ATOPIC DERMATITIS PHOTO REPOSITORY

This photo repository serves as an educational resource complementing the ACE Clinical Guideline (ACG) 'Mild and moderate atopic dermatitis (eczema) – a journey from flare to care', to enhance recognition and understanding of the varied manifestations of AD. The photos may not represent the full spectrum of disease presentations, and clinical correlation is essential for accurate diagnosis and management. Healthcare professionals should always conduct thorough clinical assessments and consider individual patient circumstances when making diagnostic and treatment decisions.

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Acute morphology

Erythema or pigmentary change

PRACTICE POINTS How might AD lesions appear differently on darker versus lighter skin tones?

- Lesions may present as violaceous, grey or brown on darker skin tones, instead of presenting as redness on lighter skin tones
- In darker skin tones, look for warmth and loss of normal skin sheen and consider using patient's self-reported itch severity as a surrogate marker for disease severity.[1] If scoring tools like EASI or SCORAD are being used, clinicians may consider increasing the erythema score when determining disease severity to avoid underestimating the severity.[2]

Lighter skin tones

Fig A1. Erythematous lesion at the popliteal fossa

Fig A2. Erythematous lesions along the ulnar aspects of forearm and wrist

Darker skin tones

Fig B1. Hyperpigmentated patches and plaques on the popliteal fossae

Fig B2. Hypopigmented and hyperpigmented patches and plaques with excoriations along the upper chest area

Excoriations

Loss of epidermis and a portion of dermis due to scratching or an exogenous injury, typically presenting as linear superficial breaks

Lighter skin tones

Fig C1. Excoriations on a background of pink erythema with some hypopigmentation

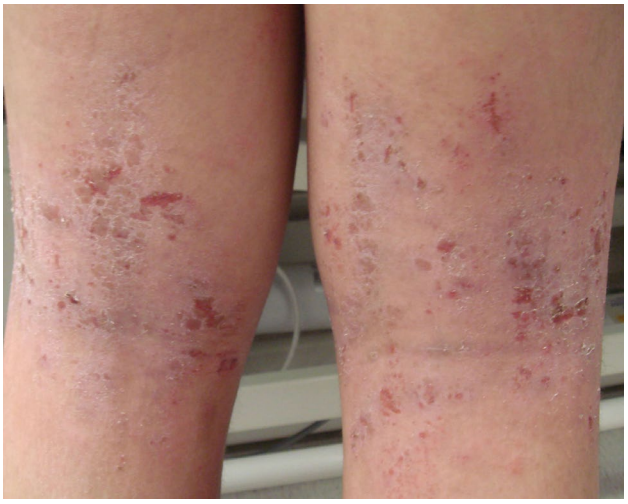

Fig C2. Excoriations at the popliteal fossa

Darker skin tones

Fig D1. Excoriations of the lower leg

Fig D2. Excoriations and erythema on the neck and upper back

Oozing or crusting

Secretion of serous exudate which may dry up and form thin crusts

PRACTICE POINTS | How to differentiate between non-infected and infected AD flares?

- Non-infected AD flares may produce serous, thin exudates
- Infected AD may produce thicker, purulent discharge, or thicker crusting, with more local pain and possible systemic signs like fever and malaise. (Images can also be found in the later section of secondary complications)

Lighter skin tones

Fig E1. Infected AD showing extensive excoriations with oozing and crusting of pus

Darker skin tones

Fig F1. Oozing and crusting over an erythematous, inflammed lesion

Oedema / papulation

Small, raised papules and swelling due to accumulation of fluid

Lighter skin tones

Fig G1. Erythematous papules on the suprapatellar area

Fig G2. Papules and plaques with excoriations on the back

Darker skin tones

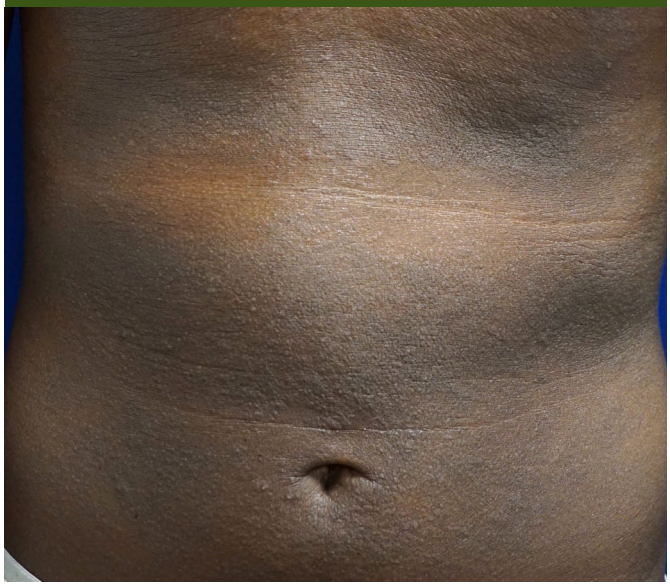

Fig H1. Extensive tiny, hyperpigmented papules on the trunk

Fig H2. Extensive papulation and plaque formation affecting the trunk of an infant

Chronic morphology

Lichenification

Thickened skin with accentuated lines from chronic scratching. Early lichenification presents as subtle skin coarsening on usually dry skin, progressing to marked thickening and hyperkeratosis.

Lighter skin tones

Fig I1. Lichenification on the elbow

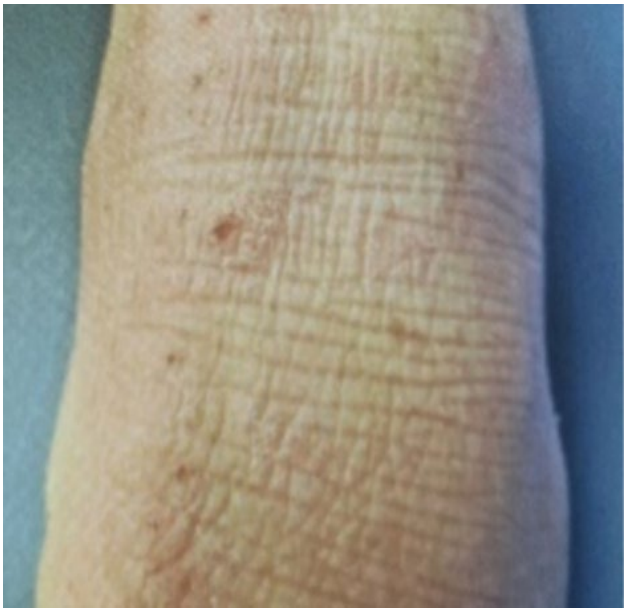

Fig I2. Lichenification on the ankle

Darker skin tones

Fig J1. Severe lichenification on ankles (or “Lichen Simplex Chronicus”)

Fig J2. Lichenification on the anterior ankle

Prurigo nodularis

Asians have a higher prevalence of prurigo nodularis which present as excoriated, scaly, hyperkeratotic dome-shaped papulonodules that may be skin-coloured, erythematous, hypopigmented or hyperpigmented. They are formed from repeated scratching or picking of AD lesions.

Lighter skin tones

Fig K1. Excoriated, thickened prurigo nodules on the arm

Fig K2. Close up of prurigo nodularis

Darker skin tones

Fig L1. Prurigo nodularis on the back

Fig L2. Close up of prurigo nodularis with follicular involvement

Fig L3. Denuded prurigo nodularis

Post-inflammatory hyperpigmentation or hypopigmentation

In Asian and darker skin types, post-inflammatory pigmentary changes are often more pronounced and persistent

- Hyperpigmentation occurs when inflammation stimulates melanocytes to produce excess melanin (more obvious in lighter skin tones)
- Hypopigmentation occurs when inflammation disrupts melanocyte function, leading to reduced melanin production (more obvious in darker skin tones)

PRACTICE POINTS | Do topical corticosteroids cause skin discolouration or bleaching?

A common misconception is that topical corticosteroids (TCS) discolour or bleach the skin. Although rare cases of hypopigmentation secondary to intralesional corticosteroid use have been reported, typical use of TCS does not alter skin pigmentation. Hypopigmentation is a secondary feature of the inflammation and/or tanning of the skin around the actively inflamed patch, rather than an adverse effect of the topical medications.[3]

Lighter skin tones

Fig M1. Post-inflammatory hypopigmentation along the back of an infant

Fig M2. Post-inflammatory hyperpigmentation on the arms

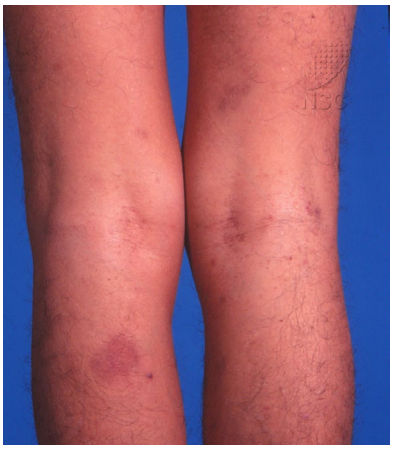

Fig M3. Post-inflammatory hyperpigmentation on the posterior surfaces of the legs

Darker skin tones

Fig N1. Post-inflammatory hypopigmentation on the forehead of a darker-skinned infant

Fig N2. Post-inflammatory hyperpigmentation on the back and arms

Fig N3. Post-inflammatory hypopigmentation with follicular involvement on the arm

Psoriasiform AD lesion

Asians have a higher prevalence of psoriasiform AD lesions which have both features of both AD and psoriasis. Psoriasiform AD lesions present with clearer demarcation and more prominent scales and lichenification than usual AD lesions.

PRACTICE POINTS | How to differentiate between psoriasis and AD?

- AD typically has more prominent itch than psoriasis
- Classically, AD favours flexural distribution while psoriasis involves more extensor distribution and nails
- Psoriasiform AD lesions tend to be less well-defined with more irregular, yellow, crusted scaling than psoriasis
- Psoriasis plaques are more sharply demarcated with thicker silvery-white scales
- Psoriasis is more commonly associated with obesity and metabolic syndrome

However, some patients may have both AD and psoriasis concurrently. A skin biopsy may help establish the diagnosis when clinical differentiation is difficult.

Lighter skin tones

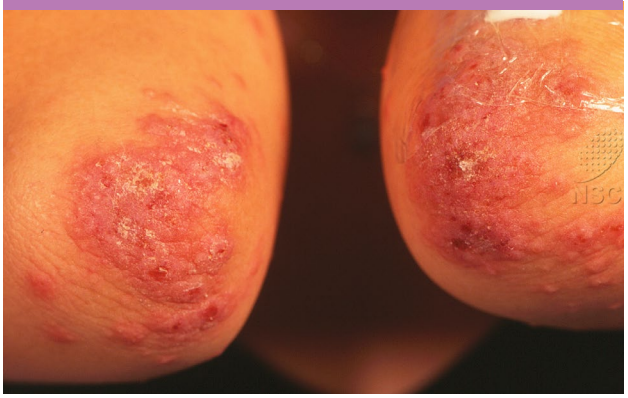

Fig O1. Scaly plaques and papules of psoriasiform AD on the elbows

Darker skin tones

Fig P1. Extensive erythematous psoriasiform plaques on the thigh of patient with severe AD

Distribution of AD lesions

Asians may have greater AD involvement of truncal, extensor, scalp and auricular areas than Western populations.[4] See Figure 2 in the main ACG for the typical age-related distribution of AD lesions.

PRACTICE POINTS | How to tell if it is AD when lesions are at non-flexural areas?

- Focus on the morphology, chronicity, symptoms and overall pattern of all the AD lesions
- Do not exclude possible AD diagnosis just because lesions are not found in flexural areas
- Personal or family history of atopy, and response to moisturisers or topical anti-inflammatory treatment might also increase the likelihood of the diagnosis being AD

Ears

Fig Q1. Erythema and fissuring around earlobe

Scalp

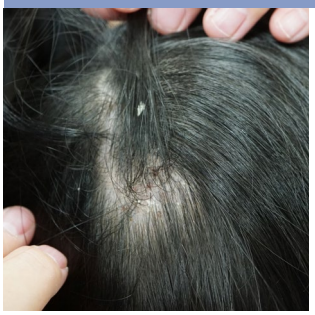

Fig R1. Scalp dermatitis with excoriations. Note scalp dermatitis is usually harder to see as it is under the hair

Fig R2. Scalp dermatitis with papulation along the hairline

Extensors

Fig S1. Mild eczema on the extensor surface of the elbow

Fig S2. Lichenified and excoriated AD on the extensor surface of the knees

Truncal

Fig T1. AD on the back

Fig T2. AD on the upper chest and trunk region

Periorbital

Fig T3. Eyelid eczema

Perioral

Fig T4. Perioral dermatitis due to frequent lip licking and lip smacking

Neck

Fig T5. Hyperpigmentation of the neck (“dirty neck”)

Hands / Feet

Fig T6. Chronic hand eczema with lichenification and erythematous plaques, with areas of hypopigmentation

Fig T7. Dyshidrotic eczema (pompholyx) differs from typical AD presentation, presenting with very itchy vesicles on palms, soles or lateral aspects of the digits. It can be associated with AD or other causes like contact dermatitis or fungal infection.

Secondary complications

Secondary bacterial infection of AD

AD flares may be challenging to distinguish from impetiginised AD with oozing or crusting, making clinical differentiation challenging.

Fig U1. Well demarcated, discoid eczema with overall yellow scaling and crusts

Fig U2. Impetiginised AD lesions with minimal crusting but mild oozing

Fig U3. Erythematous plaques with formation of pustules

Fig U4. Excoriated, honey-coloured crusting on the face and ears regions

Secondary viral infection of AD

Eczema herpeticum (as an example) presents as punched-out, circular, depressed ulcerated lesions (usually 1 mm to 3 mm) that may cluster to form larger areas of erosions with crusting.

! Eczema herpeticum is potentially life-threatening and can deteriorate rapidly to systemic infection with fever, malaise and even septic shock, requiring immediate medical attention. Clinicians should refer immediately to emergency departments when encountered.



Figs W1–3. Eczema herpeticum

Skin complications from inappropriate TCS use

Inappropriate TCS use typically refers to excessive potency, over-application or prolonged use.

PRACTICE POINTS | Do TCS-related skin complications present differently between lighter and darker skin tones?

In individuals with darker skin tones, detecting signs of atrophy, striae, or telangiectasia can be more challenging, as these changes are more visible in lighter skin. Clinicians should be vigilant for subtle signs of early complications, especially when there is concern or suspicion of inappropriate TCS use, such as changes in skin colour (e.g. more translucent appearance or hypo-/hyperpigmentation) or texture, or reduced elasticity. Additionally, it is crucial to educate all patients on the fingertip unit (FTU) method to help prevent the overuse of TCS.

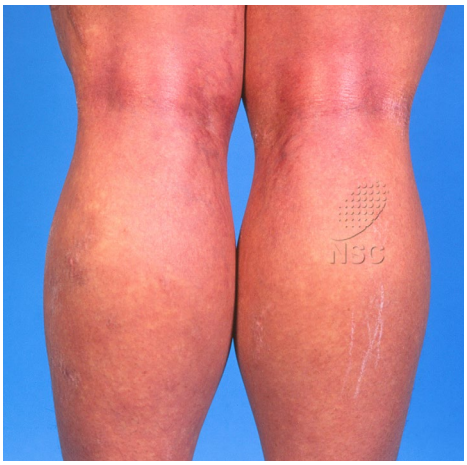

Fig X1: Skin atrophy on the popliteal fossae


Figs X2-3: Skin striae

Other differentials

Contact dermatitis

PRACTICE POINTS How can clinicians differentiate between contact dermatitis and AD?

Unlike AD, contact dermatitis is confined to exposure sites, with a clear temporal relationship to irritant or allergen contact. Allergic contact dermatitis (ACD) may spread beyond contact sites (autosensitisation), whilst irritant contact dermatitis (ICD) remains localised (not immunologically mediated). AD typically shows widespread distribution, chronically relapsing course, and personal or family history of atopy.

Fig Y1. Contact dermatitis due to plasters presenting as well-demarcated, erythematous plaques

Fig Y2. Contact dermatitis due to application of topical traditional Chinese medications (TCM) on the arm, presenting as well-demarcated, erythematous plaques with some small blisters

Acknowledgements

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