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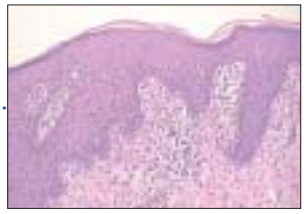

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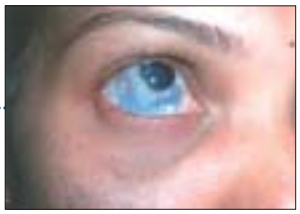

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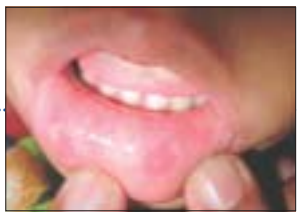

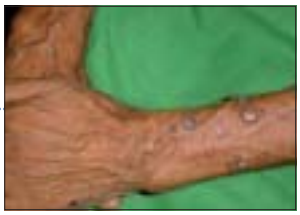

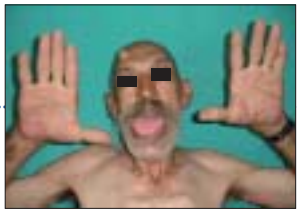

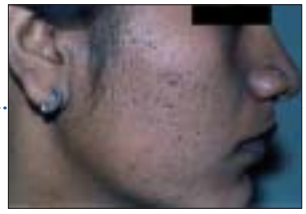

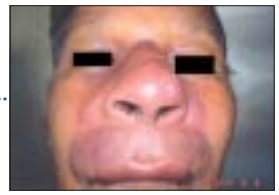

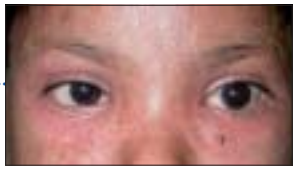

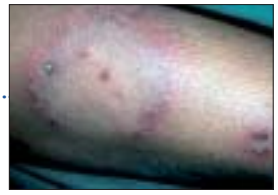

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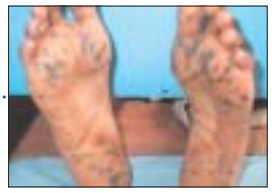

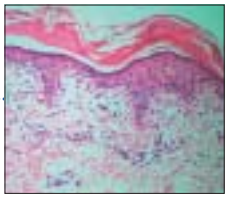

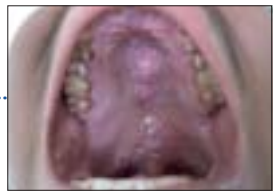

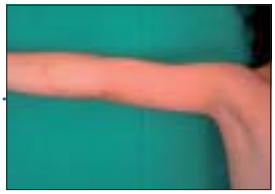

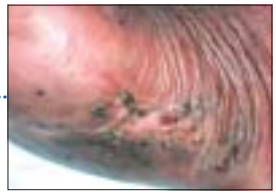

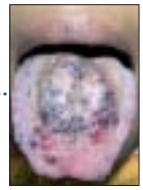

Psoriasiform dermatoses

Virendra N. Sehgal, Sunil Dogra[1], Govind Srivastava[2], Ashok K. Aggarwal

Dermato-Venereology (Skin/VD) Centre, Sehgal Nursing Home, Panchwati, Azadpur, New Delhi, [1]Department of Dermatology, Venereology and Leprology, Postgraduate Institute of Medical Education and Research, Chandigarh, [2]Skin institute and School of Dermatology, Greater Kailash, New Delhi, India

Address for correspondence: Dr. Virendra N. Sehgal, A/6, Panchwati, New Delhi - 110 033, India. E-mail: drsehgal@ndf.vsnl.net.in

ABSTRACT

Psoriasiform reaction pattern is a commonly encountered denominator in a wide variety of unrelated disorders. It may be a reaction to either the internal or the external environmental, allergic, infective, parasitic, bacterial, fungal, viral and/or malignant stimuli. The degree of evolution of such a pattern and its significance vary according to the dermatosis. The age of the skin lesions may also influence the histopathological presentation and its clinico-histopathological disparity can often bewilder an expert. However, such a situation warrants more astute and sustained observations to unveil the exact underlying condition(s). Thus, psoriasiform dermatoses should only be an initial caption until an exact dermatological disorder is defined. There has been greater number of instances of psoriasiform drug eruptions where a confirmation of the diagnosis can be achieved after their remission by doing a provocation test. Similarly, such instances have also been on the rise in HIV/AIDS-affected individuals all over the world. Besides mycosis fungoides and Hodgkin's disease, several unrelated malignancies have been preceded or accompanied by psoriasiform skin eruptions.

Key Words: Classification, Etiology, Pathogenesis, Psoriasiform dermatoses

INTRODUCTION

Psoriasiform dermatoses refers to a group of disorders, which clinically and/or histologically, simulates psoriasis.[1,2] They include several unrelated disorders of the integument, which either in the beginning or in the course of progression/resolution, exhibit lesions resembling psoriasis.[3-4] Psoriasiform eruptions can commonly be seen in seborrheic dermatitis, pityriasis rubra pilaris, psoriasiform syphilids of secondary syphilis, pityriasis rosea, mycosis fungoides and drug eruptions. However, their inventory is quite exhaustive, especially when the histopathological assessment is also included to conform to the caption of psoriasiform dermatoses. Histopathologically, the psoriasiform reaction pattern is defined as the presence of epidermal hyperplasia with elongation of rete ridges in a regular manner. This definition encompasses a heterogeneous group of dermatological conditions. The morphological concept as outlined by Pinkus and Mehregan, is much broader than the pathogenetic one.[5] They considered the principle features of the psoriasiform tissue reaction to be the formation of suprapaillary exudates with parakeratosis, secondary to intermittent release of serum and leukocytes from dilated blood vessels in the papillary dermis (the so-called squirting papilla). Psoriasis is the prototype of a psoriasiform reaction pattern.[6] The current overview attempts to clarify this commonly encountered dermatologic presentation.

HISTORY

Psoriasis is the oldest of all recorded dermatologic disorders and hence, stands as the prototype of psoriasiform eruptions. Literally, psoriasiform means "like or in the shape of psoriasis".[4] Pinkus and Mehregan[5] observed the intermittent release of serum and leukocytes from dilated blood vessels in papillary dermis resulting in focal parakeratosis and thus, the formation of psoriasiform tissue reaction (squirting papillae). Reed and Clark[7] propounded the pattern recognition method for the identification of such disorders. Subsequently, Ackerman[8] and Mihm[9] modified

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these criteria to address the pathogenesis/etiology as well as the reaction pattern. Farmer and Hood[10] classified such disorders into three broad groups depending on the degree/presence of psoriasiform epidermal hyperplasia. Elder *et al.*[11] improved upon this classification into the broad groups based on the presence of epidermal proliferation as well as on the variations in the types of affected cells.

CLASSIFICATION

Several classifications are in vogue to incorporate the entities grouped under the aegis of psoriasiform eruptions. Pinkus[1] grouped such disorders under two groups: one with a definite presence of suprapapillary exudates and parakeratosis, the other presenting a diagnostic dilemma [Table 1].

Farmer and Hood[10] based their classification chiefly on the presence of a characteristic pattern of epidermal hyperplasia [Table 2].

However, Elder *et al.*[11] classified psoriasiform disorders based on the presence of predominant cell type in the infiltrate [Table 3].

ETIOLOGY

Diverse etiologic agents can be recorded in different instances of psoriasiform eruptions/dermatoses [Table 4].[12-72] The 'major psoriasiform dermatoses' are psoriasis, pustular psoriasis, AIDS-associated psoriasiform dermatitis, Reiter's syndrome, pityriasis rubra pilaris, parapsoriasis and lichen simplex chronicus. As a rule, this group of dermatoses is characterized by regular epidermal hyperplasia, although such features are usually absent in the early stages.[2]

Newer drugs are still being added to the etiologic list of psoriasiform drug eruptions. Acquired immunodeficiency syndrome has added another dimension to the entity by producing the psoriasiform eruption *per se* or through other infective disorders, such as leishmaniasis, which affect AIDS patients [Table 4].

PATHOGENESIS

Although the exact pathogenesis of psoriasiform dermatoses is uncertain, it is believed that the events that precipitate psoriasiform changes are frequently inflammatory. They appear to involve the dysregulation

Table 1: Pinkus view of psoriasiform disorders[1]

Group-1	Group-2
Definite: Suprapapillary exudate and parakeratosis	Probable
a. Psoriasis - all presentations	a. Nummular eczema
b. Reiter's syndrome	b. Pityriasis rubra pilaris
c. Acrodermatitis continua	c. Lichen simplex chronicus
d. Impetigo herpetiformis	d. Subcorneal pustular dermatosis
e. Seborrheic dermatitis	e. Folliculitis
f. Asteatotic dermatitis	f. Impetigo
	g. Pustulosis palmo-plantaris

Table 2: Farmer and Hood[10] classification of psoriasiform dermatitis

Group-1	Diseases showing psoriasiform epidermal hyperplasia as a characteristic feature
	a. Psoriasis
	b. Reiter's disease
	c. Lichen simplex chronicus
	d. Pityriasis rubra pilaris
	e. Pellagra
	f. Inflammatory liner verrucous epidermal nevus
	g. Associated with acquired immuno deficiency syndrome (AIDS)
	h. Acrodermatitis enteropathica
	i. Necrolytic migratory erythema
Group-2	Diseases showing psoriasiform epidermal hyperplasia as a frequent feature
	a. Contact dermatitis
	b. Nummular dermatitis/eczema
	c. Seborrheic dermatitis
	d. Psoriasiform syphlids
	e. Mycosis fungoides
	f. Pityriasis rosea
Group-3	Diseases showing psoriasiform epidermal hyperplasia as an occasional feature
	a. Dermatophytoses
	b. Candidiasis
	c. Norwegian scabies

Table 3: Classification of psoriasiform disorders[11]

Types	Example(s)
1. Lymphocyte predominant	a. Nummular dermatitis
	b. Pityriasis rosea
	c. Lichen simplex chronicus
2. Plasma cell predominant	a. Psoriasiform syphlids
	b. Arthropod bite reaction
3. Eosinophils predominant	a. Chronic allergic dermatitis
	b. Exfoliative dermatitis
	c. Cutaneous T-cell lymphoma (CTCL)
4. Neutrophils predominant	a. Psoriasis
	b. Dermatophytoses
	c. Reiter's disease

Table 4: Etiology of psoriasiform eruptions

Etiology	Disorders

1. Erythemato-scaly	• Psoriasis[12]
	• Disorders of keratinization[3,13]
	  • Pityriasis rubra pilaris[13,14]
	  • Erythrokeratodermia[15]
	  • Papillon-Lefevre syndrome[16]
	  • Lamellar ichthyosis[17]
	• Reiter's disease[18]
	• Pityriasis rosea[19]
	• Erythroderma/exfoliative dermatitis[20]

2. Eczematous	• Seborrhoeic dermatitis[2] • Nummular dermatitis[2,5] • Lichen simplex chronics[21,22] • Allergic contact dermatitis[23-25]
3. Infective	
• Viral	• AIDS-associated psoriasiform dermatitis[26-28]
• Spirochetal	• Psoriasiform syphlids[29,30]
• Fungal	• Dermatophytes infection[31,32]
• Parasitic	• Candidiasis[33] • Leishmaniasis[34] • Norwegian scabies[35,36]
4 Malignant	• Mycosis fungoides[37] • Hodgkin's disease (paraneoplastic)[38] • Bazex syndrome [39]
5. Drug-induced	• Anticonvulsant drugs[52-54] • Fluorescien sodium[55] • Infliximab[56] • Icodextrin[57] • Metformin[58] • Terbinafine[59] • Recombinant granulocyte-macrophage colony stimulating factor (rGM-CSF)[60-61] • Venlafaxine[62] • Pegylated-liposomal doxorubicin[63] • Calcium channel blockers[64] • Botulinum A toxin[65] • Beta blockers[66] • Mitomycin[67] • Captopril[68] • Chlorthalidone[68] • Quinidine[69] • Glibenclamide[70] • Lithium[71] • Digoxin[72]
6. Other causes	• Inflammatory linear verrucous epidermal nevus[40] • Pellagra[10] • Necrolytic migratory erythema[10] • Acrodermatitis enteropathica[41] • Parapsoriasis[42] • Kawasaki disease[43] • Chondro-dysplasia[44] • Sarcoidosis[45] • Subacute cutaneous LE[46] • Acral psoriasiform hemispherical papulosis[47] • Psoriasiform acral dermatitis[48] • Psoriasiform and sclerodermoid dermatitis of the fingers[49] • Infantile febrile psoriasiform dermatitis[50] • Sulzberger-Garbe exudative discoid and lichenoid dermatitis[51]

of cytokines and growth factors which are vital to the maintenance of normal epidermal proliferation.[2,5,73] An overexpression of amphiregulin has been shown to induce psoriasiform changes in the skin of transgenic mice shortly after birth.[74]

The stages of development of the lesions in psoriasiform dermatitis may contribute to the variable morphologic presentation in different disorders. Murphy[6,73] discussed the temporal evolution of psoriasiform dermatitis from the initial stage A, to a fully developed stage, E. Initial stage A shows a subtle basal cell hyperplasia and focal parakeratosis which later slowly evolves into irregular epidermal hyperplasia B, and hypergranulosis and occasional neutrophils in parakeratotic area (stage C). Further evolution leads to a regular epidermal hyperplasia, upward-growing edematous dermal papillae with dilated capillary loops (stages D and E) [Figures 1-3].[6,73]

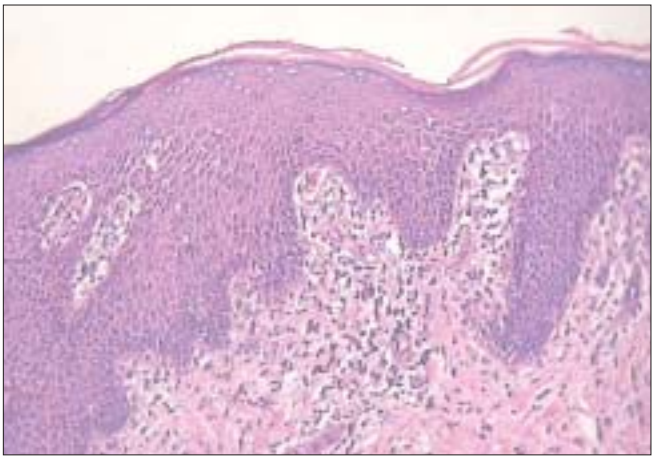

Figure 1: Subacute spongiform dermatitis- Irregular psoriasiform hyperplasia of epidermis with mild spongiosis and focal parakeratosis with preservation of granular layer

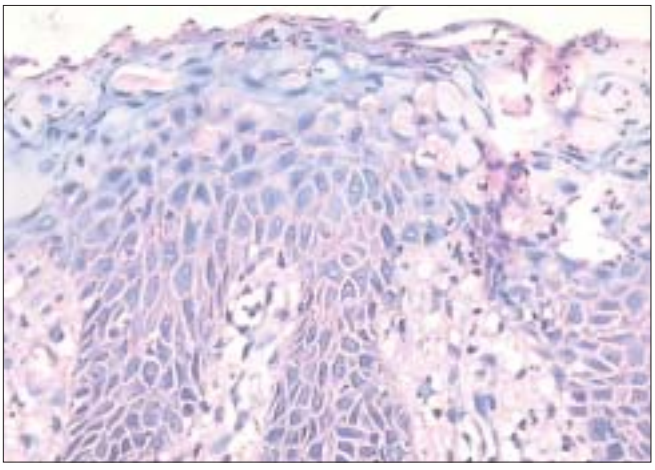

Figure 2: Evolving psoriasis showing neutrophillic sopngiosis and absence of granular layer (Murphy stage C)

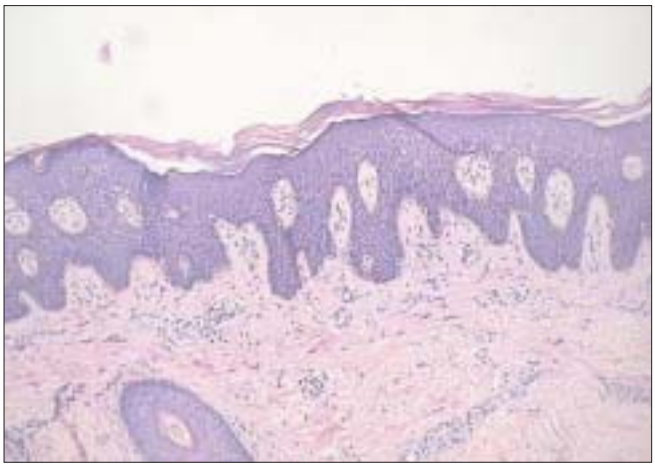

Figure 3: Established psoriasis- Regular psoriasisform hyperplasia with elongated mounds of parakeratosis containing occassional neutophils (Murphy stage D)

CLINICAL FEATURES

Psoriasiform lesions appear morphologically similar to the prototypic classical psoriasis. However, depending upon the disorder, the lesions may vary in size, shape, scaling, distribution and configuration[53] [Figure 4]. Reiter's syndrome may show classic rupioid/circinate lesions with keratoderma blennorrhagica,[18,53] while pityriasis rubra pilaris reveals hyperkeratotic peri-follicular lesions with a halo of erythema.[13,53] Similarly, pityriasis rosea may reveal oval plaques with a collarette of fine scaling.[19] On the other hand, AIDS-associated psoriasiform lesions may be more "angry"-looking with a prominent component of seborrhoeic dermatitis.[26-28] Nummular dermatitis may show only moist and scaly, coin-shaped lesions.[11] Drug-induced psoriasiform[57-72] and psoriasiform syphlids lesions[29-30] may retain their classical pathognomonic signs which can delineate the diagnosis. Further investigations may clinch the exact pathology.[53] The list of disorders presenting either as clinical or as pathological evidence of psoriasiform eruptions is so big that it is not possible to individually discuss features of these disorders. If clinical examination does not provide a clear cut diagnosis, a histopathological investigation will definitely help to make a precise assessment of the dermatosis.[1,2,5] Accordingly, other relevant tests such as serological tests for syphilis, provocations tests for drug eruptions etc, can be undertaken according to the merits of the case.[53]

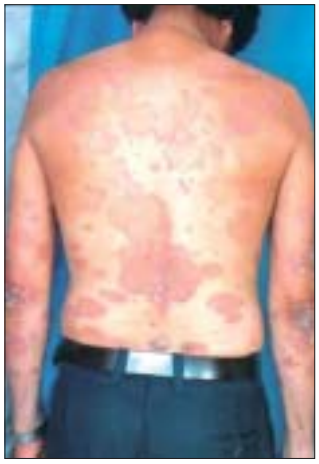

Figure 4: Psoriasiform lesions mimic psoriasis

HISTOPATHOLOGY

The clinico-histological correlation of psoriasiform dermatoses is intriguing. A classical histopathological pattern of psoriasiform dermatoses displays a uniform elongation of the rete ridges, papillomatosis and cellular infiltrate both in the epidermis and dermis. Hypergranulosis and parakeratosis may be other accompaniments.[2,8-10] Various cutaneous disorders depicting psoriasiform dermatitis may still retain a few features. The histopathology of mycosis fungoides may show a variable degree of epidermotropism with hyperchromatic and hyperconvoluted nuclei in lymphocytes.[37] Dermatophytosis shows focal parakeratosis, focal spongiosis and uneven epidermal hyperplasia.[31-32] A sandwich sign-presence of fungal elements between the viable epidermis below and the parakeratotic stratum corneum above can be demonstrated in special stains.[32] Similarly, crusted scabies[10,36] and secondary syphilis[29] can be identified due to the presence of the causative mite and spirochete, respectively. However, newer conditions are being continuously added to this group, which depict a subtle variation on the basic theme of the psoriasiform reaction pattern.[47-50]

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