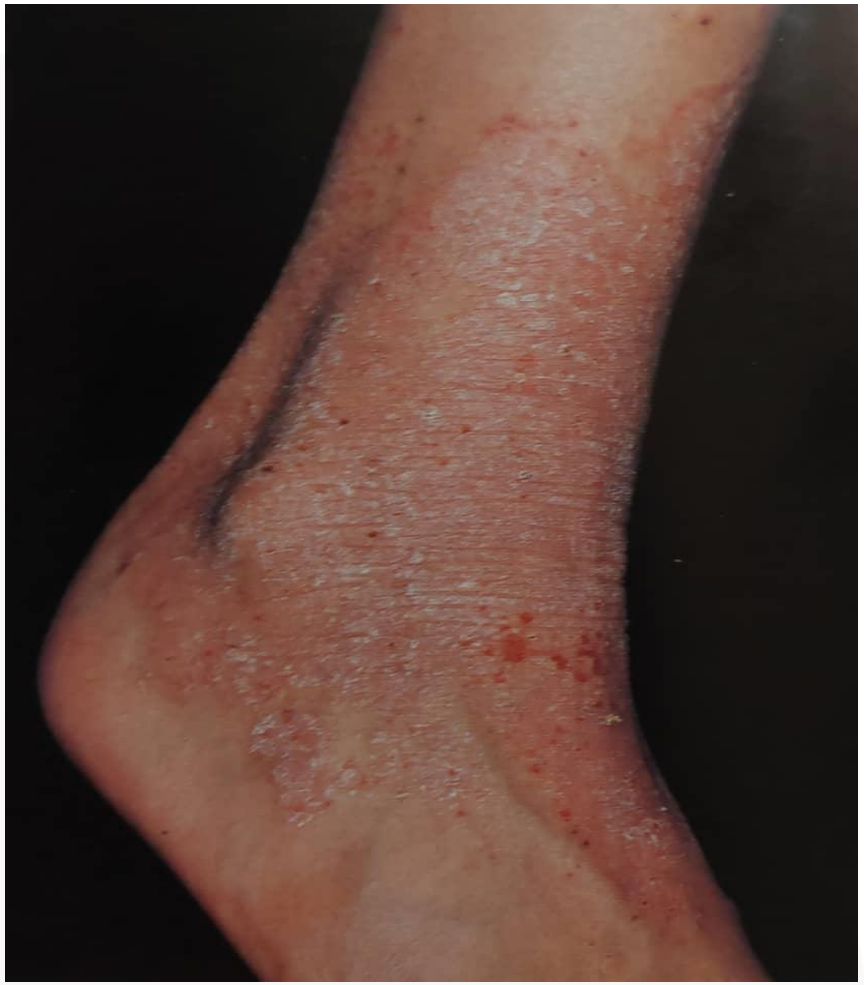
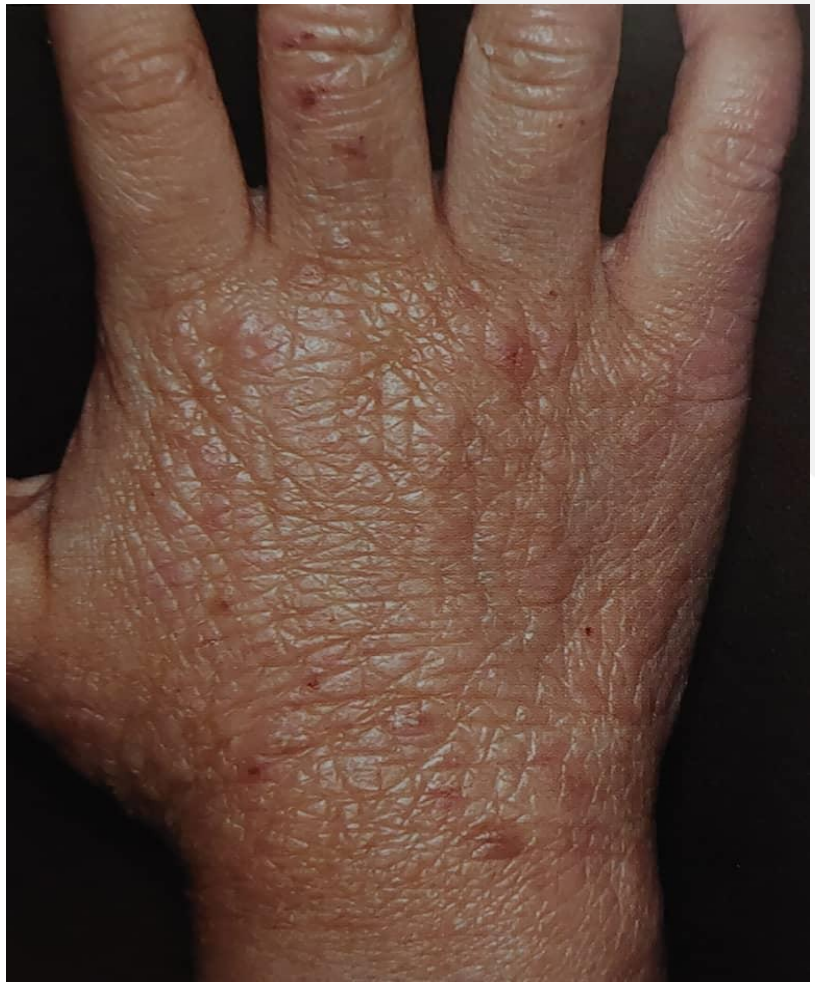
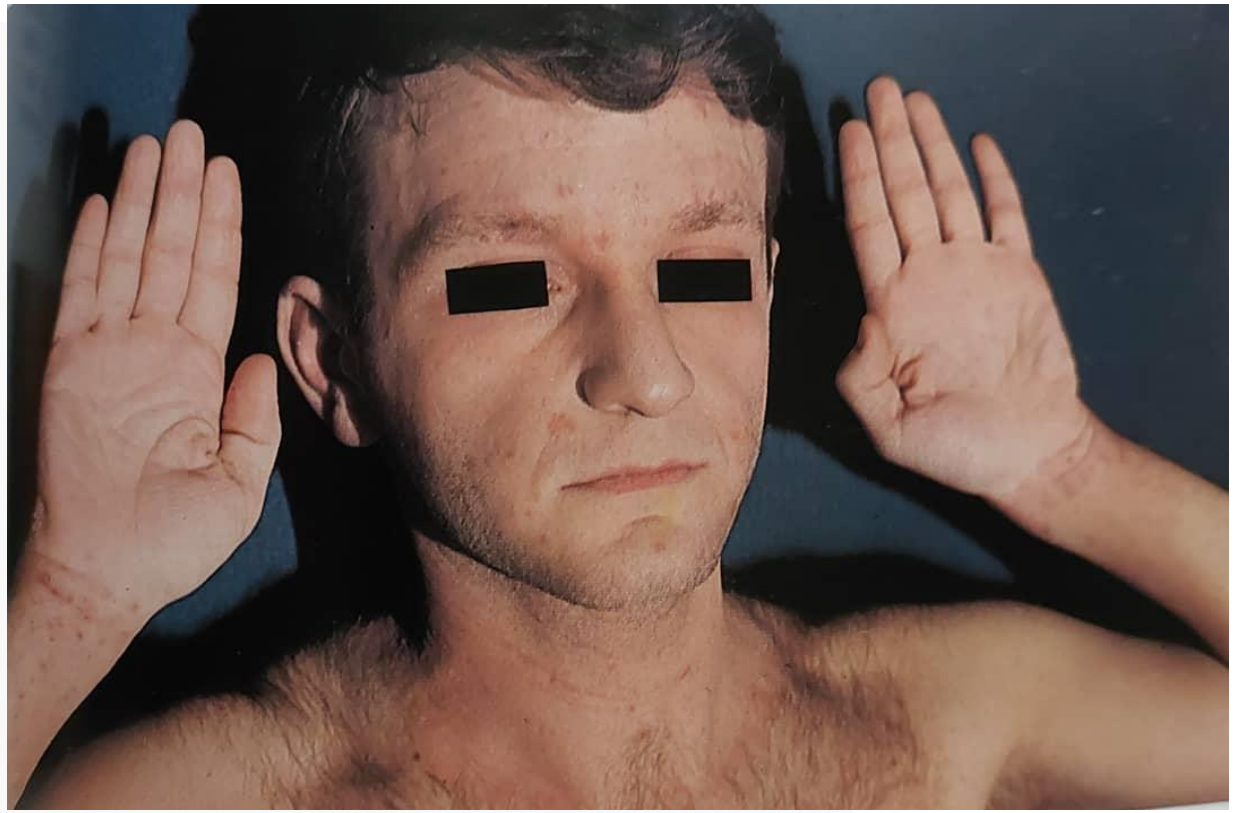
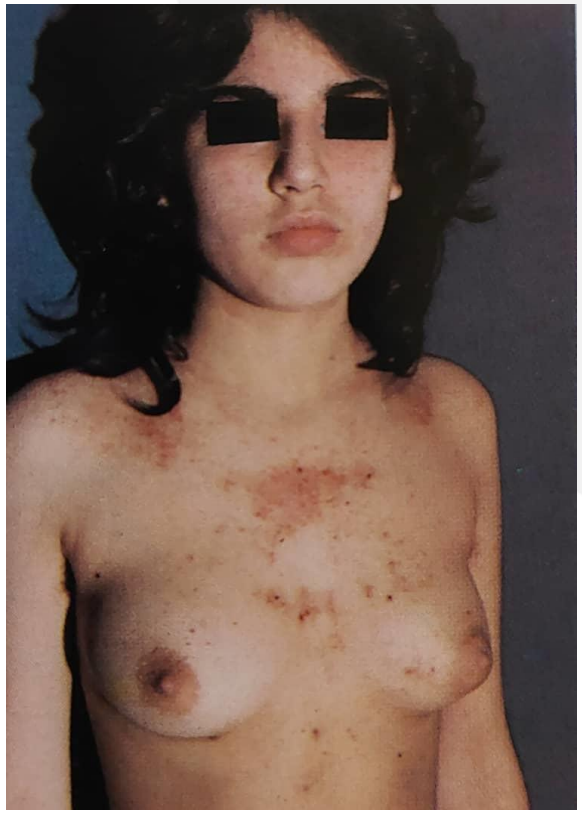










- **Senile AD (age >60 years)** is characterized by marked xerosis.

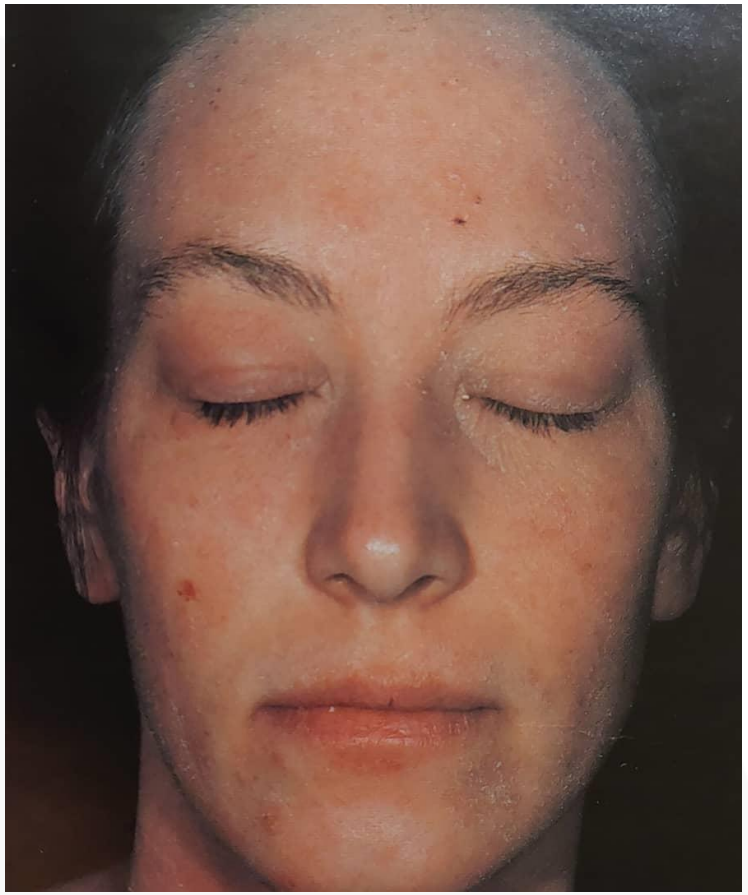
- Most of these patients do not have the lichenified flexural lesions typical of AD in children and younger adults.

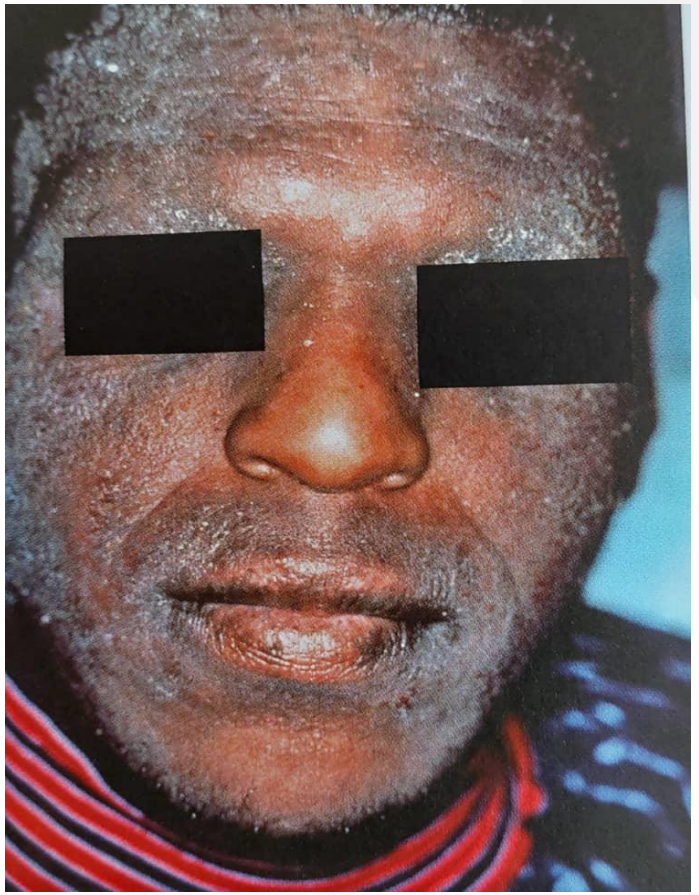
- AD has a profound adverse impact on the quality of life of affected children and adults, with intense pruritus and stigmatization often resulting in **sleep disturbances, psychological distress, social isolation, disrupted family dynamics, and impaired functioning at school or work.**

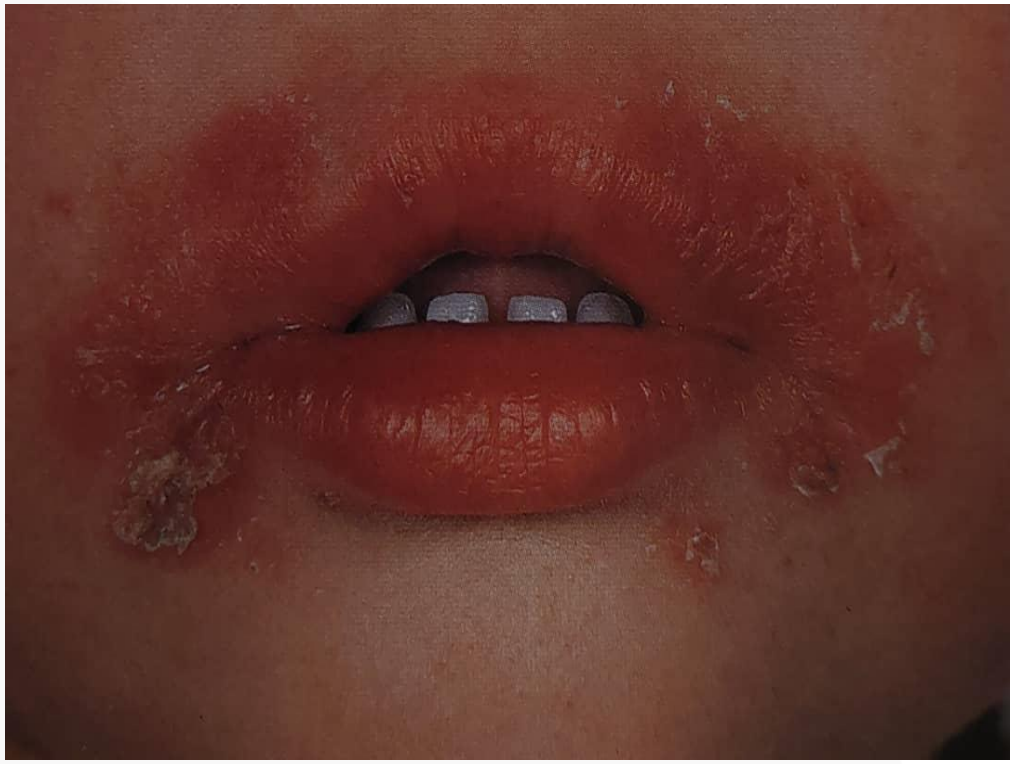
- Children with AD experience greater impairment in their quality of life than those with diabetes mellitus or epilepsy.

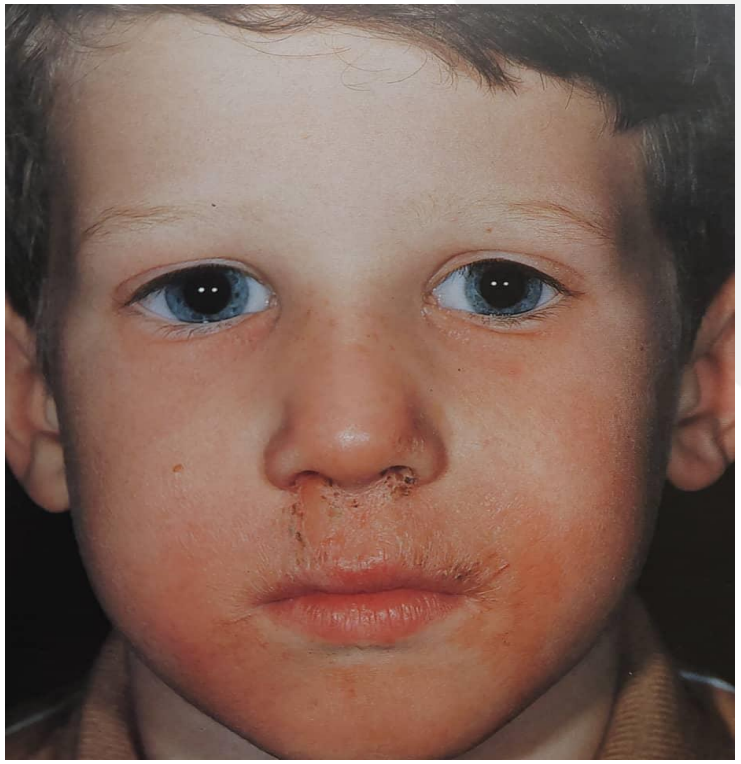
Regional Variants of Atopic Dermatitis

- Several regional variants of AD can occur in isolation or together with the classic age-related patterns of involvement described above.
- The face is a frequent location for site-specific manifestations.
- Eczema of the lips, referred to as cheilitis sicca, is common in AD patients, especially during the winter.
- It is characterized by dryness (“chapping”) of the vermilion lips, sometimes with peeling and fissuring, and may be associated with angular cheilitis. Patients try to moisten their lips by licking, which in turn may irritate the skin around the mouth, resulting in so-called **lip-licker’s eczema**



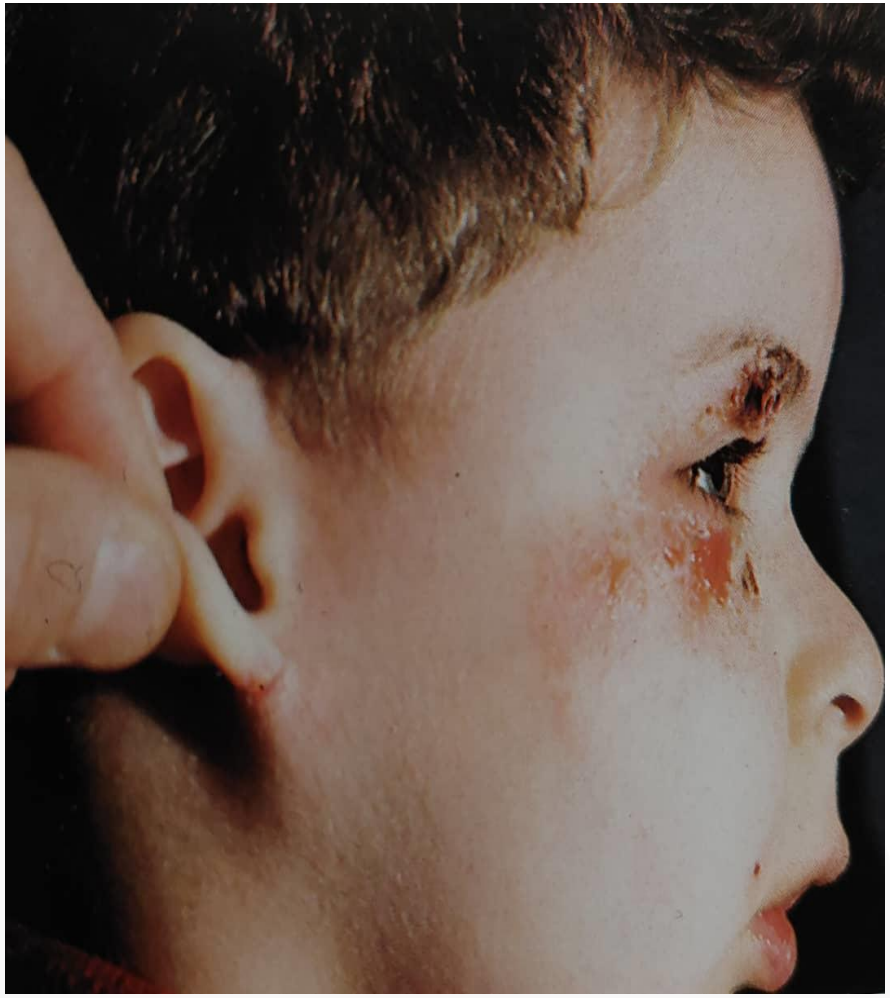


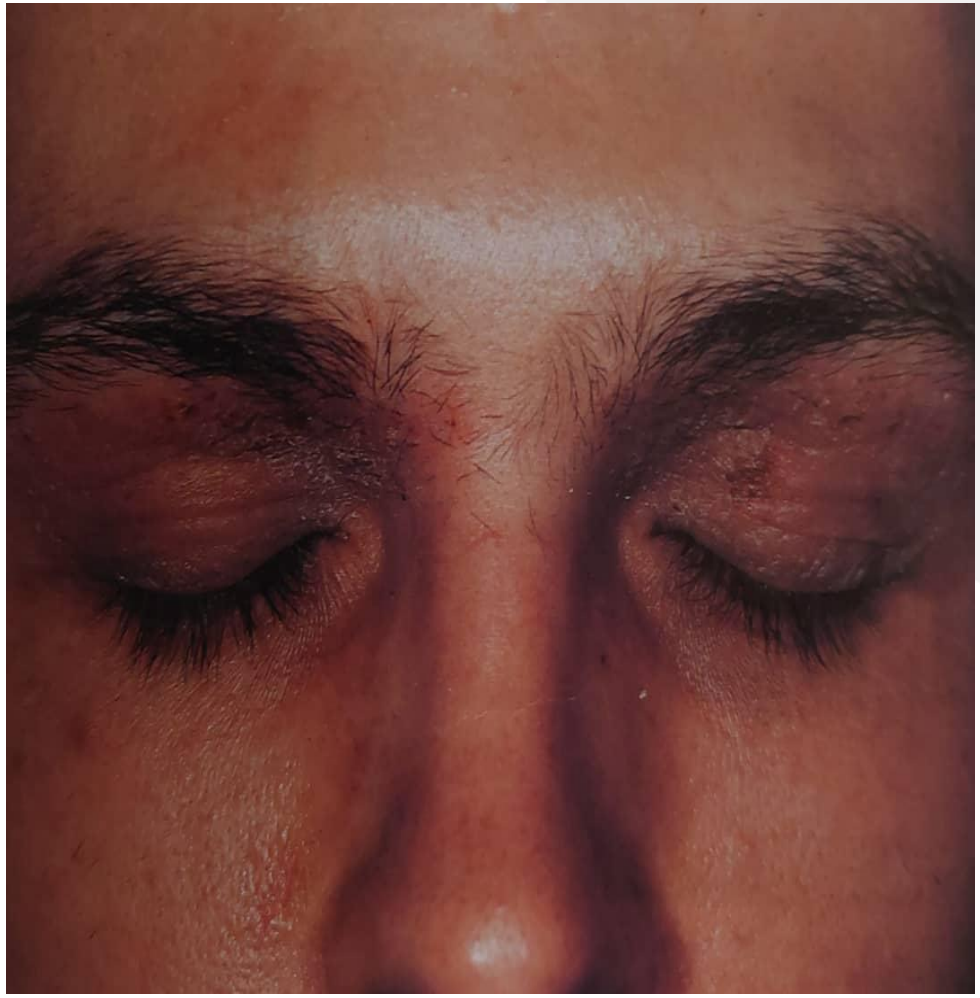




- Ear eczema is another common feature of childhood AD , presenting as erythema, scaling, and fissures under the earlobe and in the retroauricular area, sometimes in association with bacterial superinfection.

- Eyelid eczema can represent the only manifestation of AD, especially in adults. In contrast to eyelid eczema due to other causes, it is characterized by lichenification of the periorbital skin.

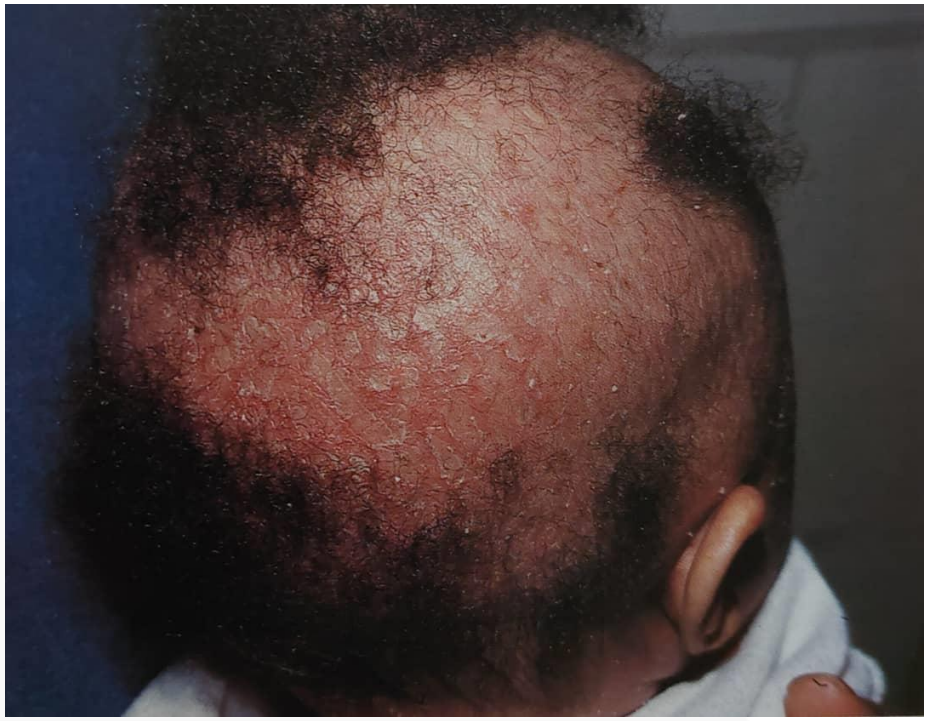


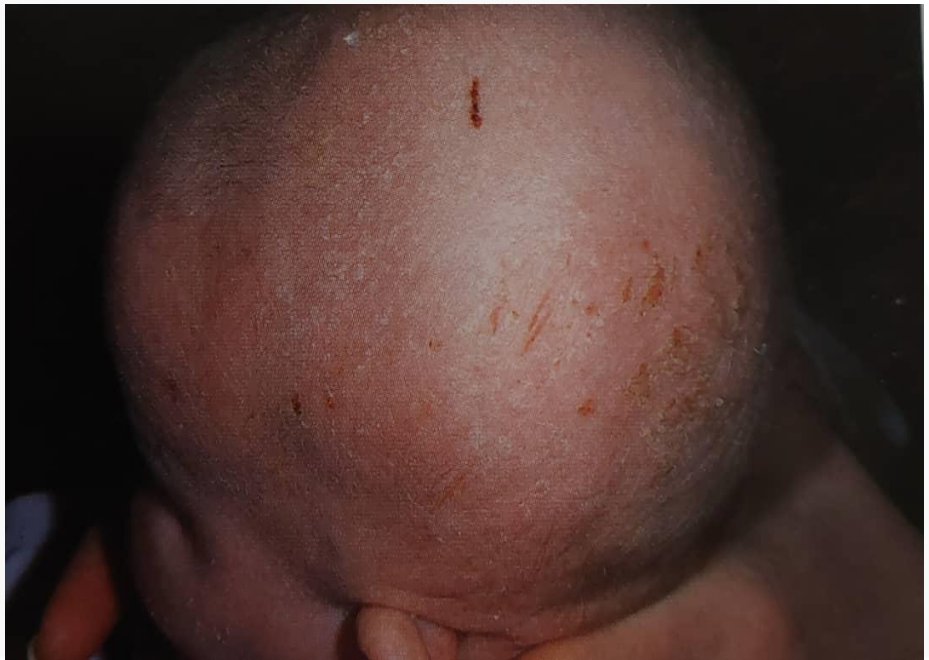


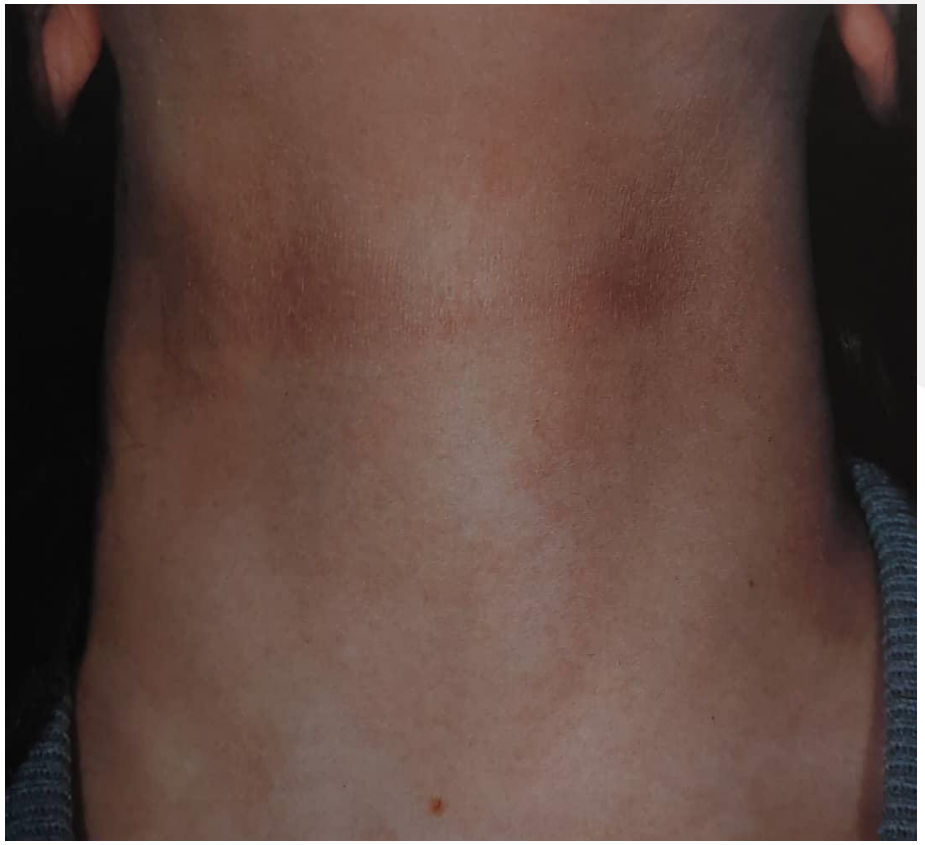
- "Head and neck dermatitis" represents a variant of AD that typically occurs after puberty and primarily involves the face, scalp, and neck.

- When older children and teenagers present with this form of AD, it usually persists into adulthood.

- Malassezia yeasts, which are members of the skin microbiome in the head and neck area, may be an aggravating factor for this presentation, and systemic antifungal treatment with itraconazole or fluconazole may be of benefit.







- **Juvenile plantar dermatosis** presents with “glazed” erythema, scale, and fissuring on the balls of the feet and plantar aspect of the toes in children with AD.
- Atopic hand eczema affects ~60% of adults with AD and may be the only manifestation of the condition.
- FLG mutations are associated with increased likelihood of hand eczema in children and adults, and frequent exposure to water and other irritants in household or occupational settings represents another risk factor.
- **Atopic hand eczema typically involves the volar wrists and dorsum of the hands.**
- The palms and sides of the fingers may develop the deep-seated vesicles of dyshidrotic eczema

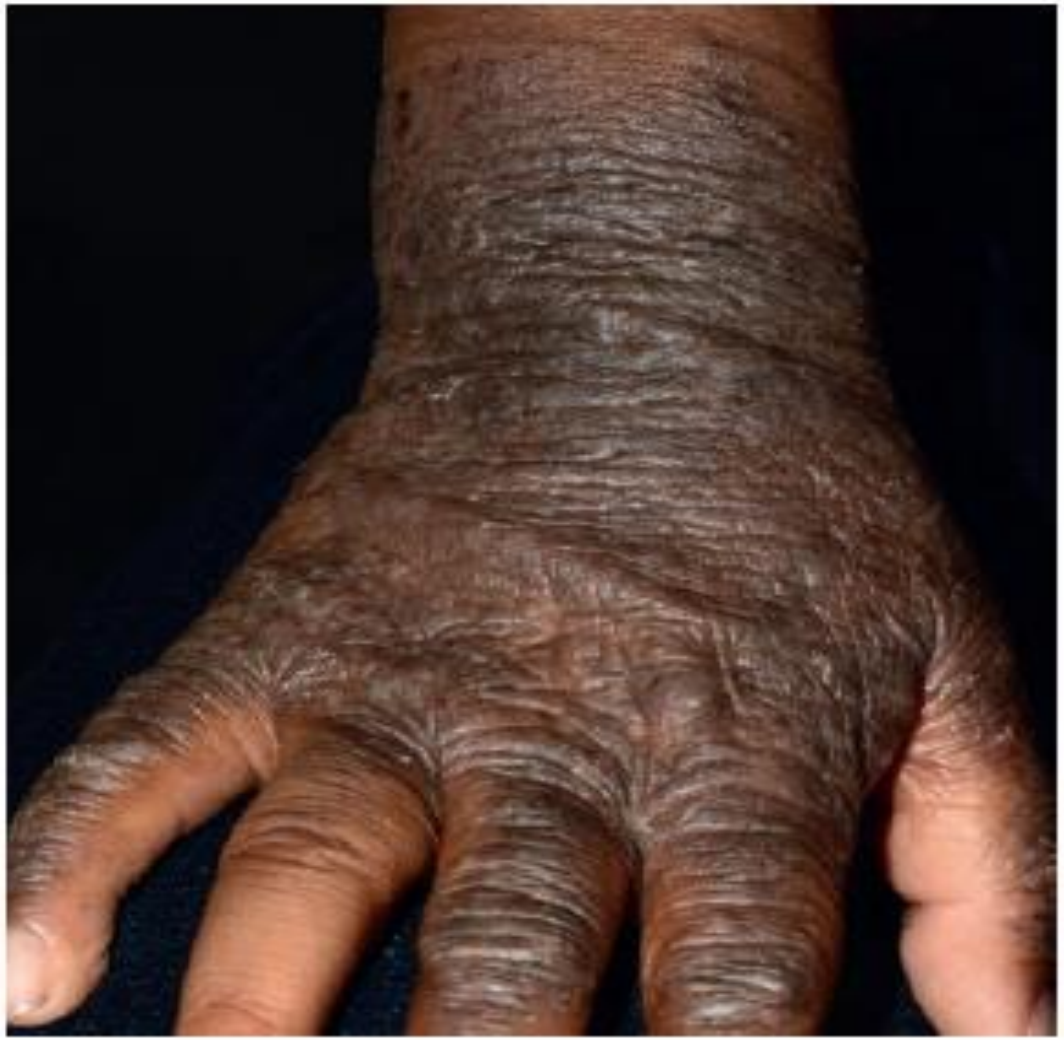


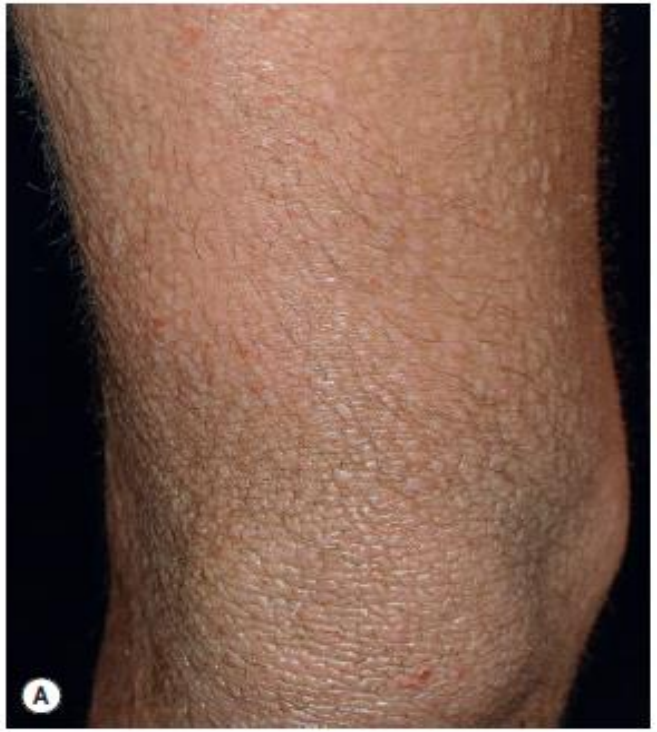
Fig. 12.10 Atopic dermatitis with severe chronic hand involvement. Note the marked lichenification.
Courtesy, Julie V Schaffer, MD.

- The **prurigo form of AD** favors the extensor aspects of the extremities and is characterized by firm, dome-shaped papules and nodules with central scale-crust, similar to prurigo nodularis lesions in nonatopic patients.

- **Nummular (discoid)** lesions also tend to develop on the extremities in children and adults with AD, appearing as coin-shaped eczematous plaques, usually 1 to 3 cm in diameter and often with prominent oozing and crusting. They are similar in appearance to nummular dermatitis occurring outside the setting of atopy.

- **Frictional lichenoid eruption** has a predilection for atopic children and presents as multiple small, flat-topped, pink to skin-colored papules on the **elbows and (less often) knees and dorsal hands**.

- **Chronic nipple eczema** can develop in children adults with AD



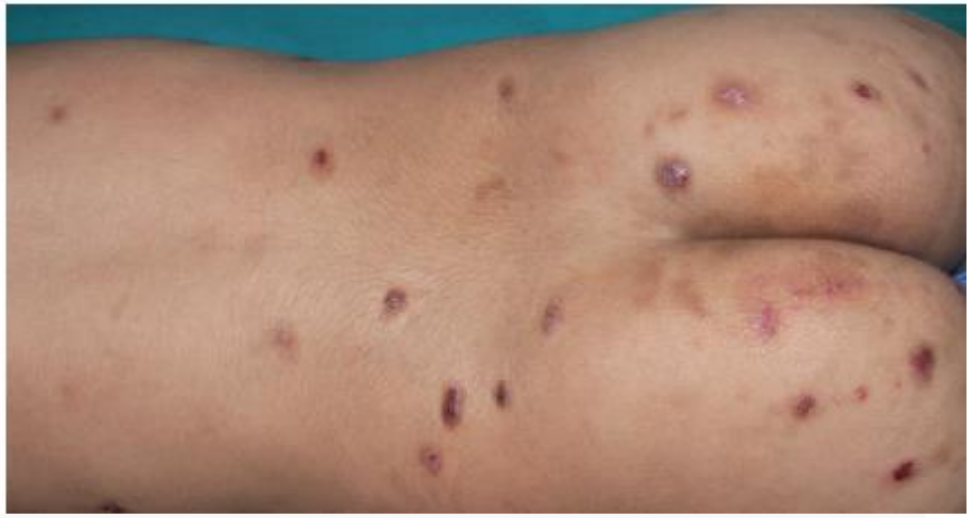
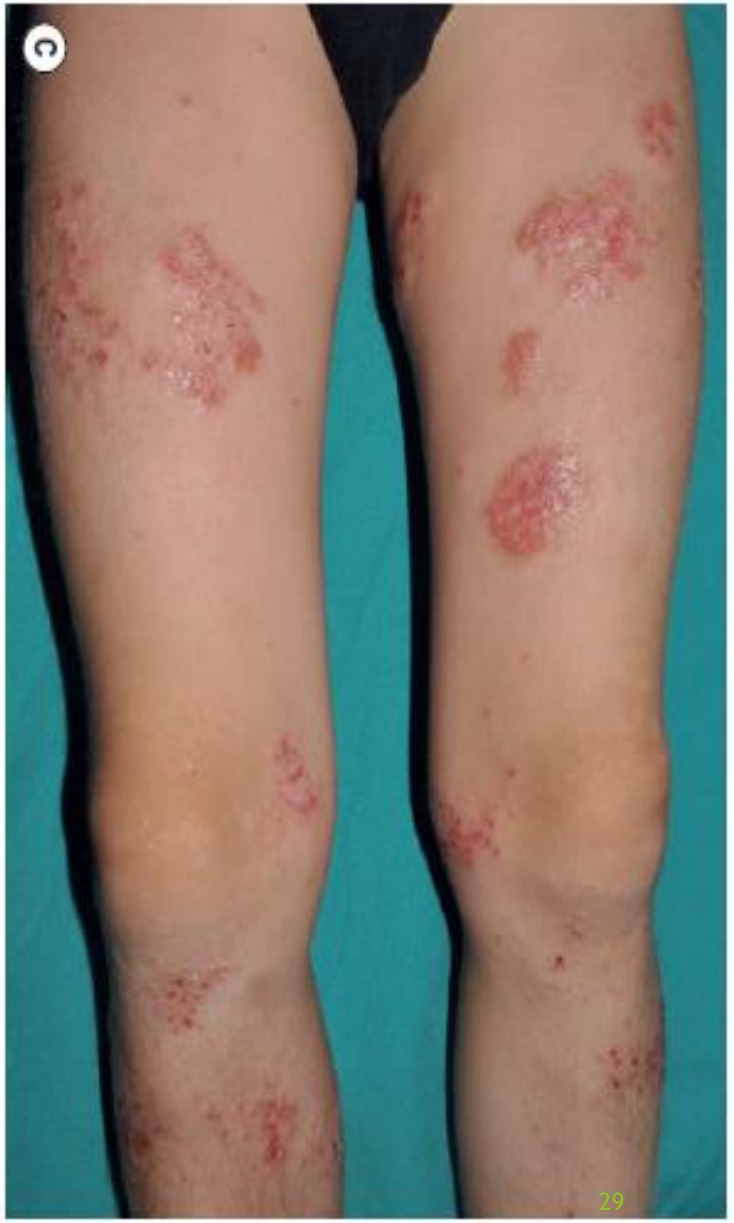
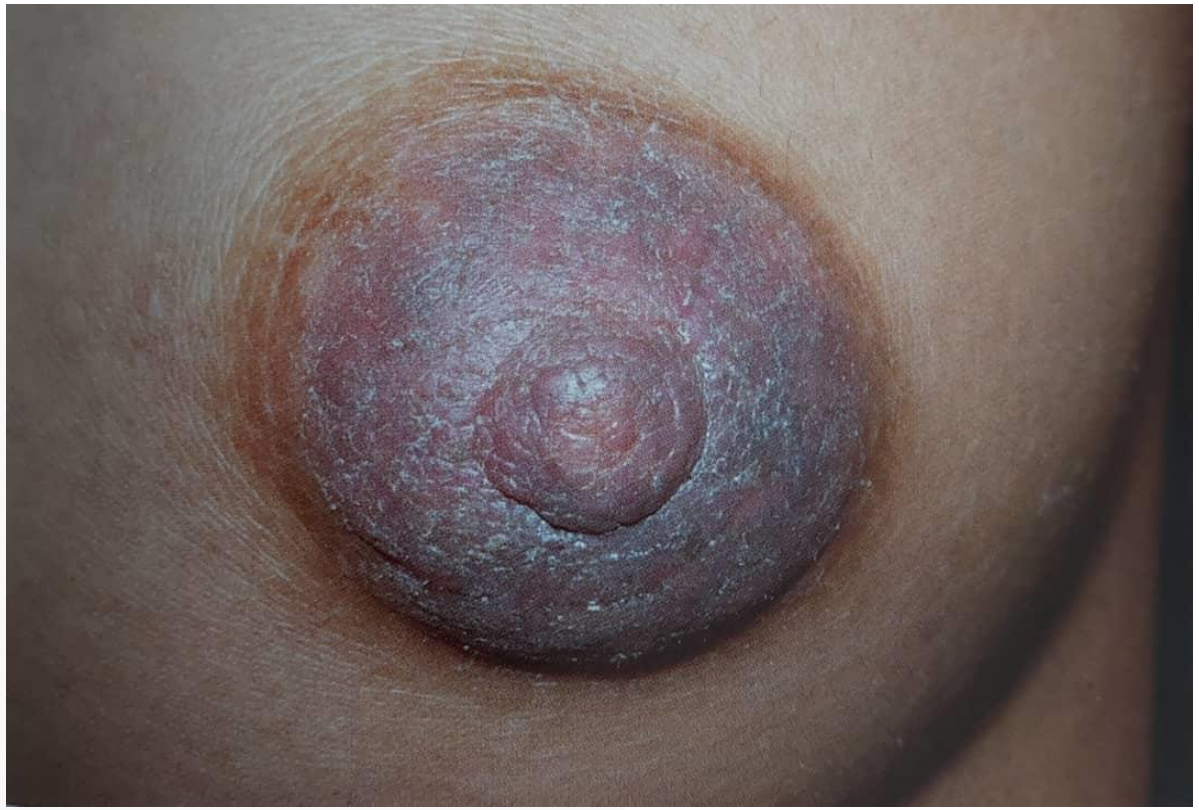


Fig. 12.12 Atopic dermatitis variants. **A** Chronic papular lesions resulting from habitual rubbing and scratching in the setting of longstanding disease. **B** Prurigo lesions presenting as firm, dome-shaped papules and nodules with central hemorrhagic crust. **C** Nummular plaques with oozing anc crusting on the legs. *A, Courtesy, Thomas Bieber, MD, and Caroline Bussmann, MD; B, C, Courtesy, Antonio Torrelo, MD.*





ASSOCIATED FEATURES OF ATOPIC DERMATITIS

Dennie–Morgan folds ("atopic pleats"): lower lids

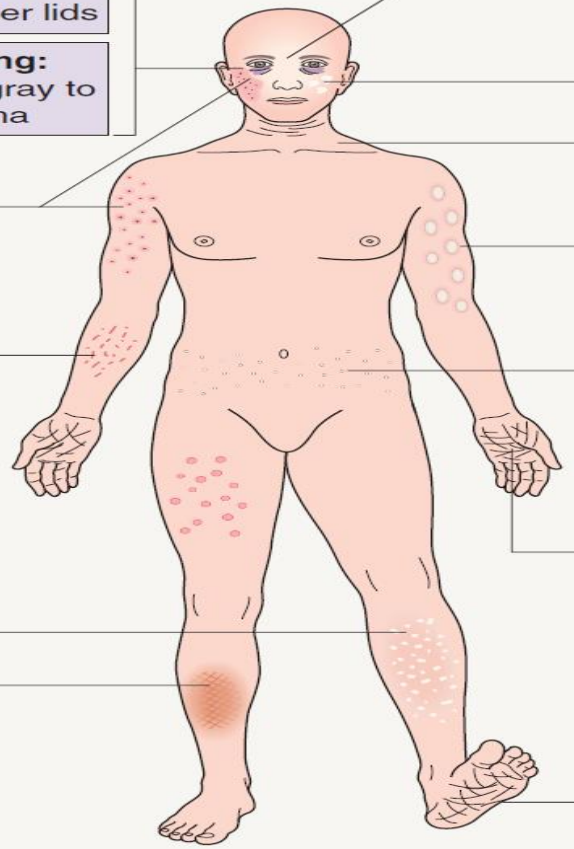
Periorbital darkening: ("allergic shiners"): gray to violet–brown ± edema

Keratosis pilaris: keratotic follicular papules with erythematous rim or (on cheeks) background of patchy erythema

Excoriations: linear or punctate

Xerosis: dry skin with fine scaling

Ichthyosis vulgaris: fine whitish to polygonal brown scaling that favors the shins and spares the flexures



Central facial pallor

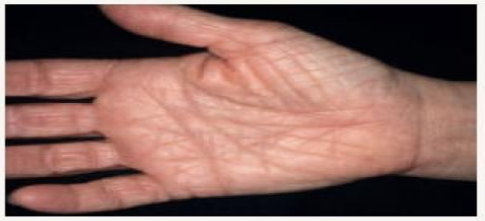
Pityriasis alba: ill-defined hypopigmented macules ± fine scaling

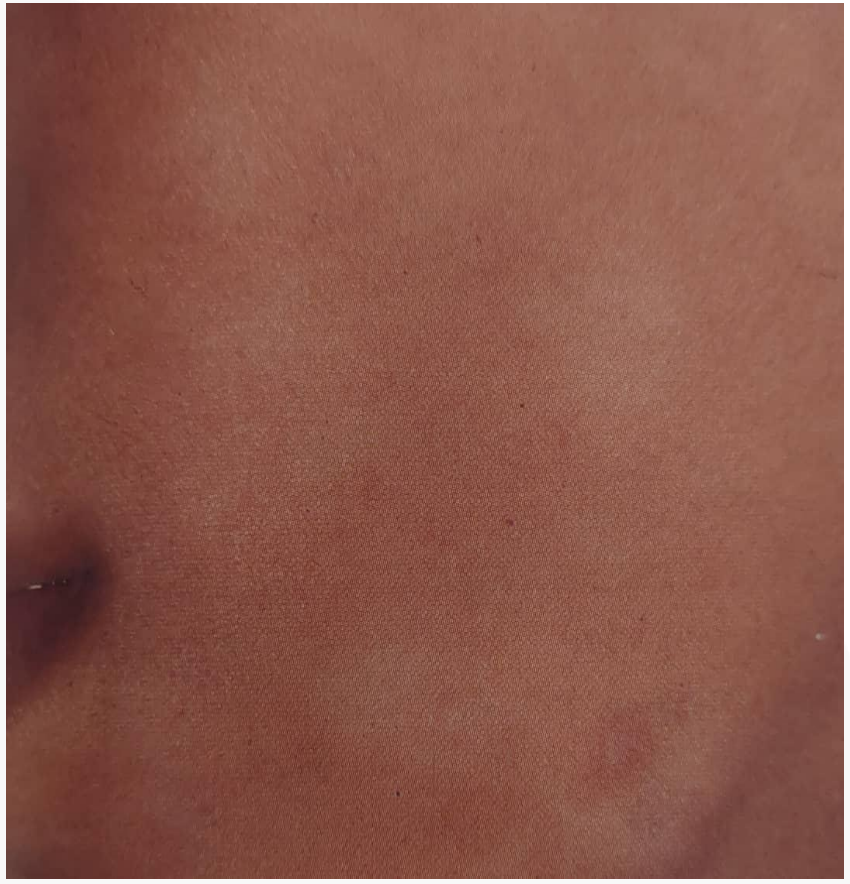
Anterior neck folds

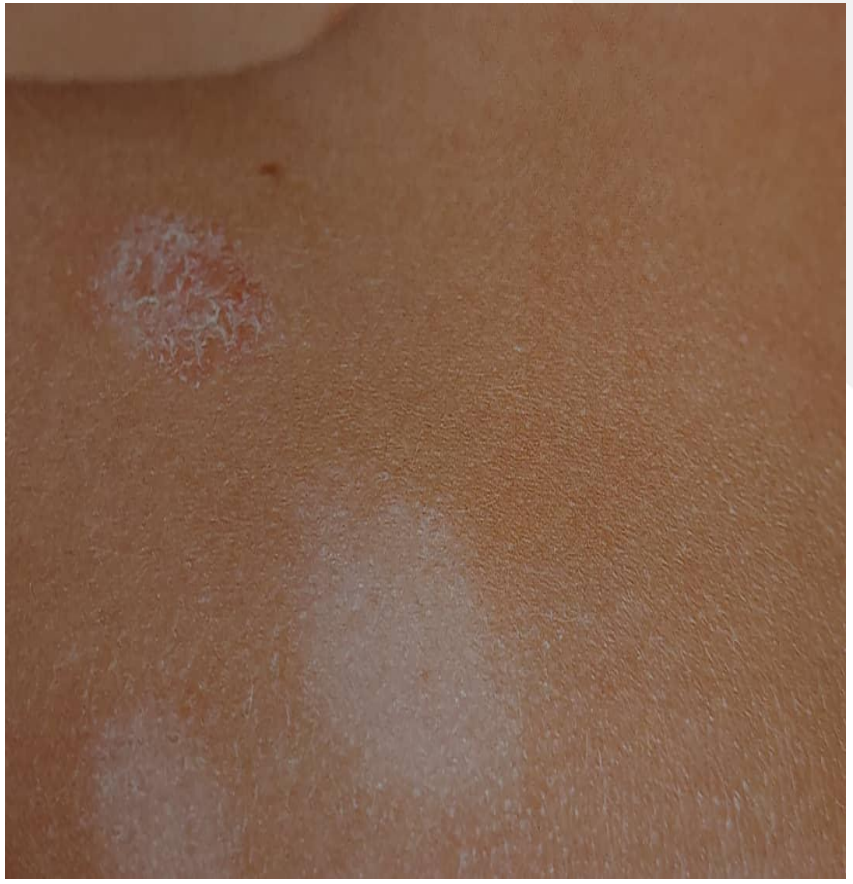
Postinflammatory hypo- or hyperpigmentation: at sites of previous eczematous lesions

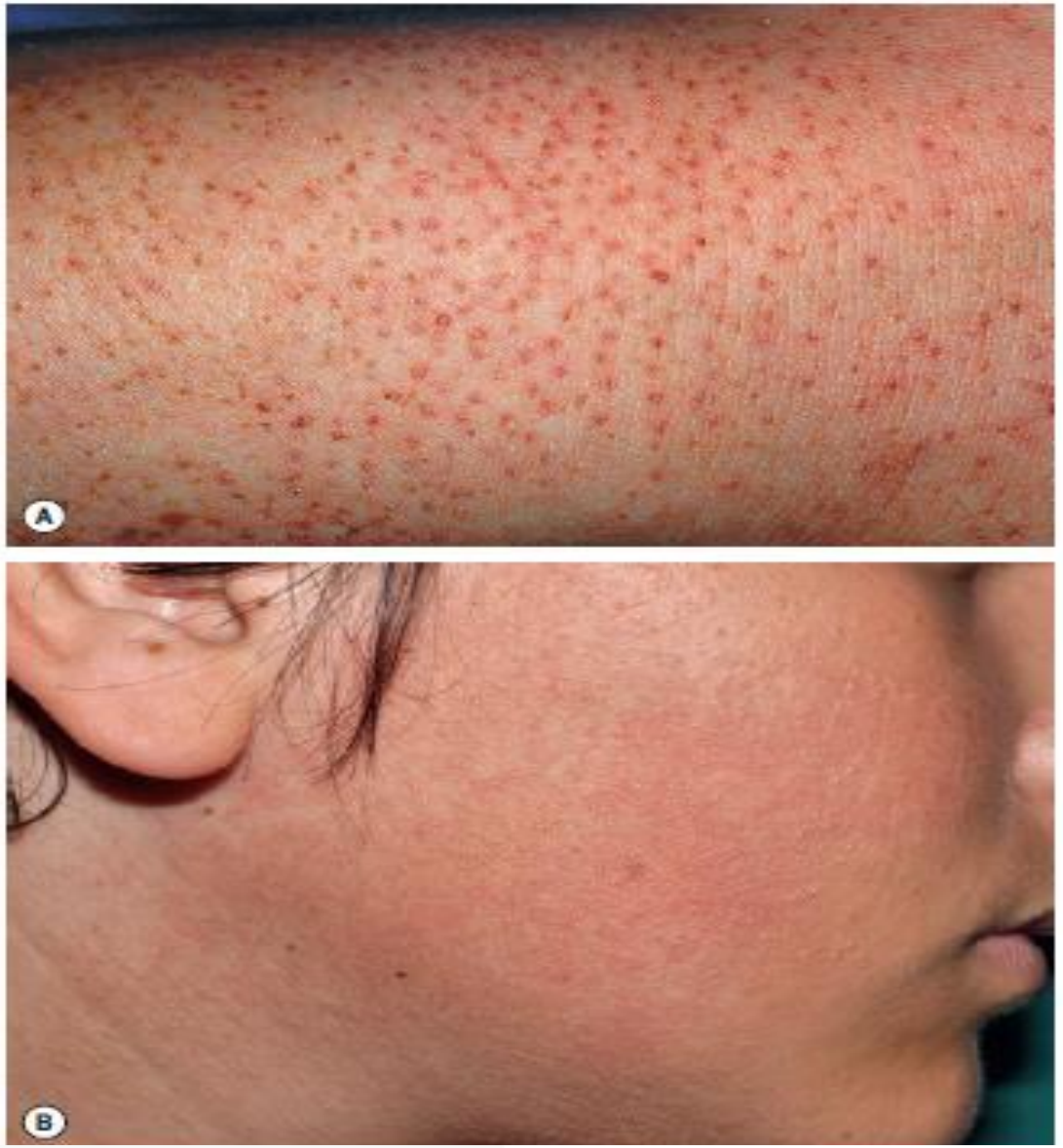
Follicular prominence: with "goose bump"-like appearance

Palmar and plantar hyperlinearity





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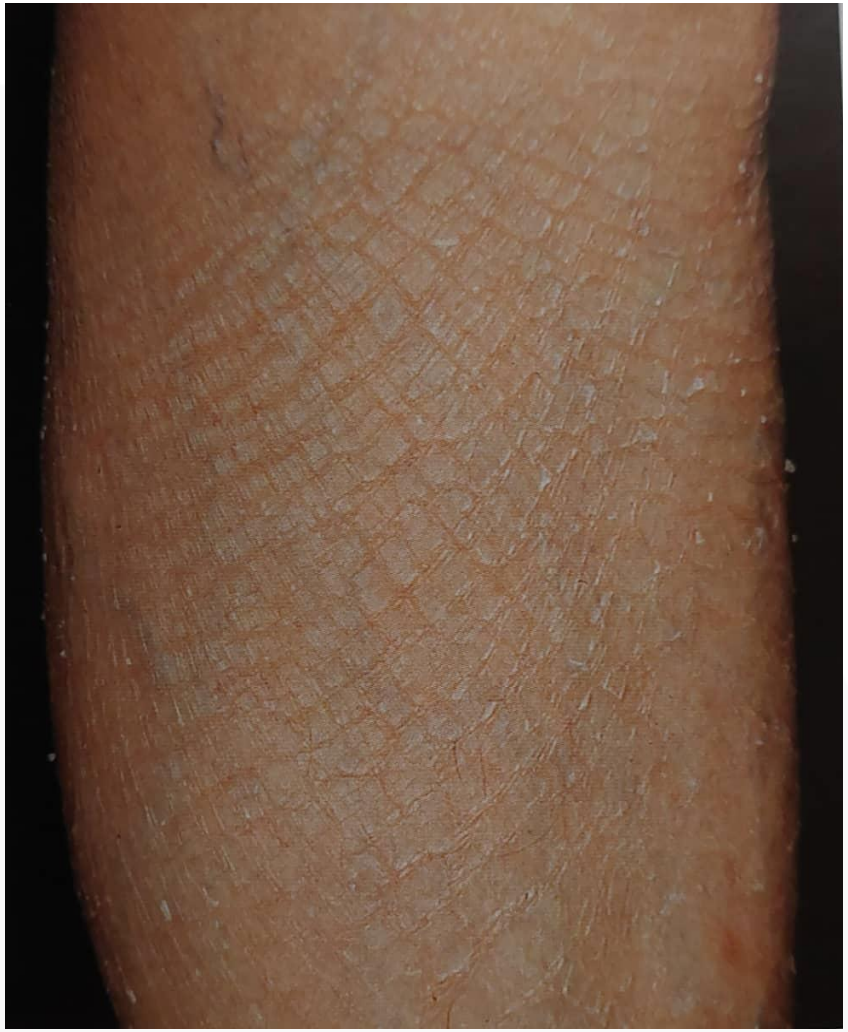
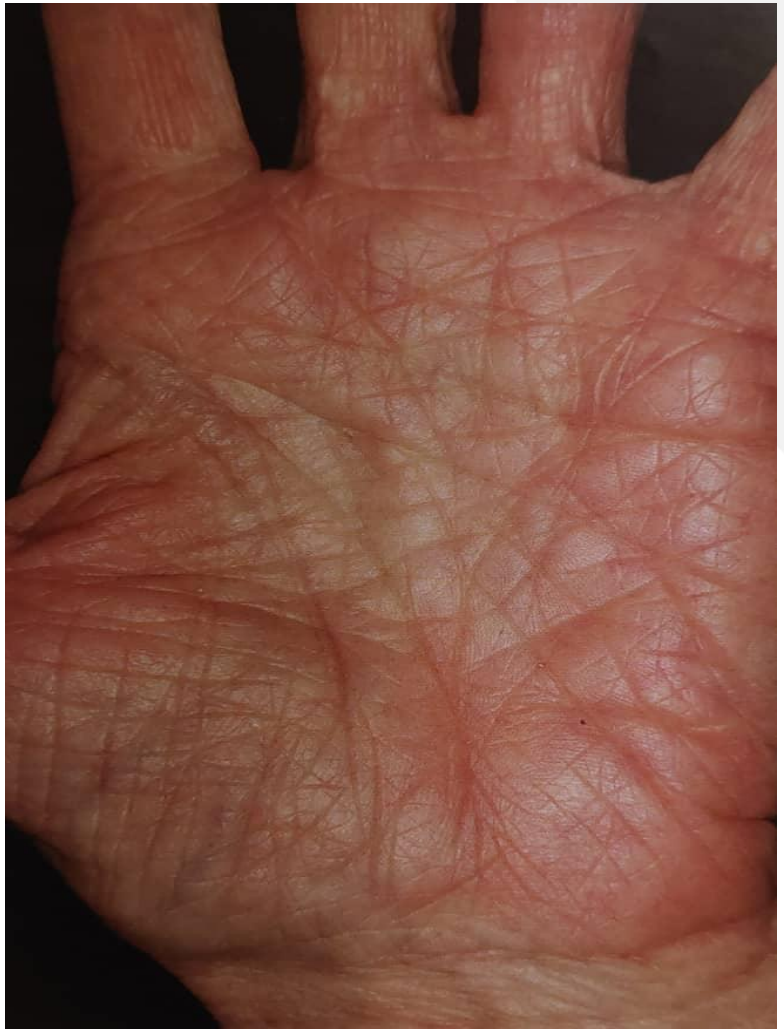
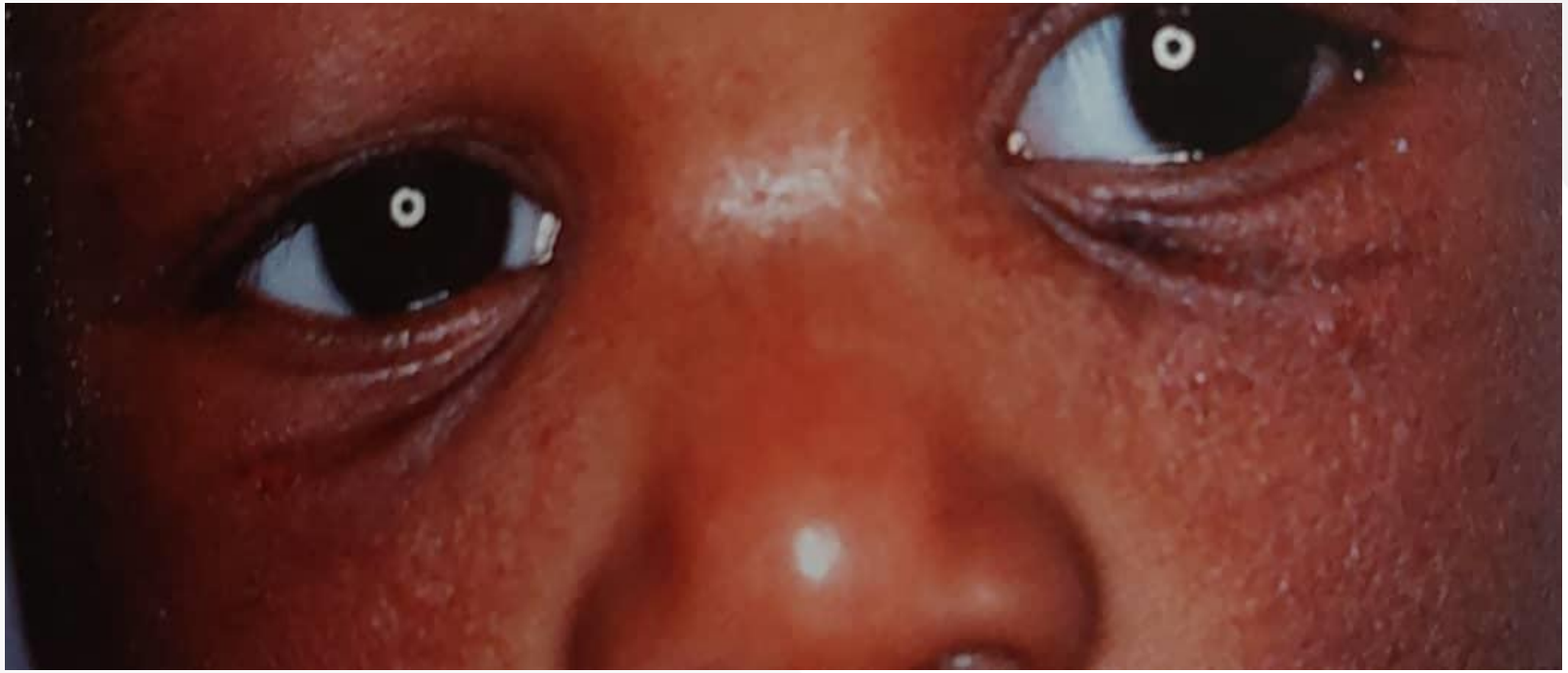
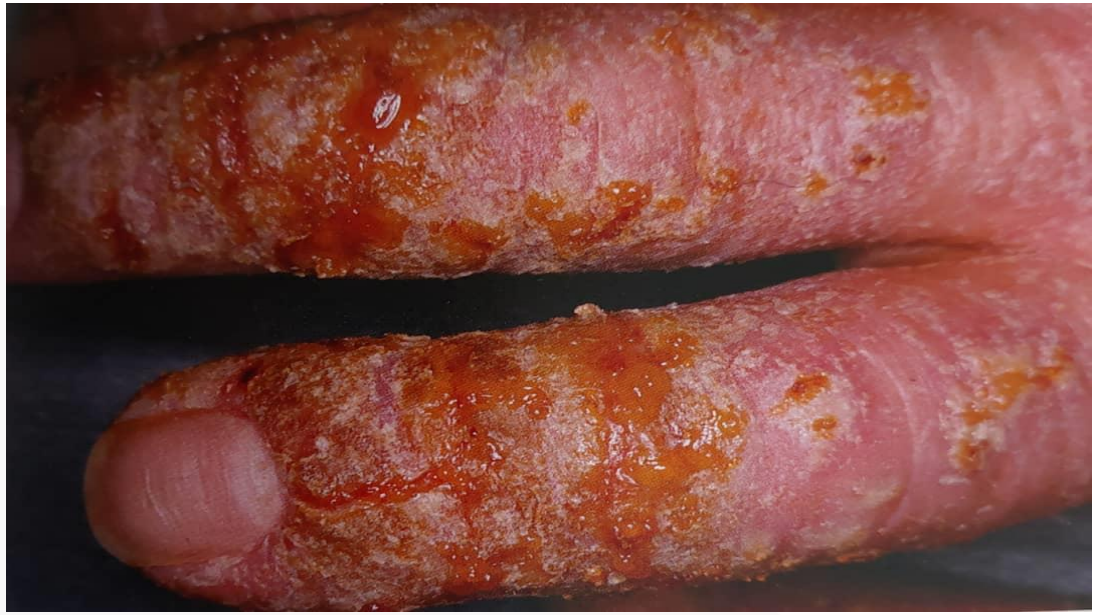


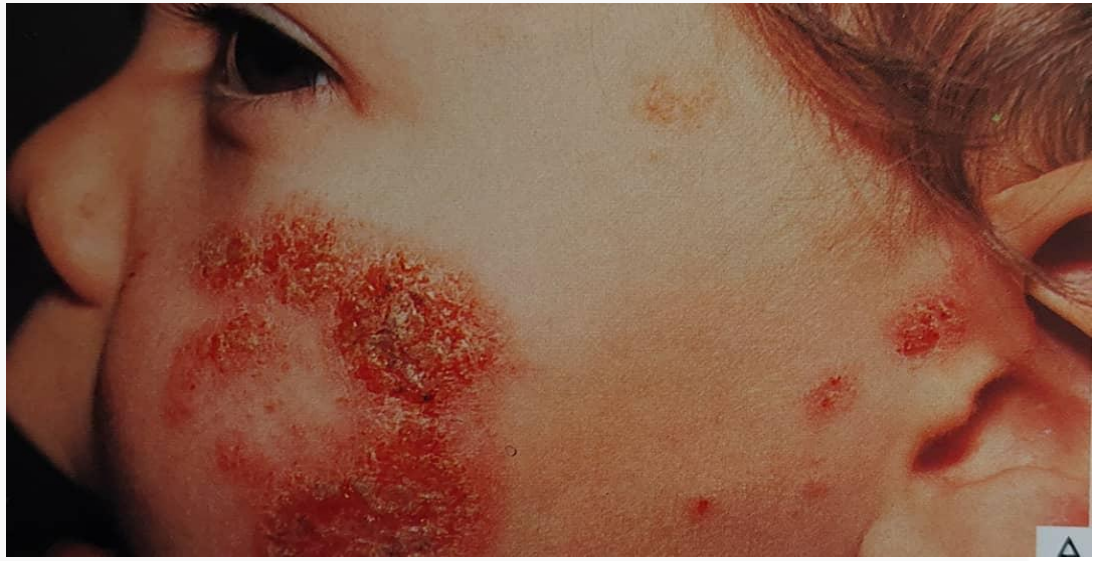


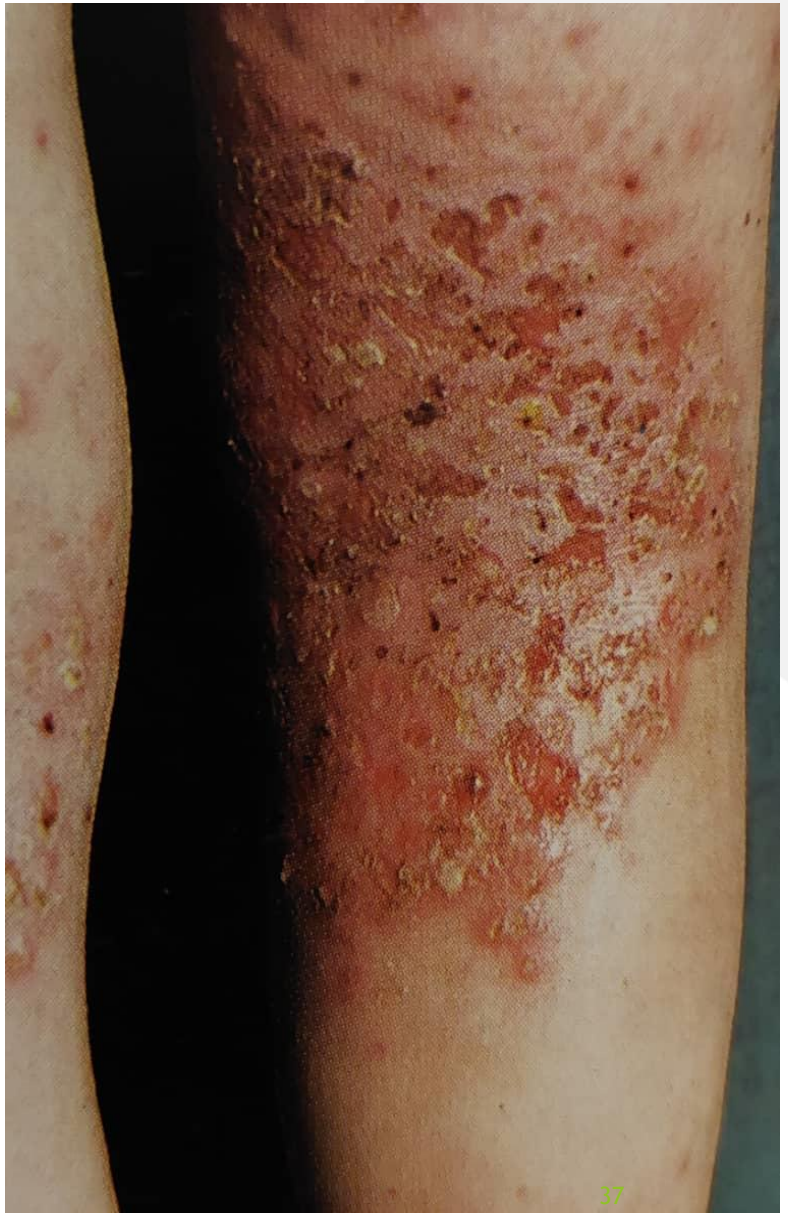


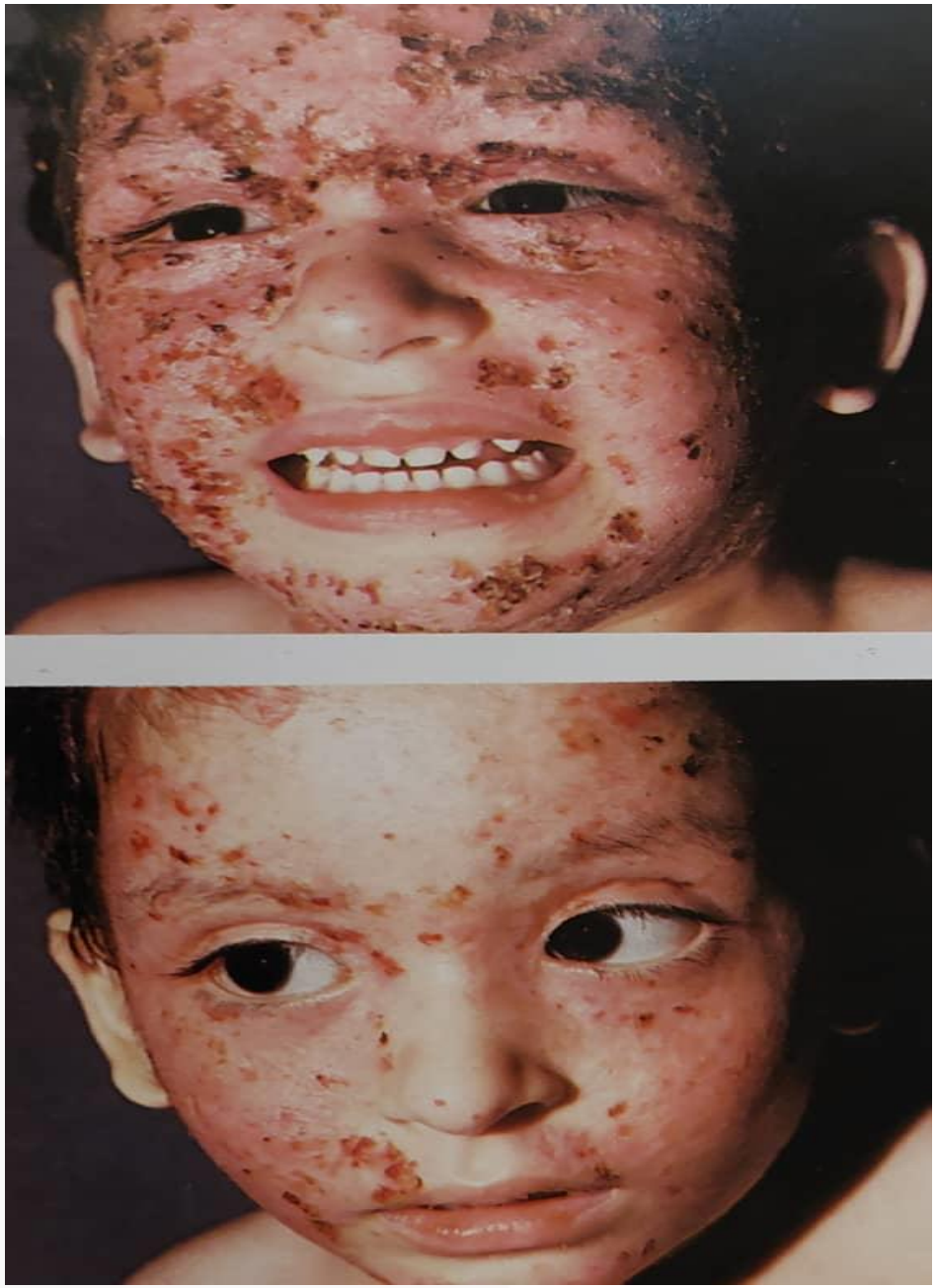
Complications

- Infections
- **Bacterial and viral infections** represent the most common complications of AD. Considering that S. aureus colonizes the skin of the vast majority of patients with AD, it is not surprising that impetiginization, which can also be caused by Streptococcus pyogenes, occurs frequently.
- Bacterial infections may exacerbate AD by stimulating the inflammatory cascade, e.g. via S. aureus exotoxins that act as superantigens
- **Eczema herpeticum** represents rapid dissemination of a herpes simplex viral infection over the eczematous skin of AD patients.
- It initially develops as an eruption of vesicles, but affected individual more often present with **numerous monomorphic, punched-out erosions with hemorrhagic crusting**







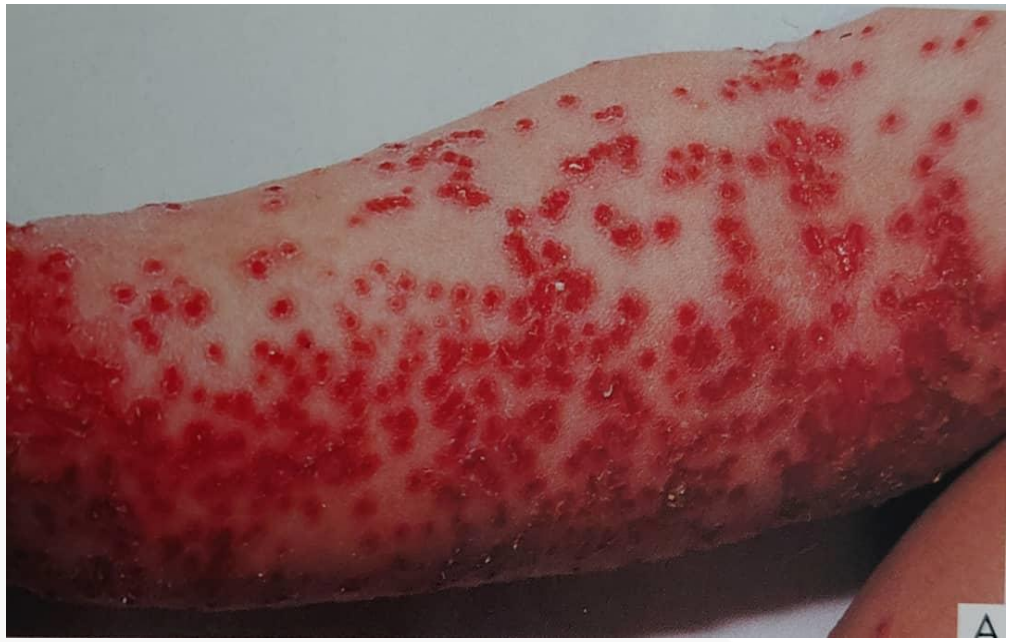


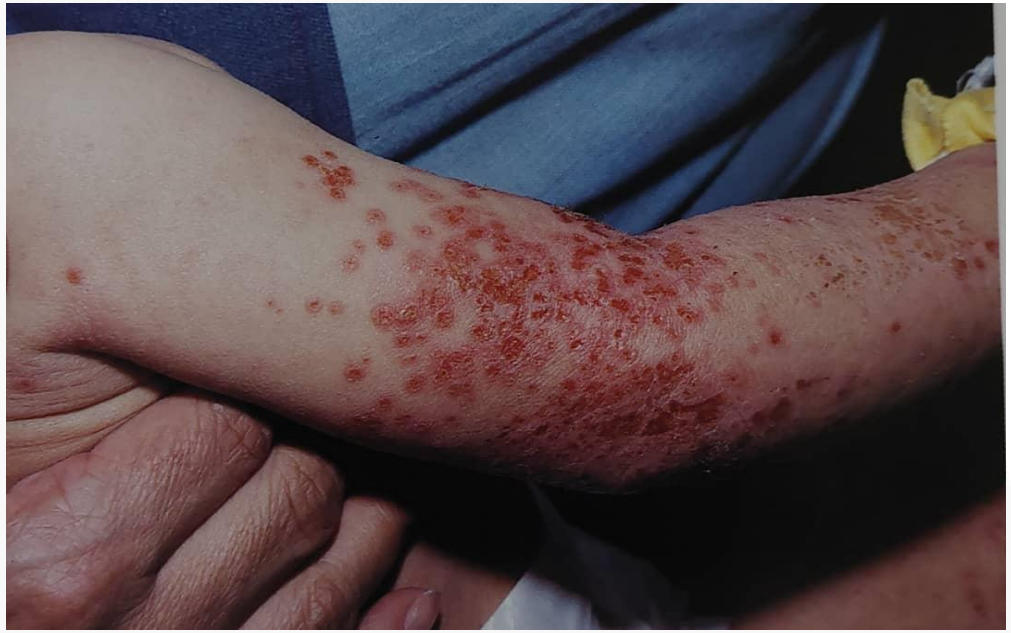
- Eczema herpeticum is frequently widespread and may occur at any site, with a predilectionfor the head, neck, and trunk.

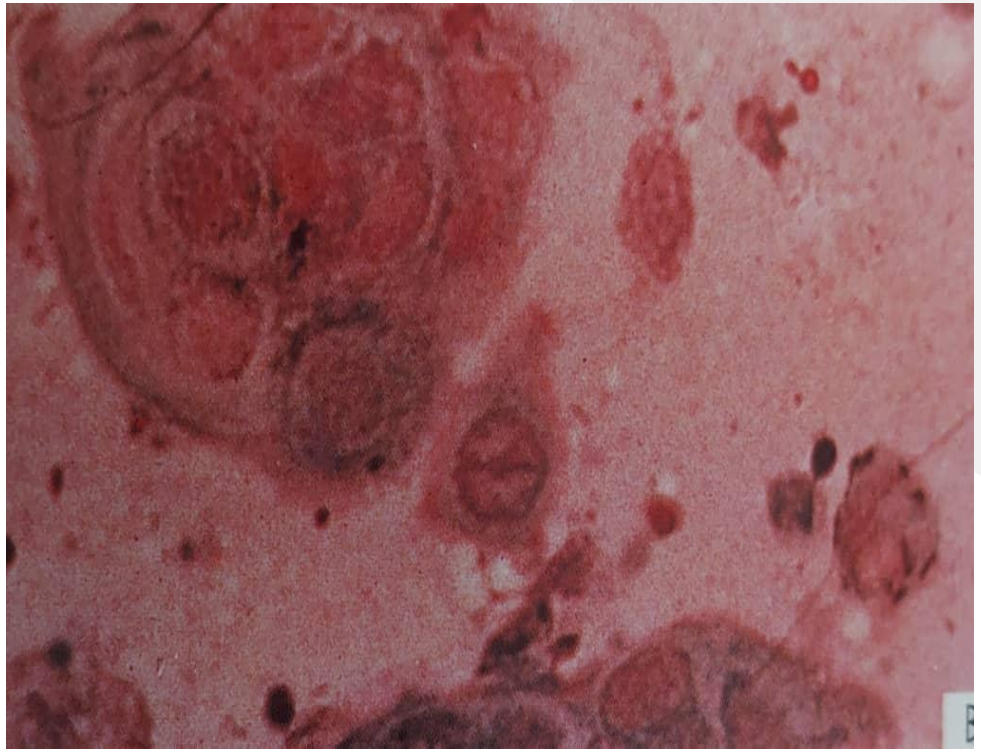
- It is often associated with fever, malaise, and lymphadenopathy, and complications may include superinfection with S. aureus or S. pyogenes as well as herpetic keratoconjunctivitis and meningoencephalitis.

- Patients with mutations in the filaggrin gene and those who have both severe AD and asthma have an increased risk for eczema herpeticum, and decreased production of antimicrobial peptides may have a pathogenic role.

- Patients with AD are also predisposed to the development of widespread molluscum contagiosum







- Ocular complications
- In addition to allergic rhinoconjunctivitis, the spectrum of atopic eye disease includes chronic manifestations such as atopic keratoconjunctivitis, which typically affects adults, and vernal keratoconjunctivitis that favors children living in warm climates.
- Symptoms include ocular itching, burning, tearing, and mucus discharge, often in association with conjunctival injection and blepharitis manifesting as swelling and scaling of the eyelids.
- Vernal keratoconjunctivitis features large, cobblestone-like papillae on the upper palpebral conjunctiva, and atopic keratoconjunctivitis is more prone to scarring.
- Additional infrequent ocular complications of AD include keratoconus and subcapsular cataracts, with anterior cataracts more specifically related to AD and posterior cataracts occurring more commonly; rarely there is retinal detachment.

- DIAGNOSTIC CRITERIA
- Several authors and groups have suggested guidelines to assist in establishing the clinical diagnosis of AD.
- Major features in these sets of criteria include **pruritus, eczematous skin lesions in typical age-specific distribution patterns, a chronic or chronically relapsing course, early age at onset, and a personal and/or family history of atopy.**
- Atopic stigmata, especially xerosis, are also recognized as supporting features.
- The Diepgen score represents another validated set of diagnostic criteria that are separated into objective, subjective, and laboratory features.
- Validated scores to assess the severity of AD include
- the EASI (Eczema Area Scoring Index),
- SCORAD (SCORing Atopic Dermatitis),and
- POEM (Patient-Oriented Eczema Measure)

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