DISEASE REVIEW

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PSORIASIS

Psoriasis is a chronic inflammatory and proliferative disorder of the skin clinically manifested as well-circumscribed, erythematous papules and plaques covered with silvery scales typically located over the extensor surfaces and scalp. While specific systemic and environmental factors are known to influence the disease, it is unpredictable in its course, and usually pursue spontaneously with improvement and exacerbations of lesions without discernable cause. Immune system dysfunction in the background of a genetic predisposition is believed to be at the core of the disease process. Psoriasis is a very common disease and affects one to two per cent of the population in all geographic regions

Aetiology and Pathogenesis

Despite being the subject of intensive research over the years, the precise aetiology of psoriasis still remains unknown.

Genetic factors can be implicated on the basis of population surveys, twin studies and analysis of pedigrees. But the precise mode of inheritance is uncertain, thought to be polygenic. The HLA system provides a potential genetic marker. Different groups of psoriatic population showed the following to be significantly associated with psoriasis: HLA Cw6, B13, B16, and B27.

Provocating factors: A number of factors may provoke onset or aggravation of psoriasis. **:**.

Trauma - All types of trauma can lead to the development of plaque psoriasis (eg, physical, chemical, surgical, infective, and inflammatory). The development of psoriatic lesions at a site of injury is known as the ***Koebner phenomenon.***

Infection – An acute eruption of guttate psoriasis may be provoked by streptococcal pharyngitis. ***HIV infection*** may be associated with increase in disease severity.

Drugs. Lithium ,withdrawal of systemic corticosteroids, beta-blockers, antimalarials, and NSAIDs may cause flare of the disease

Sunlight – although sunlight is generally considered to be beneficial for most of the patients, strong sunlight may worsen the disease in a small minority.

Stress - Many patients report an increase in the psoriasis severity with psychological stress.

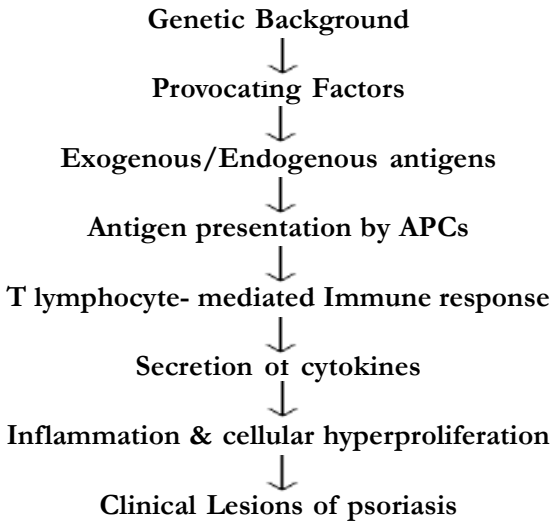
Smoking - Cigarette smoking is associated with an increased risk of chronic plaque psoriasis

Alcohol - Alcohol is considered a risk factor for psoriasis, particularly in young to middle-aged males.

Endocrine – the disease state may fluctuate with hormonal changes. Psoriasis may begin during puberty. Pregnancy may improve the disease. While a flare may occur during the post-partum period.

Role of immune response

Although the exact immunopathogenesis of psoriasis is unknown, immunologic factors have been implicated in its etiology. Psoriatic plaques are characterized by epidermal hyperplasia, presence of acute and chronic inflammatory cells vascular changes of inflammation. The epidermis and dermis of an active psoriatic plaque contain increased numbers of several different cells of the immune system, including activated T cells, activated antigen-presenting cells (APCs) (Langerhans cells, other dendritic cells and macrophages), neutrophils, and hyperproliferating keratinocytes. The activation of APCs, keratinocytes or dermal cells may result in induction of antigen presentation, cytokine release, and enhanced T-cell activation and lymphokine release. Lymphokines, in turn, produce inflammation and hyperproliferation of epidermal cells. Accelerated epidermal cell proliferation results from recruitment of a large proportion of resting cells into the proliferative cycle.



Pathology

The pathology of psoriasis reflects the underlying immune-mediated inflammation and cellular hyperproliferation.

- Hyperkeratosis with parakeratosis (presence of nucleated keratinocytes in the stratum corneum due

lack of maturation of cells since rapid transit time do not permit normal maturation of cells).

- Reduced or absent granular layer.
- Acanthosis with elongation of rete ridges and a corresponding upward elongation of dermal papillae.
- Infiltrate: Mononuclear in dermis and polymorphs in the upper epidermis forming collections called 'microabscesses of Munro'.
- Upper dermal vasculature shows dilatation and tortuosity.

Clinical Features

History:

- Family history is frequently elicited.
- First manifestation at any age but two peaks are observed: the first peak in the second decade, the second in the sixth decade.
- Onset may follow trauma, infection, sunburn or psychological stress.
- Patients complain of prominent itchy, elevated red areas with increased scaling.
- Patients may recognize that new lesions appear at sites of injury to the skin

*(This isomorphic phenomenon (**Koebner reaction**) typically occurs 7-14 days after the skin has been injured and has been found in 40-80% of patients with psoriasis.*

In some patients, so-called reverse-Koebner reactions may be noted in which preexisting psoriatic plaques will clear after injury or trauma to the skin.
Koebner reaction may also be found in other dermatoses like, lichen planus, lichen nitidus, verruca plana and vitiligo)

- Joint pain, stiffness, and deformity are complaints in about10% of patients who have psoriatic arthritis.

Types of presentations: The patients may present in a variety of ways with overlapping features being not uncommon.

Chronic plaque psoriasis. The commonest type, presenting with typical plaques of psoriasis of the extensors and scalp.

Guttate psoriasis. Is commoner in childhood. Acute eruption of drop-shaped lesions distributed widely over the body. Usually follows an upper respiratory infection.

Flexural psoriasis. The lesions are present over the flexors and intertriginous areas (axilla, groin, umbilical region, inframammary folds) there may be moist and lack the typical scaling.

Pustular psoriasis. May be localized or generalized. Localized pustular psoriasis usually presents with persistent pustular eruptions of the hands and feet. Generalized pustular psoriasis may occur as an explosive eruption of generalized pustules with systemic disturbances. This may follow withdrawal of systemic steroid therapy or application of irritants.

Arthropathic psoriasis. Arthritis may accompany any variety of psoriasis in about ten per cent of patients. Psoriatic arthritis may take several forms. The commonest type is *asymmetrical oligoarthritis*, other types are: *symmetrical seronegative rheumatoid-like disease , distal interphalangeal* involvement(most characteristic, but relatively rare*), axial skeletal involvement*, and a destructive mutilating form *(arthritis mutilans*)

Erythrodermic psoriasis. Psoriasis may present with erythroderma (exfoliative dermatitis). There is generalized inflammatory erythema with profuse scaling.

Physical Exam:

The typical lesions of psoriasis have the following features;

- The lesions are very well marginated with distinct border.
- The lesions are raised above the surface.
- The plaques usually have a diameter of one to several centimeters and have a round or oval shape. The lesions may merge together to give rise to geographic patterns.
- The plaques typically have a rich red color and may be surrounded by a pale halo (the *halo of Woronoff*).
- The lesions are covered with a silvery white, mica-like, loosely adherent scales which, on removal may reveal punctate bleeding points (*Auspitz sign*)
- Symmetry: the lesions are symmetrically disposed on extensor surfaces of the body. Typical sites of affection are the elbows, knees, shin, knuckles, sacral areas and scalp.
- Uniformity: the psoriatic plaques tend to have the same features irrespective of site except for certain locations like the palms and soles, and the flexors.

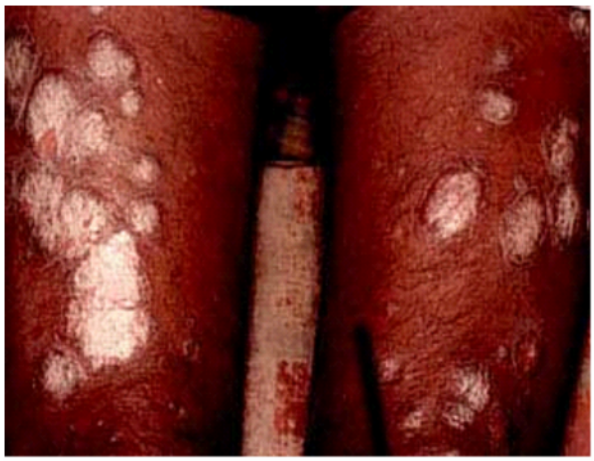


Fig. 1

Figs. 1 and 2: Showing typical plaques of psoriasis

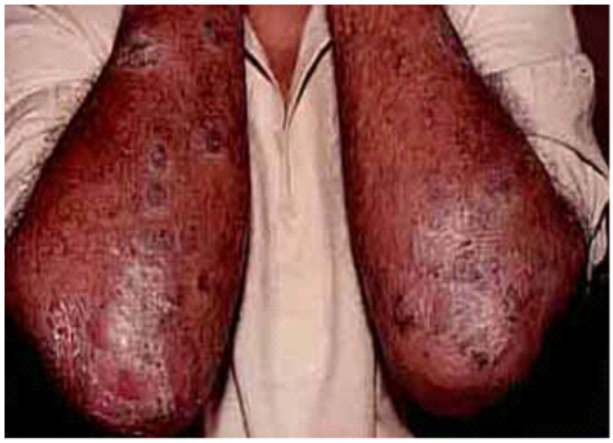


Fig. 2

Variations of lesions

Variations by morphology or shape:

Apart from the typical plaque lesions, guttate lesions and pustules, lesions may take on a variety of morphological forms and shapes. Verrucous, lichenoid, follicular, linear, annular, figurate, gyrate are some of the terms used to describe these variants.

Variations by site:

Scalp: Diffusely involved. Thick scaling, no hair loss.

Penis: Well-circumscribed reddish plaque without scales.

Hands and feet: Diffuse hyperkeratosis, Thick scales, fissures.

Sacral regions: thick fissures plaques, scaling may be absent.

Nails: involved in 25 to 50% of cases.

Nail pitting.

Discoloration.

Subungual hyperkeratosis.

Onycholysis (separation of nail-plate from the nail bed) giving rise to oil-drop sign.

Thickened friable nail plate.