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A Detailed Study of Histomorphological Spectrum of Psoriasiform Dermatitis

Kumari Kalpana M.K.

Associate Professor, Depatment of Pathology, Ramaiah Medical College, M S Ramaiah Nagar, Mathikere, MSRIT Post office, Bengaluru, Karnataka 560054.

Abstract

Background: Psoriasiform term implies that a lesion clinically or histologically mimics psoriasis. Psoriasiform dermatoses often poses diagnostic dilemma to both pathologists and dermatologists. It is essential to follow a systematic approach and use appropriate clinicopathological correlation to arrive at a diagnosis. *Aims and objectives:* To study histomorphological features of psoriasiform disorders. *Material and methods:* This is a prospective study of 57 patients diagnosed clinically as psoriasis or with psoriasis as one of the differential diagnosis. Relevant clinical history and physical examination were noted. The skin biopsies taken after the consent were processed in histopathology laboratory and stained with hematoxylin and eosin. A detailed microscopic study of the histomorphological features was done. *Obervations and Resutls:* The psoriasiform lesion comprised 6% of the total skin biopsies received in the department of pathology. The age distribution pattern revealed that the highest percentage was in the age group of 21-50 yrs with a male preponderance with a ratio of 1.1:1. Psoriasis was the most common lesion noted in the study. Other psoriasiform disorders were parapsoriasis, Pityriasis rosea, Bowens disease, mycosis fungoides, seborrheic dermatitis. *Conclusion:* There is certain amount of overlap of both clinical pattern and of psoriasis and psoriasiform disorders. Recognition of these commonly encountered psoriasiform disorders clinically and confirming it on histopathology is the key to correct diagnosis and better patient care.

Keywords: Psoriasiform; Parapsoriasis; Pityriasis Rosea.

Introduction

Psoriasiform literally means like or in the shape of psoriasis [1]. Psoriasiform dermatoses refers to a group of disorders which clinically and or histologically simulate psoriasis. It includes several unrelated disorders which either in the beginning or progression or resolution exhibit psoriasis [2]. Psoriasiform eruptions can be seen in parapsoriasis, pityriasis rosea, pityriasis rubra pilaris mycosis fungoides and others [3].

Clinically psoriasiform lesions appear as classical psoriasis, however microscopically there are different classifications of psoriasiform disorders-

1. With a definitive presence of suprapapillary exudate and parakeratosis. Examples – psoriasis, seborrheic dermatitis.
2. The other presenting with diagnostic dilemma are pityriasis rubra pilaris, pustular palmoplantaris [4].

Elder et al classified disorders based on the presence of predominant cell type in the infiltrate. Examples a) lymphocytic infiltrate in pityriasis rosea and b) neutrophilic infiltrate in psoriasis [5].

As a large number of conditions can come under the psoriasiform dermatoses with lot of overlapping clinical features it is essential to study the histomorphological features of psoriasiform disorders. Histopathology is the gold standard for diagnosis. Clinicopathological correlation is must for correct diagnosis and appropriate treatment.

Corresponding Author: Kalpana Kumari M.K., C-710 Sterling Residency Dollars Colony Bangalore -560094.
E-mail: kalpank@gmail.com

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Material and Methods

This was a prospective study, which was undertaken in the department of pathology, with the permission of institutions ethical committee and with the consent of the patients. A total of 57 cases presenting with a clinical diagnosis of psoriasis or psoriasis as one of the differential diagnosis were selected. Relevant clinical history and physical examination findings were noted. The biopsies taken after consent were processed in histopathology laboratory and stained with Hematoxylin and eosin. A detailed study of the histomorphological features was performed.

Results

The present study is a comprehensive analysis of 57 cases of psoriasiform disorders which constituted 6% of the skin biopsies received in the tertiary care hospital over a period of two years. Age distributionof the study is provided in Table 1. The maximum number of cases were seen in cases the age group of 21-50yrs. The sex distribution pattern revealed that there was a slight male preponderance of cases with a ratio of 1.1:1

Spectrum of psoriasiform disorders as per histopathology is depicted in Table 2. The most common clinical diagnosis which was confirmed on histopathology was psoriasis (57%).

Clinicopathological concordance was seen in 89.47%, and discordant in 5.26% and 5.26% cases histomorphology showed only non specific diagnosis and authors could not arrive at a definitive diagnosis (Table 3).

Histopathological findings commonly seen were parakeratosis, dermal lymphocytic infiltrate, capillary dilatation whereas diagnostic findings such as Munro's microabscess and Kogoj pustules were seen in a few cases (Table 4).

There were 6 cases of parapsoriasis in this study, 5 were diagnosed clinically and confirmed on histopathology. One case had differential diagnosis of parapsoriasis, erythema annulare and pityriasis rosea which was diagnosed as parapsoriasis on histopathology. The histopathological findings in parapsoriasis is nonspecific comprising of spongiosis in epidermis, focal areas of parakeratosis and mild dermal lymphocytic infiltrate.

Pityriasis rosea- there were six cases of pityriasis rosea in this study. Histologically showed mild to moderate acanthosis, spongiosis with exocytosis and chronic inflammatory infiltrate in the dermis.

We had one case of seborrheic dermatitis, mycosis fungoides and Bowens disease in this study.Bowens disease was seen in a 45 yr. old male with a rough patch with an adherent scale on face. It was clinically diagnosed as psoriasis, but histopathological examination revealed acanthosis, elongation of rete ridges and moderate to severe degree of dysplasia in the epidermis.

One case of seborrheic dermatitis which presented with greasy scales over the eyebrow nasolabial folds and chest initially diagnosed as psoriasis was confirmed as seborrheic dermatitis it revealed slowed psoriasiform hyperplasia of epidermis, dermal fibrosis along with mild to moderate lymphocytic infiltrate in the dermis.

One case clinically presented with large plaques clinically diagnosed as mycosis fungoides. Histopathological examination shows lymphocytic

Table 1: Age distribution

Age Group	Number of Patients	Percentage (%)
<10yr	3	5.26
11-20yr	10	17.54
21-50yr	39	68.42
>50yr	5	8.77

Table 2: Distribution of cases

Type	Number of Cases	Percentage (%)
Chronic Plaque Psoriasis	33	57
Pityriasis Rosea	06	10
Parapsoriasis	06	10
Pustular Psoriasis	04	07
Follicular Psoriasis	02	03
Seborrheic Dermatitis	01	1.7
Bowens Disease	01	1.7
Mycosis Fungoides	01	1.7
Chronic Non Specific Dermatitis	03	5

Table 3: Clinicohistopathological concordant outcomes

	Number of Cases	Percentage (%)
Concordant	51	89.47
Discordant	3	5.26
Clinically Correlate	3	5.26

Table 4: Psoriasiform changes on histopathological findings

Histopathological Change	Number of Patients	Percentage (%)
Elongation of rete ridges	41	71.9
Epidermal hyperplasia	38	66.7
Epidermal infiltration	2	3.5
Dermal infiltration	56	98.2
Hypergranulosis	26	45.6
Parakeratosis	55	96.5

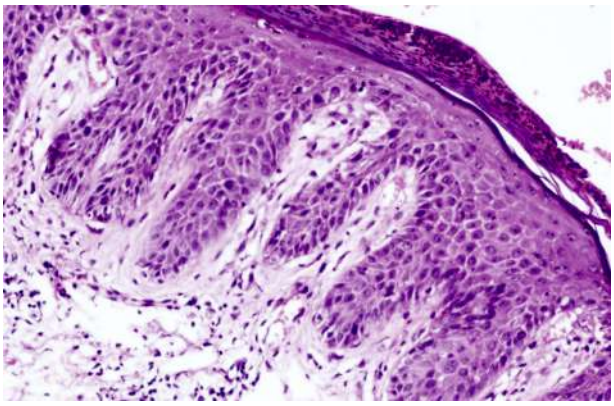

Fig. 1: Psoriasiform lesion showing parakeratosis, acanthosis, elongation of rete ridges, dermal infiltrate and congested vessels (H&E 40x)

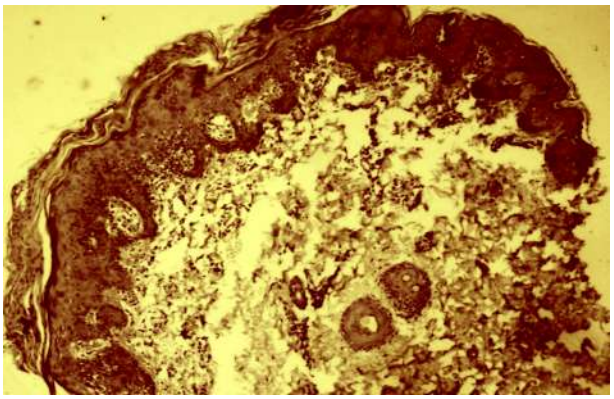

Fig. 2: Pityriasis rosea showing psoriasiform dermatitis.(H&E 40x)

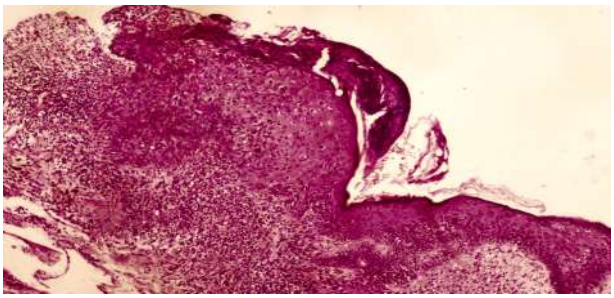

Fig. 3: Bowens disease showing full thickness dysplasia.(H&E 40x)

infiltrate in dermoepidermal junction, highly pleomorphic cells with irregular and convoluted nuclear membrane. Pautriers micro abscess were seen in the epidermis.

Discussion

Psoriasis has many different clinical variants and resemble clinically other diseases such as parapsoriasis, pityriasis rosea, seborrheic dermatitis and psoriasiform drug rash all these conditions known as psoriasiform disorders. Since satisfactory management of the condition requires both symptomatic and specific therapy, it is essential to reach a definitive diagnosis. The recurrent nature and prognosis of psoriasis differs from that of psoriasiform dermatitis, thus reiterating the importance of the correct diagnosis, which is possible by gold standard "histopathological correlation" [6].

In clinical practice during diagnostic dilemma of neoplastic versus nonneoplastic disorders, histopathological evaluation is the mainstay of diagnosis. However, at times even histopathological study does not give a definitive diagnosis and it is compatible with rather than diagnostic of clinical diagnosis. In such circumstances clinicopathological correlation serves as ideal approach [6].

We studied histological features of 57 cases of psoriasiform disorders. The age group of patients varied from 9 yrs to 70 yrs. The finding similar to a studied by Chandanwale et al [7], in their study youngest patient was 17 yrs and oldest 75 yrs.

Males were commonly affected than females in both psoriasis and psoriasiform disorders.

Similar observations were made by other studies [7,8].

Psoriasiform changes seen in this study were

elongation of rete ridges, parakeratosis and dermal infiltrate infiltrate (Table 4). In a study done by Nitinkumar et al [3] showed dermal infiltrate in 90% of cases and varying degree of elonagation of rete ridges, epidermal hyperplasia, hypergranulosis. A study done by Sehgal VN also documented similar findings [2].

In this study of 57 cases, 38 cases were clinically diagnosed as psoriasis 33 were confirmed as psoriasis however one case of guttate psoriasis was diagnosed as non specific dermatitis and advised to correlate clinically. Another case was psoriatic diathesis was nonspecific changes hence requested to correlate clinically. Two cases which were diagnosed clinically as psoriasis were diagnosed as Bowen disease and mycosis fungoides.

Other clinical conditions which resembled psoriasis clinically were diagnosed as parapsoriasis and pityriasis rosea. Clinicohistological correlation was seen in 89.47% of cases (Table 3). In a study done by Mehtha. S [6] revealed sensitivity and specificity of clinical diagnosis for psoriasis and psoriasiform dermatitis as 84% and 48.3% respectively, histological diagnosis as 72.4% and 65.2% respectively emphasizing clinical diagnosis as more sensitive and histopathology more specific for subsequent confirmation.

One case had a differential diagnosis of psoriasis and seborrheic dermatitis and it was histomorphologically diagnosed as seborhoeic dermatitis. The differential diagnosis of psoriasis and seborhoeic dermatitis can be difficult when both conditions are localized to the scalp without the involvement of skin. In this study patient presented with lesions on scalp as wells on eyebrow, nasolabial folds and scalp.

In study was done by Park et al (9) to evaluate the histological differences between psoriasis and seborhoeic dermatitis on the scalp and identify favourable criteria. They concluded that psoriasis showed mounds of parakeratosis with neutrophils, spongiform micropustules of Kogoj, clubbed and evenly elongated rete ridges, and increased mitotic figures., whereas features indicating seborhoeic dermatitis were follicular plugging, shoulder parakeratosis and prominent lymphocytic exocytosis. This results were consistent with other studies also [10,11].

In this study we received six cases with differential diagnosis of parapsoriasis, 5 cases were confirmed as parapsoriasis where as one case was diagnosed as chronic non specific dermatitis and requested for clinical correlation by pathologists.

Parapsoriasis refers to group of heterogeneous cutaneous disorders that show variable clinical aspects resembling psoriasis hence the name parapsoriasis. In 1902, Brocq named the entity with the variants pityriasis lichenoides, small plaque parapsoriasis and large plaque parapsoriasis. It is very important to correctly diagnose different variants included

In the parapsoriasis group even if there histology is similar as there is high risk of prognosis to cutaneous lymphoma [12]. The histological finding of small plaque parapsoriasis is not pathognomonic and authors found many overlapping feature and the potential transformation of parapsoriasis in a malignant disease cannot be predicted by mere histopathological examination and thereby authors suggest to perform immunohistochemistry studies to establish a conclusive diagnosis to exclude the possibility of early stage lymphoma [12].

Lever et al [10] and Irena et al [13] state that elongated mounds of parakeratosis with collection of plasma above a basket weave cornified layer is a characteristic finding apart from spongiosis, acanthosis and exocytosis of lymphocytes and parakeratosis.

We had one case mycosis fungoides (MF) in this study which was diagnosed as psoriasis clinically as the patient presented with large scaly patches. Reggiani C et al [14] studied 21 cases of mycosis fungoides and found all biopsied had long linear aggregates of dermal lymphocytes splaying collagen fibers, involving predominantly the superficial and mid dermis. Authors conclude the accurate clinicopathological correlation and immunophenotyping studies of atypical dermal interstitial lymphohistiocytic infiltrates allows to make a correct diagnosis.

One of the largest study of histopathology features of early lesions of mycosis fungoides a morphologic study on 745 biopsy specimen from 427 patients showed most common histopathological pattern consisted of band like or patchy lichenoid infiltrate admixed with coarse bundles of collagen in superficial dermis. Psoriasiform hyperplasia can occur in mycosis fungoides [15]. Practically every combination pattern like psoriasiform, spongiotic psoriasiform, psoriasiform lichenoid and spongiotic psoriasis can be seen [16].

A 45 yr old presented with adherent scale on the face was diagnosed as psoriasis clinically diagnosed as psoriasis however histopathology confirmed it as Bowens disease. A wind blown appearance comprising of enlarged, crowded, haphazardly

arranged neoplastic cells that show loss of polarity, enlarged and hyperchromatic nuclei and atypical mitosis in the epithelium of Bowens disease and Bowenoid papulosis of the genitalia [17].

Pityriasis rosea five cases were clinically diagnosed as Pityriasis rosea and confirmed whereas one case which was clinically suspected as pityriasis rosea was diagnosed as pityriasis rubra pilaris. Prasad et al [18] studied 50 biopsies showed absence or decrease of the granular cell layer, extravasation of red blood cells in papillary dermis, partly into the epidermis, dyskeratosis, liquefaction of basal cells, homogenization of papillary collagen, intraepidermal vesicle and the authors observed minor differences from the biopsies of herald patch.

Conclusion

Psoriasiform dermatoses encompasses heterogeneous disorders with clinical and histomorphological overlap. The prototype, psoriasis on histopathology shows features such as acanthosis, regular elongation of rete ridges, club shaped enlargement, dermal inflammatory infiltrate. As there are lot of overlapping features clinically and histologically it is very essential for a good clinicopathological correlation for appropriate treatment and counselling.

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