Dermatitis

'Just scratching the surface'

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Classifications

- Atopic
- Contact
  - Irritant
  - Allergic
- Seborrheic

Atopic Dermatitis

- Atopic eczema is common, prevalence is increasing. Eczema affects 15-20% of school children and 2-10% of adults.
- Generally presents before 5 years. (80%)
- Increased incidence if parents are affected, commonly co-morbid with atopic rhinitis and asthma.
- Higher prevalence in urban/ developed countries

Pathophysiology

- Historically split; extrinsic (IgE mediated, 80%) and intrinsic (non-IgE, the rest).
- New theory that they are the same in different phases of the disorder
- Many patients have mutations in genes coding for filaggrin protein.
- Barrier function decreases IgE mediated sensitization to antigens.
- Autosensitization- IgE autoantibodies against autoantigens from damaged cells.

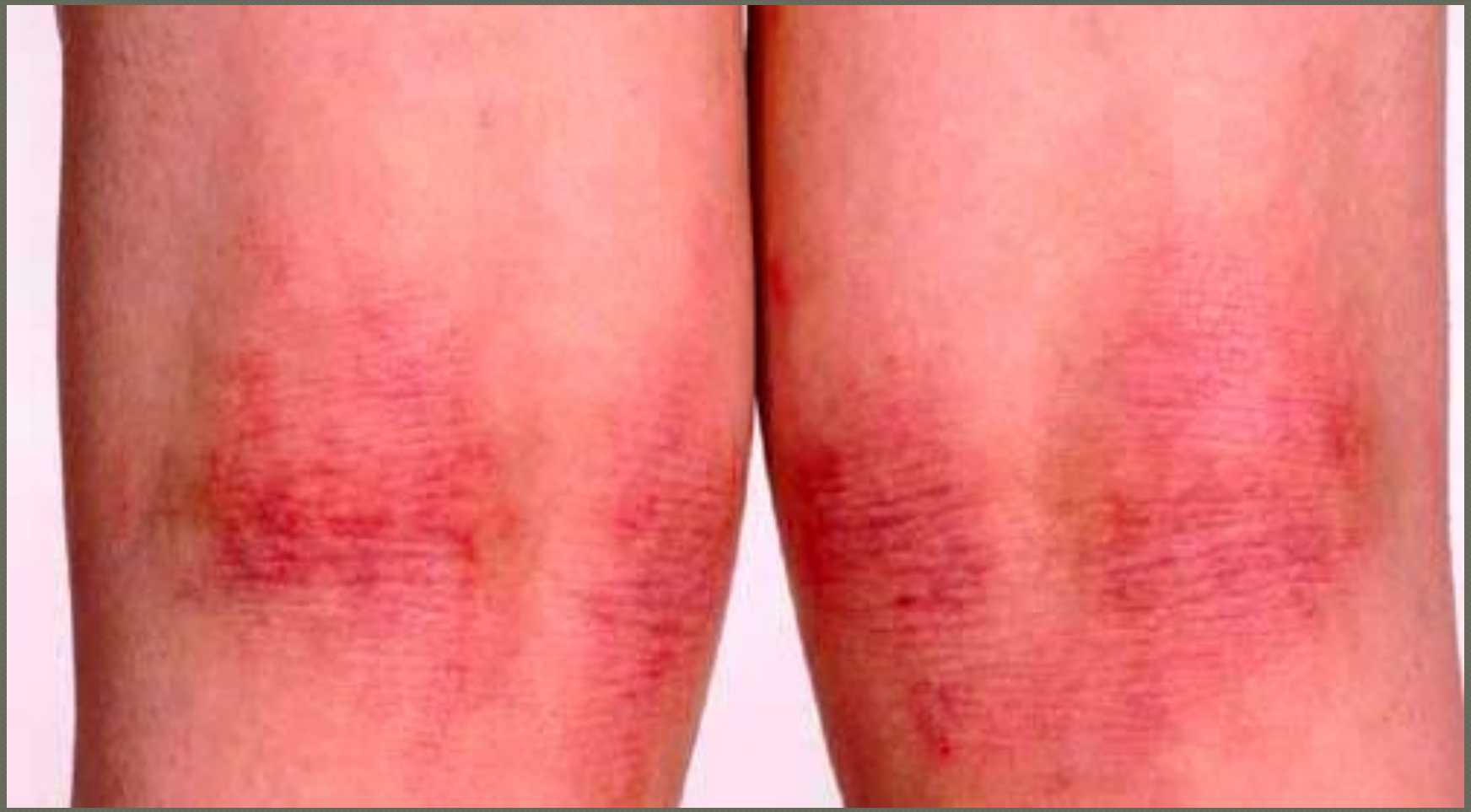
Presentation

- Acute Phase-
- Usually presents in infancy typically before 3 months of age
- 1-2 months duration
  - Red
  - weeping
  - crusted lesions
- Present on the face and then spread to
  - Neck
  - Scalp
  - Extremities
  - Abdomen

Presentation

- Chronic Phase-
- Scratching and rubbing creates lesions.
- Erythematous macules and papules that thicken with continued scratching:
  - Anticubital fossa
  - Popliteal fossa
  - Eyelids
  - Neck
  - Wrists
- Become scaley macules
- The older the presentation typically intense itching is the key feature.

Presentation



Diagnosis (NICE)

- Itchy skin condition plus 3 or more of:
  - Visible flexural dermatitis involving the skin creases, such as the bends of the elbows or behind the knees (or visible dermatitis on the cheeks and/or extensor areas in children aged 18 months or under)
  - personal history of flexural dermatitis (or dermatitis on the cheeks and/or extensor areas in children aged 18 months or under)
  - personal history of dry skin in the last 12 months
  - personal history of asthma or allergic rhinitis (or history of atopic disease in a first-degree relative of children aged under 4 years)
  - onset of signs and symptoms under the age of 2 years (do not use this criterion in children aged under 4 years).

Assesment

- Seek potential trigger; Irritant (soaps etc), skin infection, allergens, food allergens, inhalant allergens.
- Avoidance of precipitating factors:
  - Using synthetic fiber pillows and impermeable mattress covers
  - Washing bedding in hot water
  - Removing upholstered furniture, soft toys, carpets, and pets (to reduce dust mites and animal dander)
  - Using air circulators equipped with high-efficiency particulate air (HEPA) filters in bedrooms and other frequently occupied living areas
  - Using dehumidifiers in basements and other poorly aerated, damp rooms (to reduce molds)

Treatment

- Emollients should form the basis of atopic eczema management and should always be used, even when the atopic eczema is clear.
- Applied liberally to moist skin ideally every 4 hours, in generalized eczema 500g/week should be used. Still be used when other treatments are being undertaken.

Steroids

- Mild corticosteroids - face and on flexures
- Potent corticosteroids - for use on adults with eczema on the scalp, limbs, and trunk.
- Topical corticosteroids for atopic eczema, for application only once or twice daily.
- Emollients are applied between corticosteroid applications and can be mixed with them to decrease the corticosteroid amount required to cover an area.
- Use mild potency for the face and neck, except for short-term (3-5 days) use of moderate potency for severe flares.
- Use moderate or potent preparations for short periods only (7-14 days) for flares in vulnerable sites such as the axillae and groin.
- Very potent preparations in children shouldn't't be used without specialist dermatological advice.
- Patients using moderate and potent steroids must be kept under review for both local and systemic side-effects.

Treatment cont.

- Phototherapy is helpful for extensive AD.
- Natural sun exposure ameliorates disease in many patients, including children.
- Ultraviolet A (UVA) or B (UVB) may be used.
- Narrowband UVB therapy more effective than traditional broadband UVB therapy and is also effective in children.
- Topical calcineurin inhibitors (tacrolimus) are not recommended for first-line treatments for atopic eczema of any severity.
- second-line treatment of moderate to severe atopic eczema in adults and children aged 2 years and older that has not been controlled by topical corticosteroids,

Treatment cont.

- Systemic immune modulators effective in at least some patients include cyclosporine, interferon gamma, mycophenolate, methotrexate, and azathioprine.
- Eczema herpeticum is treated with acyclovir.
- Involvement of the eye is considered an ophthalmic emergency, and if eye involvement is suspected, an ophthalmology consult should be obtained.
- Antihistamines can help relieve pruritus.

Treatment

Stepped care: treatment options

Mild	Moderate	Severe
Emollients	Emollients	Emollients
Mild potency topical corticosteroids	Moderate potency topical corticosteroids	Potent topical corticosteroids
	Topical calcineurin inhibitors	Topical calcineurin inhibitors
	Bandages and dressings	Bandages and dressings
		Phototherapy
		Systemic therapy

Contact Dermatitis

- Irritant contact dermatitis (ICD): ICD accounts for 80% of all cases of CD. It is a nonspecific inflammatory reaction to substances contacting the skin; the immune system is not activated.
- Allergic contact dermatitis (ACD): ACD is a type IV cell-mediated hypersensitivity reaction that has 2 phases:
  - Sensitization to an antigen
  - Allergic response after re-exposure

Irritant Contact Dermatitis

- Latex
- Chemicals
  - Acids
  - Alkalis
  - Solvents
  - Metal salts
- Soaps
  - Abrasives
  - Detergents
- Plants
  - Poison Ivy
  - Nuts
  - Peppers
- Body fluids
  - Urine
  - Saliva

Allergic Contact Dermatitis

- In the sensitization phase, allergens are captured by Langerhans cells (dendritic epidermal cells), migrate to regional lymph nodes where presented the antigen to T cells.
- The process may be brief (6 to 10 days for strong sensitizers such as poison ivy) or prolonged (years for weak sensitizers such as sunscreens, fragrances, and glucocorticoids). Sensitized T cells then migrate back to the epidermis and activate on any reexposure to the allergen, releasing cytokines, recruiting inflammatory cells, and leading to the characteristic symptoms and signs of ACD.
- In autoeczematization, epidermal T cells activated by an allergen migrate locally or through the circulation to cause dermatitis at sites remote from the initial trigger. However, contact with fluid from vesicles or blisters cannot trigger a reaction elsewhere on the patient or on another person.
- Multiple allergens cause ACD, and cross-sensitization among agents is. Toxicodendron sp plants (eg, poison ivy, poison oak, poison sumac) account for a large percentage of ACD, including moderate and severe cases.

Presentation

- ICD is more painful than pruritic. Signs range from mild erythema to hemorrhage, crusting, erosion, pustules, bullae, and edema.
- In ACD, the primary symptom is intense pruritus; pain is usually the result of excoriation or infection.
- Changes often occur in a pattern, distribution, or combination that suggests a specific exposure.
- Any surface may be involved, but hands are the most common surface due to handling and touching potential allergens.
- With airborne exposure (eg, perfume aerosols), areas not covered by clothing are predominantly affected.
- The dermatitis is typically limited to the site of contact but may later spread due to scratching and autoeczematization.
- The eruption usually begins within 24 to 48 h after exposure to the allergen.

Presentation

- Common Features
  - Redness of skin.
  - Vesicles or papules on an affected area.
  - Crusting and scaling of skin.
  - Itching of an affected area.
  - Fissures (chronic exposure).
  - Hyperpigmentation (chronic exposure).
  - Pain or burning sensation from an affected area.

Contact Dermatitis

Investigations

- In most cases, no investigations will be required and the diagnosis is made on the clinical findings and history.
- Skin patch testing is occasionally performed using standardised allergens. It must be carried out meticulously. Excessive concentration or dilution of a test patch may cause false positives or false negatives. It can help to distinguish between allergy, irritation and endogenous eczema.

Management

- Avoid the irritant producing the dermatitis, when this has been identified.
  - The use of protective gloves or clothing may be helpful depending on the irritant and the environment
  - Wash their hands using products without perfume, and dry thoroughly afterwards.
  - Rings should be removed, thoroughly cleaned and not worn again until the condition has resolved.
  - Avoidance of the irritant may be the only treatment required in milder cases of recent origin; the dermatitis will then resolve in a period of approximately three weeks.
- Simple emollients may be used if the skin barrier has not been breached. The usefulness of barrier creams remains controversial.

Drug Management

- More severe or chronic forms of dermatitis will benefit from the use of topical corticosteroid cream.
- The use of antihistamine,may be helpful if itching of the affected area is a problem.
- Second-line agents, eg psoralen combined with ultraviolet A (PUVA) treatment, ciclosporin and azathioprine may be initiated in a specialist setting for the treatment of chronic, steroid-resistant dermatitis.

Seborrheic Dermatitis

- Seborrheic dermatitis is inflammation of skin regions with a high density of sebaceous glands (eg, face, scalp, upper trunk)
- Pathogenesis of SD is unclear, activity has been linked to *Malassezia* yeasts present on the skin.
- More common, more severe among patients with neurologic disorders (Parkinsons) or HIV/AIDS
- Incidence and severity of disease seem to be affected by:
  - Genetic factors
  - Emotional or physical stress
  - Climate (usually worse in cold weather)

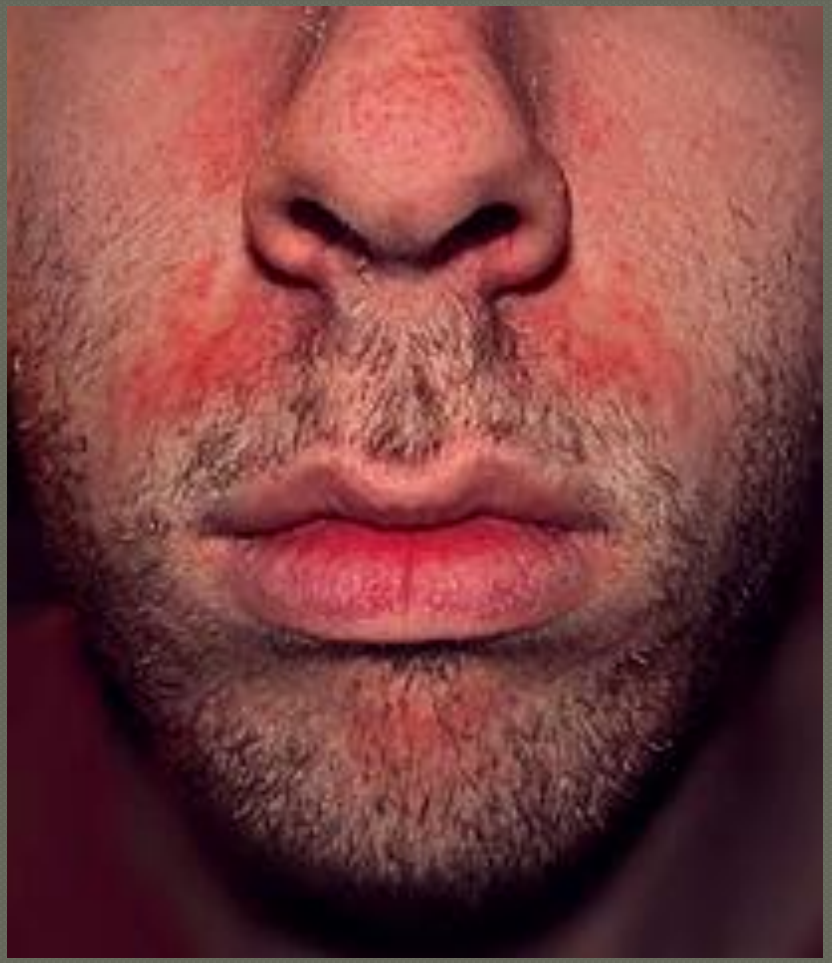
Epidemiology

- Seborrhoeic dermatitis occurs in 1-5% of the population.
- This increases in the immunocompromised.
- More common in males than in females, which is thought to be due to the effect of androgen on production of sebum.
- Peak incidence is in adolescents and young adults, and in adults over the age of 50.

Presentation

- Face- Inflamed areas, greasy and fine scaling of the skin, occurring:
  - The nasolabial folds.
  - Over the bridge of the nose.
  - The eyelashes/eyebrows. This may present as blepharitis.
  - The ear (particularly behind the ear in the skin folds. It may also cause itching of the ear canal).

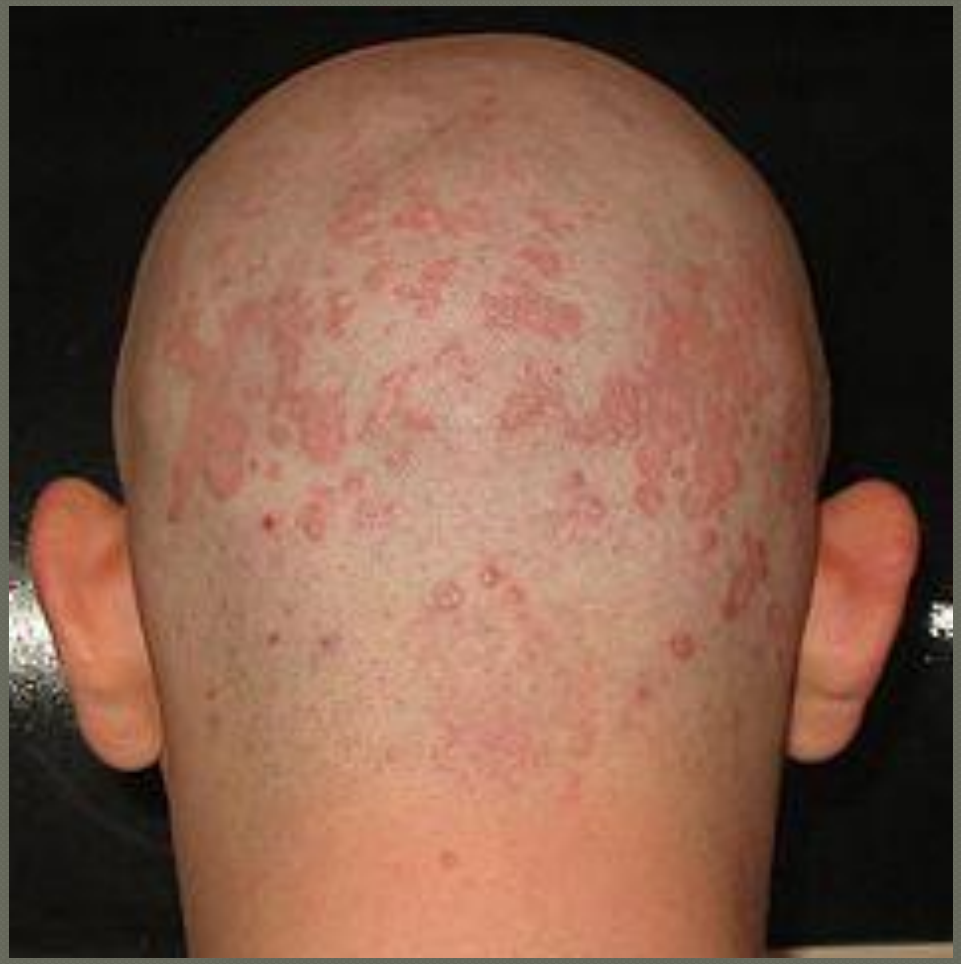
Presentation- Face



Presentation

- Scalp- Usually there is an associated fine scaling in the scalp to produce the 'dandruff'.
- Ill-defined dry pink patches with yellowish or white bran-like scale. It may affect the entire scalp. This may cause pruritus.

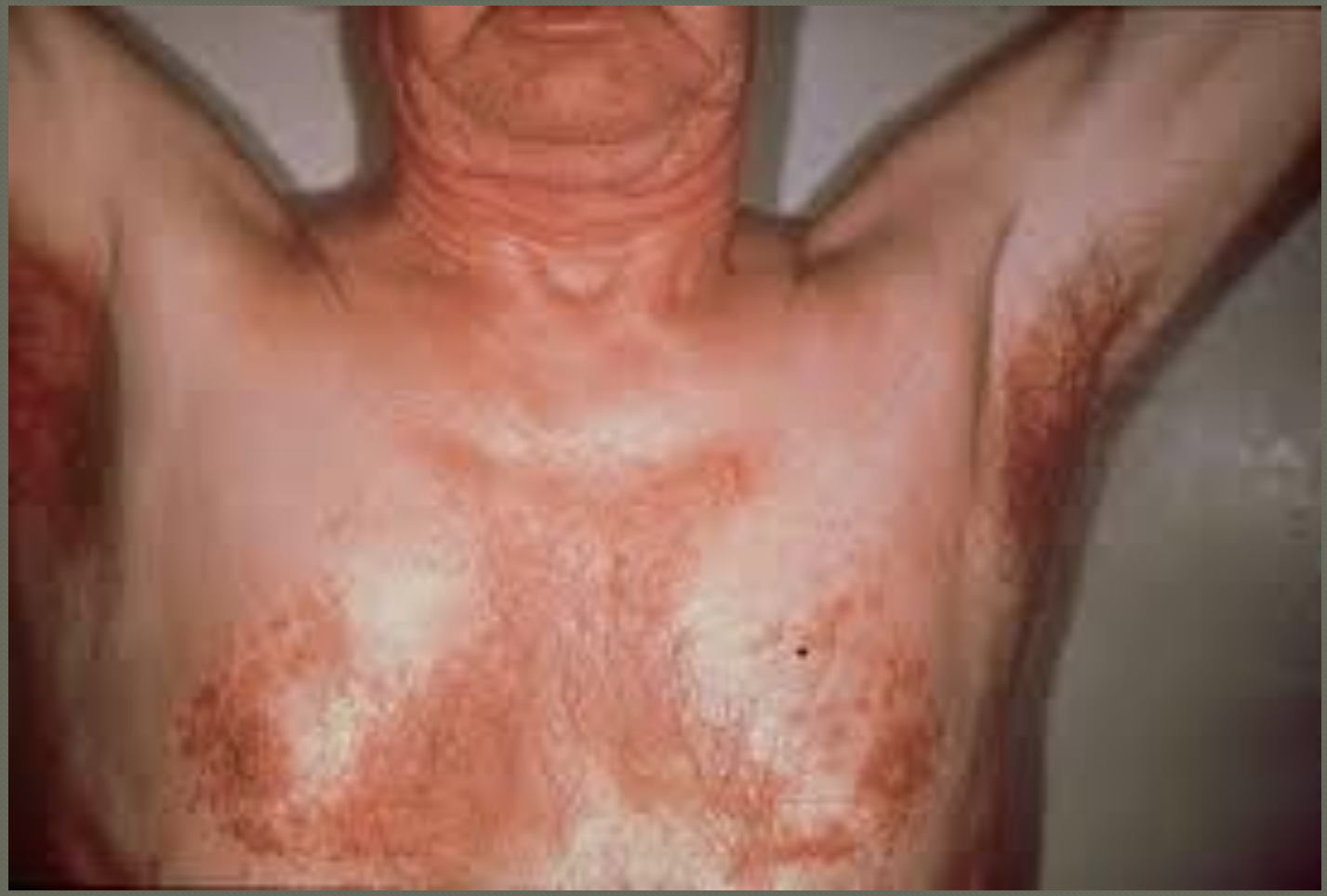
Presentation- Scalp



Presentation

- Upper Trunk:
- The chest - there are usually papules with greasy scales; however, less commonly there are macules and papules similar to extensive pityriasis rosea.
- The sternum and upper back (between the scapulae) - may have fine scaling plaques.
- Flexures (axillae, groins and under breasts) - may have erythematous patches, papules or plaques presenting as intertrigo.

Presentation- Upper Thorax



Differential Diagnosis

- On the face
  - Rosacea: this is not scaly, spares the nasolabial fold, and consists of papules and pustules on an erythematous base situated on the cheeks, chin, tip of the nose and forehead.
  - SLE: this has a butterfly distribution of typical rash on the cheeks.
- On the scalp
  - Psoriasis (of the scalp, face or chest): this may look similar to or may overlap with SD. This overlap condition is called sebopsoriasis.
  - Infected eczema.
  - Tinea capitis.
- On the torso
  - Atopic eczema: this typically affects the antecubital and popliteal fossae.
  - Pityriasis rosea: there is presence of a herald patch; it is more widely distributed usually.
  - Pityriasis versicolor.
  - Lichen simplex.
  - Candidiasis.

Treatment

- Regular antifungal medication with topical steroids as necessary

- SCALP-
- First remove thick crusts or scales with olive oil or a keratolytic preparation such as salicylic acid or coal tar
- Medicated shampoos
- Shampoos are used twice a week for at least a month, after which the frequency may be reduced.
- They may also be used in the beard area.
- Steroid scalp applications reduce itching. Intermittent use for a few consecutive days may be helpful. Avoid continuous use.

Treatment Cont.

- Keep the skin clean but avoid soap.
- Ketoconazole or another antifungal cream may be used once daily for 2-4 weeks. Reduce frequency once symptoms are controlled. Antifungal shampoos may be used as a body wash.
- 1% hydrocortisone cream can be applied once or twice daily for a week or two.
- Intermittent courses may be required for this chronic condition (and continuous use or high doses should be avoided).
- Topical calcineurin inhibitors such as pimecrolimus cream or tacrolimus ointment may be helpful.
- For eyelids, consider hygiene methods such as diluted baby shampoo applied with cotton buds.