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...
Spongiform pustules of Kagoj in Psoriasis
Psoriatic arthritis characteristically involves the terminal interphalangeal joints, but frequently the large joints are also affected. 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...
This cutaneous eruption is characterized by the presence of variable numbers of sterile pustules appearing in crops. 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** von Zumbusch is generally diagnosed when the...
Generalized pustular psoriasis is a rare pustular eruption that appears during the last trimester of pregnancy. It starts with flexural lesions of the legs and arms, which then spread to involve the trunk, face, and neck. This condition is distinct from impetigo herpetiformis, but some authors believe it is the same disease. It may recur during successive pregnancies.

In some instances of subacute annular pustular psoriasis, gyrate lesions show a clinical resemblance to subcorneal pustular dermatosis.
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 this condition, only a small area of the body is affected. Atrophy of the skin and permanent nail loss may occur on the fingers and toes.

Pustulosis palmaris et plantaris, or Ehrlich's disease, is a chronic, relapsing disorder occurring on the palms and soles. Crops of small, deep-seated pustules are seen within areas of erythema and scaling. In the earliest stage, the lesions may appear as small, round, yellowish pustules. An acute variant called "pustular bacterid" describes a rare eruption of large and sterile pustules on hands and feet.
The association between psoriasis and human immunodeficiency virus (HIV) infection is commonly seen. The prevalence of HIV infection in individuals with psoriasis is estimated to be 10% (109). Extensive erythrodermic psoriasis may occur, and patients may have a more severe course with sudden exacerbations and may be refractory to treatment. A trend of low peripheral T-cell CD4+ (helper-inducer) counts has been noted in patients with psoriasis who are infected with HIV.
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 neutrophils and some spongiosis.
exocytosis of neutrophils, they may aggregate in the uppermost portion of the spinous layer to form sma
In the fully developed lesions of psoriasis, as best seen at the margin of enlarging plaques, the histologic picture is characterized by the following: (a) the early presence of a dense infiltrate of lymphocytes and histiocytes; (b) the formation of spongiform pustules; (c) Munro microabscesses; (d) parakeratosis; (e) hyperkeratosis; (f) the presence of Munro microabscesses; (g) elongation and edema of the dermal papillae; and (h) dilated and tortuous capillaries.
Of the listed features, only the spongiform pustules of Kogoj and Munro microabscesses are truly diagnostic.

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.

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 elong...
An entirely typical histologic picture as described earlier is not always found, even if the biopsy specimens show spongiform pustules. Focal parakeratosis, or, occasionally, alternating layers of orthokeratosis and parakeratosis, indicates 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 tips of dermal papillae.
Guttate or eruptive psoriasis shows the histologic features of an early or active lesion of psoriasis, where there is more pronounced inflammatory reaction with spongiform pustules. The extracellular fluid in the pustules is neutrophilic, which, in turn, may appear loosely arranged.

The histologic picture of erythrodermic psoriasis in some instances shows enough of the characteristics of psoriasis to allow this diagnosis. Frequently, however, the histologic appearance is indistinguishable from that of a chronic eczematous dermatitis.

Generalized Pustular Psoriasis
Histopathology
Whereas in ordinary psoriasis the spongiform pustule of Kogo is a very small micropustule and is seen only in early stages, in the spongiform pustule of Kogo, 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 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 ... the pustule. 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...
Pathogenesis of Psoriasis Vulgaris

Although the cause of psoriasis is unknown, there is increasing evidence of a complex interaction among altered keratinocytic proliferation and differentiation, inflammation, and immune dysregulation.
Electron Microscopy
The earliest recognizable morphologic events in psoriasis have been investigated in lesions that cleared...
Spongiform pustules of Kagoj in Psoriasis = اﻠﺼدﻒ ﻓﻲ اﻠﺸﻜﻞ اﻠاﺴﻔﻨﺠﻴﺔ اﻠﺒﺜراﺖ
Ultrastructural studies of the spongiform pustule of Kogoj, one of the most characteristic histologic structures in psoriasis, show that the capillary loops in the dermal papillae are different from normal capillary loops. This difference is the 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 the epidermal 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 germinative cell cycle is shortened from 311 to 36 hours, indicating that the number of proliferating keratinocytes increases drastically, (b) there is a doubling of the proliferative cell population in psoriasis from 27,000 to 52,000 cells/mm² of epidermal surface area, and (c)
100% of the germinative cells of the epidermis enter the growth fraction instead of only 60% for normal subjects.

The source of the cycling cells in the suprabasal layers of the epidermis is not well defined. They could be
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...
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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 (TNF-α), and γ-interferon (γIFN), which is also produced by CD8+ T lymphocytes.
Keratinocytes stimulated by TNFa may produce IL-B, which is a potent T-lymphocyte and neutrophil chemoattractant.
yIFN is believed to play an important role in the initiation of psoriatic lesions as demonstrated by the induction of pinpoint lesions at sites of yIFN injection in previously uninvolved skin.
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...
Pathogenesis of Psoriasis and AIDS
There is evidence of the role of both CD8+ and CD4+ T lymphocytes and γIFN 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 is a common feature 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 flattened epidermis with absence of acanthosis, atrophy of the papillary dermis, 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, lack of parakeratosis, atrophy of the epidermis 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 an increased number of neutrophils in the infiltrate. 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 visualization of microorganisms and other features of disease. Spongiform pustules 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 with those seen in geographic tongue, it has been suggested that geographic tongue represents an abortive form of pustular psoriasis.
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