Psoriasis

Psoriasis may be divided into psoriasis vulgaris, generalized pustular psoriasis, and localized pustular psoriasis.

Psoriasis Vulgaris       Clinical Features
Psoriasis vulgaris is a common chronic inflammatory skin disorder that affects approximately 1.5% to 2%
associated with acute group A ~-hemolytic streptococcal infections . Involvement of the nails is common
Psoriatic arthritis characteristically involves the terminal interphalangeal joints, but frequently the large joints are also involved, particularly the knees and ankles. Differentiation from rheumatoid arthritis is often difficult. However, the rheumatoid factor is generally absent.

**Generalized Pustular Psoriasis**

**Clinical Features**

Generalized pustular psoriasis includes (a) acute generalized pustular psoriasis (von Zumbusch type and erythrodermic type), (b) subacute annular or circinate pustular psoriasis.
This cutaneous eruption is characterized by the presence of variable numbers of sterile pustules appearing on the skin. Several exacerbations may occur, and lesions of ordinary psoriasis may be seen in the intervals between them.

The four variants of generalized pustular psoriasis show considerable resemblance and overlapping in their clinical picture and also have a similar histologic appearance. They differ mainly in the mode of onset and the distribution of the lesions. Frequently, all four diseases show oral pustules, particularly on the tongue.

Acute generalized pustular psoriasis of von Zumbusch is generally diagnosed when the pustular eruption occurs in patients with preexisting psoriasis, either of the plaque type or of the erythrodermic type. Frequently, the eruption occurs after systemic steroid therapy withdrawal. The exanthematous type of generalized pustular psoriasis refers to a group of patients with later onset of psoriasis, atypical distribution of the lesions, and a rapid and apparently spontaneous pustular eruption.
Generalized pustular psoriasis is a rare pustular eruption that appears during the last trimester of pregnancy. It starts with flexural lesions and may occur repeatedly during successive pregnancies. Some authors consider it to be the same disease as impetigo herpetiformis, but others view them as separate entities.

In some instances of subacute annular pustular psoriasis or gyrate lesions, there may be a clinical resemblance to subcorneal pustular dermatosis.
Very rarely, children develop generalized pustular psoriasis, also known as infantile and juvenile pustular psoriasis. The disease has a benign course with frequent spontaneous remissions.

**Localized Pustular Psoriasis**

**Clinical Features**
There are three types of localized pustular psoriasis: (a) "psoriasis with pustules", in which only one or a few areas...
Acrodermatitis continua of Hallopeau is the term used when the pustular eruption involves the distal portions of the hands and feet. In the localized type of the disease, only a few small pustules are seen on the fingers and toes. Atrophy of the skin and permanent nail loss may occur on the fingers and toes.

Pustulosis palmaris et plantaris is a chronic, relapsing disorder occurring on the palms, soles, or both. Crops of small, deep-seated pustules are seen within areas of erythema and scaling. In the earliest stage, the lesions are sometimes confused with tinea or mycotic infection. An acute variant called "pustular bacterid" describes a rare eruption of large and sterile pustules on hands and feet.
Psoriasis and Acquired Immunodeficiency Syndrome

Clinical Features
The association between psoriasis and human immunodeficiency virus (HIV) infection is commonly seen. The prevalence of...
Psoriasis Vulgaris

Histopathology
The histologic picture of psoriasis vulgaris varies considerably with the stage of the lesion and usually is diagnostic only in early, scaling papules and near the margin of advancing plaques. The earliest pinhead-sized macules or smooth-surfaced papules show subtle histologic changes with a preponderance of parakeratosis, hyperkeratosis, and a variable degree of epidermal thinning.
exocytosis of neutrophils, they may aggregate in the uppermost portion of the spinous layer to form small
In the fully developed lesions of psoriasis, as best seen at the margin of enlarging plaques, the histologic ...
Of the listed features, only the spongiform pustules of Kogoj and Munro microabscesses are truly diagnostic of psoriasis. The changes in active psoriasis are discussed in detail later.

The rete ridges show considerable elongation and extend downward to a uniform level, resulting in regular acanthosis.
show thickening ("clubbing") in their lower portion. Not infrequently, adjacent rete ridges seem to coalesce...
The suprapapillary epidermis appears relatively thin in comparison with the markedly elongated rete ridges.
In some instances the cornified layer consists entirely of confluent parakeratosis forming a platelike scale. However, occasional focal orthokeratosis with preservation of the underlying granular cells is present.

Munro microabscesses are located within the parakeratotic areas of the cornified layer. They consist of...
The dermal papillae, in accordance with the elongation and basal thickening of the rete ridges, are elongated and club shaped, forming small abscesses.
An entirely typical histologic picture as described earlier is not always found, even if the biopsy specimens indicate a fluctuation in the activity of the psoriasis.

The bleeding points that may be produced by gentle scraping of the skin (Au spitz sign) correspond to the...
Guttate or eruptive psoriasis shows the histologic features of an early or active lesion of psoriasis, where there is more pronounced inflammatory ... cornified layer overlying the mounds of parakeratosis with neutrophils, which, in turn, may appear loosely arranged.

The histologic picture of erythrodermic psoriasis in some instances shows enough of the characteristics of...
Histopathology
Whereas in ordinary psoriasis the spongiform pustule of Kogoj is a very small micropustule and is seen only in early, ... pustule move up into the cornified layer, they become pyknotic and assume the appearance of a large Munro abscess.
In addition to the large spongiform pustules, the epidermal changes in generalized pustular psoriasis are...
In the healing stage, the lesions of all types of generalized pustular psoriasis may present the same histologic appearance as ordinary psoriasis.

**Localized Pustular Psoriasis**
Histopathology

In the variants of localized pustular psoriasis "psoriasis with pustules" and localized annular pustular psoriasis, the histologic picture is the same as that described for generalized pustular psoriasis.

In localized acrodermatitis continua of Hallopeau, the nail bed is mainly affected, showing marked epithelial hyperplasia and hyperkeratosis with mounds of parakeratosis with neutrophils. The nail matrix is only occasionally involved.
In pustulosis palmaris et plantaris there is a fully developed large intraepidermal unilocular pustule. It is elevated above the epidermis. In many instances one can observe typical, although small, spongiform pustules in the epidermal wall of the pustule, most commonly at the junction of the lateral walls and the overlying epidermis. These spongiform pustules are identical to those seen in the walls of the pustules of generalized pustular psoriasis.
Very early lesions may show spongiosis and exocytosis of lymphocytes in the lower epidermis overlying...
Histopathology

The histologic picture in most cases is similar to that of psoriasis. In others, the histologic sections may show some plasma cells. As in other dermatitides related to AIDS, eosinophils may be present in the inflammatory infiltrate.
Pathogenesis of Psoriasis Vulgaris

Although the cause of psoriasis is unknown, there is increasing evidence of a complex interaction among...
Electron Microscopy
The earliest recognizable morphologic events in psoriasis have been investigated in lesions that cleared...
Ultrastructural studies of the spongiform pustule of Kogoj, one of the most characteristic histologic structures in a multilocular pustule in which the spongelike network is composed of degenerated and flattened keratinocytes.

The ultrastructure of the capillary loops in the dermal papillae shows them to be different from normal capillary loops as a result of the deposition of amorphous substances and accumulation of collagen fibrils in the basement membrane zone.
Epidermal Cell Cycle Kinetics
The rate of epidermal cell replication is markedly accelerated in active lesions of psoriasis, as shown by...
Early calculations made it appear likely that in psoriatic lesions there was a great acceleration of the transit time of ... cell layer, from approximately 53 days in normal epidermis to only 7 days in the epidermis of active psoriatic lesions.

Further investigations have found that (a) the germinal cell cycle is shortened from 311 to 36 hours, indica...
100% of the germinative cells of the epidermis enter the growth fraction instead of only 60% for normal subjects. This suggests a significant increase in the proliferation rate of the epidermis in psoriasis.

The source of the cycling cells in the suprabasal layers of the epidermis is not well defined. They could be an expanded population of cycling keratinocytes, but further research is needed to clarify their origin.
Recent studies suggested that psoriatic epidermis shows aberrant expression of apoptosis-related molecules.
Keratinocyte Differentiation
Keratinocytes undergo the process of differentiation as they migrate upward through the epidermis from
Immunopathology
Immunologic factors play a very important role in the pathogenesis of psoriasis. Psoriasis is now regarded
CD4+ T cells produce a variety of cytokines, including interleukin-2 (IL-2), tumor necrosis factor-a (TNFa), and interferon-y (IFN-y), which are also produced by CD8+ T lymphocytes.
Keratinocytes stimulated by TNFα may produce IL-B, which is a potent T-lymphocyte and neutrophil chemoattractant present in increased amounts in psoriatic epidermis. This cytokine may be involved in the formation of Munro microabscesses.
ylFN is believed to play an important role in the initiation of psoriatic lesions as demonstrated by the induction of pinpoint lesions of psoriasis at sites of ylFN injection in previously uninvolved skin (159).
yIFN induces the expression of the ICAM-1 in keratinocytes and endothelial cells. This molecule mediates...
not to be responsive to the growth inhibition effects of yIFN, leading to their hyperproliferative state in the disease.
Increased expression of p53 and downregulation of Bcl-2, consistent with the dynamics of psoriasis, have been shown.
Pathogenesis of Localized Pustular Psoriasis
A relationship of pustulosis palmaris et plantaris with psoriasis is not generally accepted, although two facts favor a relationship: addition, a leukotactic factor identical to that noted in psoriasis has been found in pustulosis palmaris et plantaris.
Pathogenesis of Psoriasis and AIDS
There is evidence of the role of both CD8+ and CD4+ T lymphocytes and yIFN in the pathogenesis of psoriasis.
Paradoxically, as T-helper cell counts decline, it appears that psoriatic lesions exacerbate until a preterminal stage, it was shown that ylFN serum levels were much higher in HIV-positive psoriatic patients than HIV-negative subjects.
The immunodysregulation resulting from HIV infection may trigger psoriasis in those genetically predisposed.
Differential Diagnosis
Two histologic features are of great value in the diagnosis of psoriasis vulgaris: (a) mounds of parakeratosis with elongation of the rete ridges and parakeratosis, can be found also in chronic eczematous dermatitis, such as atopic dermatitis, nummular dermatitis, or allergic contact dermatitis, which then may appear to be “psoriasiform.” However, the elongation of rete ridges is uneven. Although mild spongiosis may be seen in treated lesions of psoriasis and in those with superimposed allergic contact dermatitis secondary to topical treatments.

Lichen simplex chronicus is considered in the differential diagnosis of fully developed psoriatic plaques. In contrast to psoriasis, it shows a more uniform hyperplasia of the epidermis, with hyperkeratosis, acanthosis, and fibrosis of the papillary dermis with collagen bundles aligned perpendicular to the skin surface.

Seborrheic dermatitis may be very difficult to distinguish from psoriasis vulgaris, especially if overlap occurs. Accentuated spongiosis, accentuated parakeratosis at the follicular ostia, and more irregular acanthosis are histologic features suggestive of seborrheic dermatitis.

Pityriasis rubra pilaris shares some histologic features with psoriasis, namely, acanthosis and parakeratosis. However, it could be differentiated by the presence of palmoplantar keratoderma, a characteristic of the psoriasis group of diseases. Although the Kogoj spongiform pustule is highly diagnostic of the psoriasis group of diseases.
including Reiter's disease, histologically typical spongiform pustules may occur also in pustular dermatophytosis, bacterial impetigo, pustular drug eruptions, and candidiasis, particularly if pustules are clinically present {172}. Periodic acid-Schiff (PAS) and Gram stains are useful for identifying organisms, such as the bacillus seen in pustular impetigo. These pustules sometimes have a raised, yellow, keratic, and central gray-white rim, as opposed to the bluish gray and central gray-white rim seen in Munro microabscesses. Munro microabscesses generally differ from Munro microabscesses by being larger and less well circumscribed and by often showing crusting.
Because of the clinical and, particularly, the histologic resemblance of the tongue lesions in pustular psoriasis
Munro microabscesses in Psoriasis