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Original Research Article

Pityriasis Rosea –A Comparative Histopathologic Study

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Abstract: Pityriasis Rosea (PR) is a self-limiting dermatitis lasting from 4 to 7 weeks. PR is classified under Papulo squamous group of skin lesions which have certain common clinical presentations and lead to confusion in diagnosis. We undertook this study to analyze the histomorphological findings of Pityriasis Rosea, and to compare the clinical and histopathological findings with other similar studies. Biopsy of clinically diagnosed/suspected cases of PR lesions were performed in the department of dermatology and sent to the department of pathology in 10% formalin. The specimen obtained was subjected for tissue processing after fixation. Tissue sections are prepared from paraffin block and stained with haematoxylin and eosin, followed by microscopic examination. Pityriasis Rosea is a comparatively rare clinical condition in this group of diseases. A total of 5 cases were studied. Lesions were common in younger age group. Both males and females are affected. Often there is an overlap in morphology and distribution of these lesions clinically, leading to difficulty in diagnosis. Distinct histopathological features and clinical correlation gives a conclusive diagnosis. Specific histomorphological diagnosis is important to distinguish these lesions from other lesions with similar presentations as the treatment and prognosis varies significantly.
Keywords: Pityriasis Rosea; Histopathology

INTRODUCTION

Pityriasis Rosea (Gk. pityra, bran; L.rosa, red) is a self-limiting dermatitis lasting from 4 to 7 weeks. Lesions chiefly found on trunk, neck and proximal extremities. Lesion consists of round to oval salmon-colored patches following lines of cleavage and showing peripherally attached thin, cigarette paper like scales [1]. These lesions are distributed in a Christmas tree pattern [2].

PR was first described by the Edinburgh dermatologist Robert Willan under another terminology in 1798. The macular variety of PR was mentioned as such by the French dermatologist Camille Melchoir Gibert in 1860. The herald patch was first described by a French dermatologist Louis-Anne-Jean Brocq in 1887 [3]. Hartman first described a patient with purpuric PR in 1944 [2]. PR accounts for approximately 1% of dermatoses. Common in 10-35 years.[3]Both sexes are equally affected. Higher incidence is seen in winter than in summer months [2]. Cause for pityriasis rosea is still unknown. Infection like HHV-7, drugs, psychogenic disturbances and autoimmunity are suggested for causes. Chlamydia pneumonia, Legionella pneumophilia and Mycoplasma pneumoniae also have been suggested as potential infectious agents in pityriasis rosea [4].

OBJECTIVES

1. To study the histomorphological findings of Pityriasis Rosea in detail.
2. To correlate the clinical findings with histomorphological features of Pityriasis Rosea.

METHODOLOGY

The study includes clinically diagnosed / suspected and untreated case Pityriasis Rosea attending the Department of Dermatology, K.V.G Medical College and Hospital, Sullia, D.K., Karnataka during a period of 2 years. Biopsy of clinically diagnosed/suspected cases of Pityriasis Rosea lesions

were performed after obtaining brief history and detailed clinical examination and were sent for histopathologic study. Haematoxylin and eosin stained sections were studied for various histological features and analyzed.

RESULTS

Five cases of Pityriasis Rosea were studied. Table 1 shows the clinical pattern in histopathologically diagnosed PR. out of 5 cases of PR, 4 cases showed scaly plaque and 2 cases showed papules and patches/macules. 3 cases showed thin scales and 1 case showed follicular papule (Figure 1). All the 5 cases of Pityriasis Rosea showed hyperkeratosis, parakeratosis, mild to moderate acanthosis, focal spongiosis and perivascular inflammation. Chronic inflammatory infiltrate was seen in 4 cases and 3 cases showed extravasation of RBCs in the papillary dermis (Table 2) (Figure 2&3).

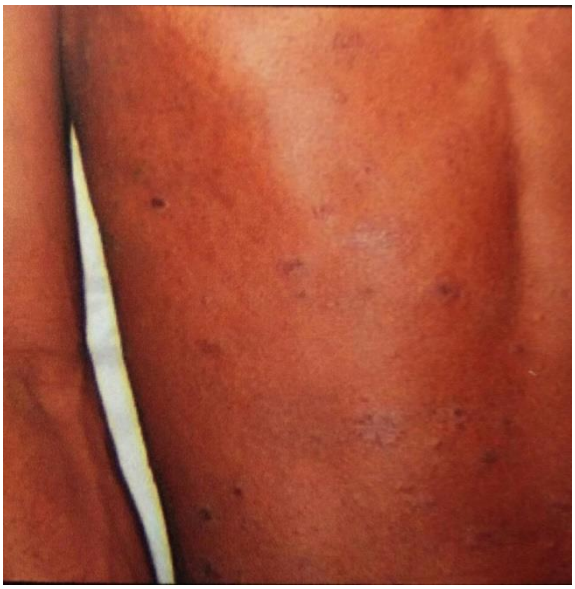

Fig 1: Photograph showing papules and patchy eruptions in Pityriasis Rosea

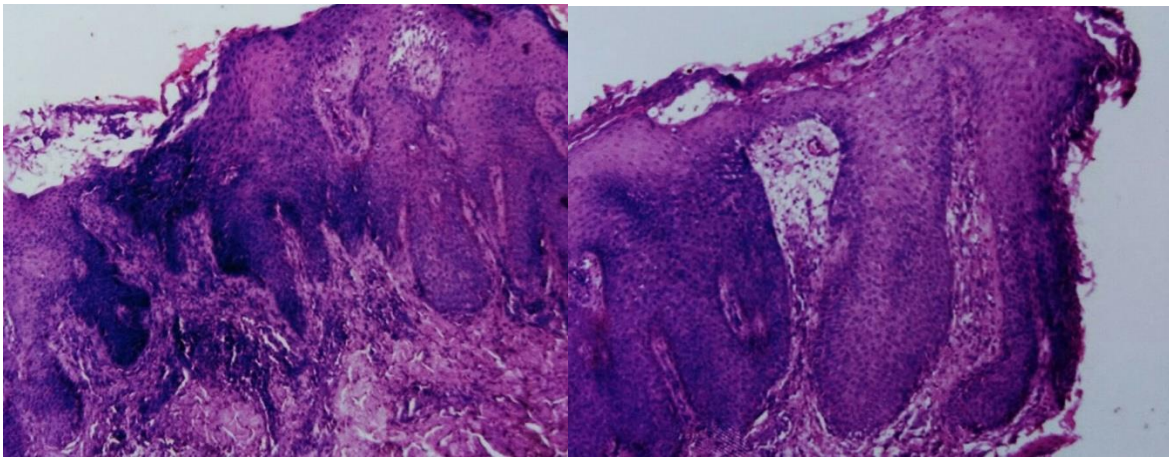

Fig 2&3: Parakeratosis, mild to moderate acanthosis, focal spongiosis and exocytosis of RBCs [Haematoxylin & Eosin, 10 xs]

Table-1: Clinical pattern in histopathologically diagnosed Pityriasis Rosea

Biopsy No.	Papule	Scaly plaque	Flat topped papule/ plaque	Scaly patches /Macule	Verrucous nodule/ plaque	Follicular papule	HKT papule/ plaque	Thin scales	Site
981/11	+	+	-	-	-	-	-	-	Back
772/12	+	+	-	+	-	+	-	-	Trunk
902/12	-	-	-	+	-	-	-	+	Back
380/13	-	+	-	-	-	-	-	+	Back
583/13	-	+	-	-	-	-	-	+	Trunk
Total	2	4	-	2	-	1	-	3	

Table-2: Histopathological changes observed in Pityriasis Rosea

Histopathological changes	No.of cases	Percentage
Epidermal changes		
Hyperkeratosis	5	100
Parakeratosis	5	100
Upper malphigian spongiosis	5	100
Inflammatory cells in spongiosis	-	-
Mild to moderate acanthosis	5	100
Dermal changes		
Perivascular inflammation	5	100
Chronic inflammatory cell infiltrate	4	80
Extravasated RBC s in papillary dermis	3	60

Table-3: Comparison of Age Incidence

Study	Year	Age group (years)
Bunch LW & Tilley JC[14]	1961	7-48
Sezer E *et al.;* [2]	2003	10-35
Stulberg DL & Wolfrey J[4]	2004	20-29
Chuh A *et al.;* [3]	2005	10-35
Present study	2013	21-30

DISCUSSION

Pityriasis Rosea (Gk. pityra, bran; L.rosa, red) is a self-limiting dermatitis lasting from 4 to 7 weeks. Lesions chiefly found on trunk, neck and proximal extremities [2] Cause for pityriasis rosea is still unknown. Infection like HHV-7, drugs, psychogenic disturbances and autoimmunity are suggested for causes. Chlamydia pneumonia, Legionella pneumophilia and Mycoplasma pneumoniae also have been suggested as potential infectious agents in pityriasis rosea.[4]

Cell mediated immunity may be involved due to presence of activated helper –inducer T-lymphocytes (CD4 + / HLA – DR+) in epidermal and dermal infiltrate in association with a highly increased number of Langerhans cells (CD1a+) and the expression of HLA-DR+ antigen on the surface of keratinocytes located around the area of lymphocytic exocytosis [5, 2].

They do not have pathognomonic features. In epidermis – Hyperkeratosis, focal parakeratosis, hypogranulosis, mild to moderate acanthosis, intraepidermal spongiosis and necrotic keratinocytes. In dermis – Superficial perivascular inflammatory infiltrate consisting of lymphocytes, histiocytes and eosinophils. Commonly extravasated erythrocytes in papillary dermis can be seen, which sometimes may involve overlying epidermis. Herald patch shows in addition to the above features increased acanthosis, dense and deeper lymphocytic infiltrate and papillary dermal edema [5, 6]. Electron microscopy shows aggregation of tonofilaments, intracytoplasmic desmosomes and cytoplasmic vacuoles in dyskeratotic cells. In addition, some electron – dense viral like particles are seen at times in keratinocytes [7]. In the present study, 5 cases of pityriasis rosea were studied, which comprised of 3 (60%) males and 2(40%) females and a ratio of 1.5:1 which is concordant with the other studies.

Egwin AS *et al.;* [8], in their clinical study of 50 patients, reported 30(60%) were males and 20(40%) were females giving male: female ratio 1.5:1. Younas M and Haque A [9], in their study of 3 cases of PR noted 2(66.66%) males and 1(33.33%) female. Sezer E *et al.;* [2] and Stulberg DL & Wolfrey J [4] reported no consistent sex predilection in their respective studies. PR is common in younger age groups. Most of the cases reported in different Studies including the present study were between 20-35years (Table 3). In the present study the herald patch was seen in three cases and both were on the back whereas the secondary eruptions were on the trunk and extremities. The initial skin lesion is called a ``herald patch", and usually appears on the trunk as a 2±3 cm oval scaly plaque with a central salmon-colored area and a darker erythematous peripheral zone. The herald patch is typically followed 1±2 wk later by the appearance of numerous smaller, oval, erythematous, scaly, slightly pruritic plaques that tend to occur in a ``Christmas tree" pattern on the trunk [10].

Egwin AS *et al.;* [11], in their study found that Thirty five (70%) patients presented with herald patch and the most common site of involvement was the trunk (40%), followed by upper (14%) and lower extremities (6%). The distribution of secondary eruptions mainly involved the trunk 47(94%), followed by trunk and extremities 19(38%) and trunk, neck and extremities 15(30%) and 6(12%) patients had on the face and trunk. In present study hyperkeratosis, parakeratosis, and mild to moderate acanthosis with focal spongiosis was seen in all 5 cases. The dermal changes included, perivascular inflammation seen in all 5 cases and chronic dermal inflammatory cell infiltrate were seen in 4 cases and extravasated RBCs were seen in 3 cases (Table 2). Relhan V *et al.;* [12], in their study revealed that all the cases showed, focal parakeratosis, prominent spongiosis, and perivascular lymphocytic infiltrate in the upper dermis. Extravasation of RBCs and exocytosis of lymphocytes into the epidermis was also seen.

Balci DD and Hakverdi S [13], in their histological analysis of the biopsy specimen revealed focal spongiosis, lymphocyte exocytosis, and vacuolar changes in the basal layer and perivascular lymphocytic infiltrate in the dermis. Relhan V *et al.;* [12], in their study reported several patients who presented with erythema multiforme like pityriasis rosea. Of five cases diagnosed as PR in the present study, 2 were clinically diagnosed and confirmed histopathologically, 1 case had a clinical suspicion of Pityriasis versicolor, 1 case was suspected to be erythema multiforme and 1 case had a suspicion of Sweet's syndrome.

CONCLUSION

Overlapping of clinical pattern and distribution of lesions of Pityriasis Rosea, a self-limiting dermatitis is quite common. Pityriasis Rosea is a relatively rare papulo squamous skin disorder accounts for approximately 1% of dermatoses. Recognition of these cutaneous lesions depends upon the familiarity of clinical presentation and the diagnosis can be confirmed with histopathology. The pathologist's ability to render an accurate diagnosis depends on the available clinical information. Biopsy specimens of these lesions submitted for histopathology with detailed clinical information & differential diagnosis is crucial for a conclusive diagnosis and better patient care.

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