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CLINICOPATHOLOGICAL CORRELATION IN 50 CASES OF ERYTHRODERMA

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Fifty cases of erythroderma were studied clinically and histopathologically. Clinically 11 were of eczemas, 12 of psoriasis, 14 were drug-induced, 11 of idiopathic group and 1 each of pemphigus foliaceus (PF) and cogenital bullous ichthyosiform erythroderma (CBIE). Histopathologically 10 cases of psoriasis, 1 of PF and 1 of CBIE showed specific histopathology and therefore clinical histopathological correlation was possible only in 12 (24%) cases. Exact differentiation in erythroderma due to eczemas, drugs or idiopathic was not possible histopathologically.

Key Words : Mononuclear dermal infiltrate, Eosinophils, Munro microabscess

Introduction

Common causes of erythroderma are eczemas (40%), psoriasis (25%), drugs (10%), lymphomas and leukemias (15%) and miscellaneous conditions like ichthyosiform erythroderma, pityriasis rubra pilaris, pemphigus foliaceus (PF), lichen planus crusted scabies, etc.[1]

Histological picture is mostly of sub-acute or chronic dermatitis but specific features are seen at times and may help in pinpointing the exact diagnosis.[2] Histopathology has been found to be non-specific in erythrodermas.[3] In different studies, clinicopathological correlation in erythroderma was seen in 15%[4] and 43% cases.[5]

Materials and Methods

Fifty cases of erythroderma were selected from department of Skin and STD, Rajendra Hospital, Patiala. Detailed history, examination and relevant investigations were done. The histopathology of the biopsy specimens was studied after staining the cut section with H and E stain by light microscopy under 100x and 400x and clinicopathological correlation was studied.

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Results

The underlying causes of erythroderma were eczemas in 11 cases (22%), psoriasis in 12 (24%), pemphigus foliaceus and congenital bullous ichthyosiform erythroderma in 1 case (2%) each and drugs in 14 cases (28%). No definite cause could be established in 11 patients (22%)

Epidermal and dermal changes are presented separately in Tables I and II.

In 11 cases of eczemas, histopathology was of chronic dermatitis with hyperkeratosis (100%), spongiosis (72.7%), exocytosis (36.4%), acanthosis (90.9%) and perivascular dermal mononuclear infiltrate in 100%.

In 12 cases of psoriatic erythroderma, hyperkeratosis (100%), parakeratosis (71.4%), regular elongation of rete ridges (83.3%) and papillomatosis (100%) were more prominent. Munro microabscesses (33.3%) and thinning of the supra papillary epidermis (83.3%) were observed only in psoriatic erythroderma.

In 14 drug-induced cases, hyperkeratosis (100%), spongiosis (85.7%), intracellular oedema with perinuclear vacuolization (71.4%), acanthosis (85.7%),

Table I. Epidermal changes in erythroderma in 48 cases

Histopathological features	Eczemas 11/50	Psoriasis 12/50	Drug induced 14/50	Idiopathic 11/50
Hyperkeratosis	11 (100%)	12 (100%)	14 (14%)	11 (100%)
Delling	2 (18.2%)	1 (8.3%)	-	2 (18.2%)
Parakeratosis	6 (54.5%)	12 (100%)	10 (71.4%)	8 (72.7%)
Spongiosis	8 (72.7%)	5 (41.7%)	12 (85.7%)	8 (72.7%)
Focal homogenisation	3 (27.3%)	-	6 (42.9%)	3 (27.3%)
Intracellular oedema	6 (54.5%)	2 (16.7%)	10 (71.4%)	8 (72.7%)
Perinuclear vacuolisation	6 (54.5%)	-	10 (71.4%)	8 (72.7%)
Exocytosis :				
a. Mononuclear	3 (27.3%)	-	2 (14.3%)	3 (27.3%)
b. Neutrophilic	1 (9.1%)	-	2 (14.3%)	-
Increased epidermal melanisation	4 (36.4%)	-	2 (14.3%)	5 (45.5%)
Acanthosis	10 (90.9%)	12 (100%)	12 (85.7%)	11 (100%)
Pseudoepitheliomatous hyperplasia	3 (27.3%)	2 (16.7%)	2 (14.3%)	3 (27.3%)
Elongation of rete ridges	5 (45.5%)	10 (83.3%)	2 (14.3%)	3 (27.3%)
Papillomatosis	6 (54.5%)	12 (100%)	10 (71.4%)	6 (54.5%)
Suprapapillary thinning	-	10 (83.3%)	-	-
Munro micro-abscessess	-	4 (33.3%)	-	-

papillomatosis (71.4%), increased dermal vessels with perivascular mononuclear infiltrate (100%) were observed. Admixture of eosinophils in the mononuclear dermal infiltrate was seen in 57.1% of patients.

Idiopathic cases (11) showed features of chronic dermatitis, but mononuclear dermal infiltrate was more intense than in other groups.

CBIE case had massive hyperkeratosis, mild parakeratosis, follicular keratosis, prominent stratum granulosum and keratohyalin granules, moderate papillomatosis, spongiosis, perinuclear vacuolisation of epidermis and mild mononuclear perivascular infiltrate with dilated dermal vessels.

Pemphigus foliaceus erythroderma case showed mild hyperkeratosis, parakeratosis, split beneath stratum granulosum with few clumps of degenerated epidermal cells, dyskeratotic changes as corps ronds and grains, dilatation and multilayering of dermal blood vessels, moderate perivascular mononuclear infiltrate, oedema and disruption of the dermis.

Table II. Dermal changes in erythroderma in 48 cases

Histopathological features	Eczemas 11/50	Psoriasis 12/50	Drug induced 14/50	Idiopathic 11/50
Pigmentary incontinence	4 (36.4%)	-	2 (14.3%)	3 (27.3%)
Increase in vascularity	11 (100%)	12 (100%)	14 (100%)	11 (100%)
Dilatation of vessels	11 (100%)	12 (100%)	14 (100%)	11 (100%)
Multilayering of vessels wall	4 (36.4%)	7 (58.3%)	6 (42.9%)	6 (54.5%)
Fibrinoid deposits	2 (18.2%)	4 (33.3%)	4 (28.6%)	3 (27.3%)
Perivascular infiltrate :				
a. Mononuclear	11 (100%)	9 (75%)	14 (100%)	11 (100%)
b. Neutrophilic	2 (18.20%)	5 (41.7%)	4 (28.6%)	2 (18.2%)
c. Eosinophilic	1 (9.1%)	-	8 (57.1%)	-
Oedema and disruption of dermis	8 (72.7%)	2 (16.7%)	6 (42.9%)	9 (81.8%)
Swollen collagen fibres	6 (54.5%)	5 (33.3%)	8 (57.1%)	6 (54.5%)

Discussion

Clinicopathological correlation was possible only in 12 patients out of 50 (24%). Ten were of psoriatic erythroderma and one case each of congenital bullous ichthyosiform erythroderma and pemphigus foliaceus. Erythroderma due to eczemas, drugs or idiopathic cases could not be authentically differentiated only on histopathological grounds although they had some distinctive features. Eosinophils (57.1%) and focal hemogenisation of epidermal cells (42.9%) were more in drug-induced cases. Mononuclear dermal infiltrate was more intense in idiopathic cases than in others. So correlation of clinical and histopathological changes has definite though limited role in erythroderma.

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