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HISTOPATHOLOGICAL STUDY OF VESICULOBULLOUS LESIONS OF THE SKIN: A STUDY AT TERTIARY CARE HOSPITAL

Histopathology

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ABSTRACT

Background: Vesiculobullous lesions represent a heterogenous group of dermatoses characterized by autoantibodies directed against various autoantigens. Primary lesion is a vesicle or a bulla on the skin or mucous membrane or both. Many of these blistering diseases mimic each other clinically, histopathology together with immunofluorescence are used for diagnosis. **Objectives:** To study histopathological changes by light microscopy and to correlate clinical and histopathological aspects in diagnosing the disease. Materials and methods The observational study was conducted in the Department of Pathology, GMC Aurangabad from January 2021 to June 2022. A total number of 48 cases were encountered during these 18 months. **Results:** Majority of patients presented between 31-40 years of age (31.25%) with male to female ratio of 1:1.08. Pemphigus vulgaris (54.16%) constituted most common vesiculobullous disorder followed by bullous pemphigoid (10.41%) and pemphigus foliaceous (8.33%). Overall clinicopathological correlation was established in 87.5% cases. **Conclusion:** Histopathological and clinical features play a major role in arriving at a definitive diagnosis in majority of vesiculobullous disorders, although direct immunofluorescence is confirmatory as well as diagnostic.

KEYWORDS

Vesiculobullous, immunofluorescence, Pemphigus

INTRODUCTION

The vesiculobullous disorders are characterized by presence of vesicles or bullae at any level within the epidermis or at the dermo-epidermal junction.[1] The autoimmune vesiculobullous disorders express pathogenic autoantibodies directed against target antigens which are involved in either cell to cell adhesion within the epidermis or adhesion of stratified squamous epithelium to dermis or mesenchyme.[2] Histopathological assessment indicates the site and level of blister within skin, site shape and size of bulla along with epidermal and dermal changes. It also elucidates the pathogenic mechanism underlying the bullous disorders.[3] The greatest diagnostic accuracy is attained by correlating the clinical and histopathological findings.[4]

MATERIALS AND METHODS

The present study was conducted in Department of Pathology, GMC Aurangabad from January 2021 to June 2022. A total 48 cases presenting with an intact or ruptured vesicle or bullae were included. The relevant clinical history and pathologic findings were recorded. All patients were examined by dermatologist and biopsy was performed. The obtained biopsies were processed by routine paraffin embedding technique and sections stained with Haematoxylin and Eosin and were taken for microscopic examination.

RESULTS

In present study, most common age of presentation in Pemphigus vulgaris was 31-40 years [26.92%] followed by 11-20 years [23.07%]. Bullous pemphigoid and Pemphigus foliaceus presented commonly in the age group of 61-70 years [40%] and 11-20 years [50%] respectively. Females outnumbered the males with male to female ratio 1:1.08. Pemphigus Vulgaris, Pemphigus foliaceous, Dermatitis Herpetiformis and Sub corneal pustular dermatosis showed equal cases in male and female. Bullous pemphigoid and Hailey Hailey disease showed male predominance.

In this study, 77.08% cases presented with blisters. 84.61% cases of Pemphigus vulgaris, all cases of Bullous pemphigoid and Pemphigus foliaceous showed blisters. Papule was prominent primary lesion in Hailey Hailey disease, Dariers disease, Linear IgA dermatosis, Sub corneal pustular dermatosis and Bullous morphea.

In 50% cases of Pemphigus vulgaris, burning sensation was chief complaint followed by itching seen in 15.38% cases. Itching was the most common symptom seen in Bullous pemphigoid in 60% and in all cases of Hailey Hailey disease.

In present study 56.25% of cases showed erythematous base. 53.84% Pemphigus vulgaris, 60% Bullous pemphigoid and all cases of Dermatitis Herpetiformis had erythematous base. Nikolsky's sign was present in 58.33% cases, most common in Pemphigus vulgaris and Bullous pemphigoid with 76.92% and 80% cases respectively. Bulla spread sign was negative in 72.91% of total cases.

Most common site involved was all over the body [62.5%]. Next common were seen over limbs [10.41%] followed by trunk, back [6.25%] and groin [4.16%]. Oral mucosa involvement was seen in 61.53% cases of Pemphigus Vulgaris followed by Bullous pemphigoid in 40% cases.

In present study, crust was seen in 75% cases of Pemphigus foliaceus, 42.30% of Pemphigus Vulgaris, 40% of Bullous Pemphigoid. Erosion was present in all cases of Pemphigus foliaceus, 60% of Bullous pemphigoid and 46.15% of Pemphigus vulgaris. Pigmentation was noted in all cases of Dermatitis Herpetiformis and Dariers disease and 66.66% of Hailey Hailey disease.

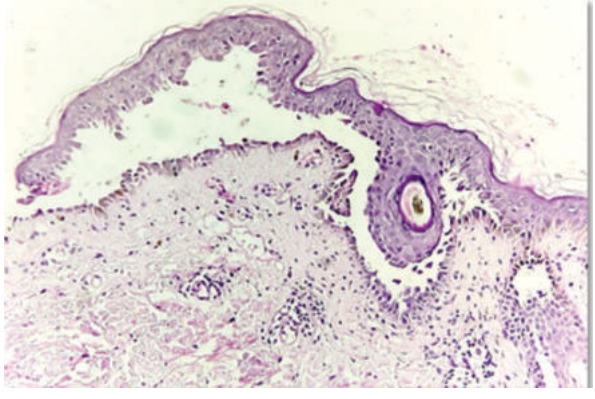

Fig.1: Pemphigus vulgaris showing suprabasal blister containing acantholytic cells and row of tombstones appearance.

Table 1: Distribution Of Cases

Diagnosis	Frequency	Percentage
Pemphigus vulgaris	26	54.16%
Bullous pemphigoid	5	10.41%
Pemphigus foliaceus	4	8.33%
Hailey Hailey disease	3	6.25%
Dermatitis Herpetiformis	2	4.16%

Sub corneal pustular dermatosis	2	4.16%
Dariers disease	1	2.08%
Linear IgA dermatosis	1	2.08%
Epidermolysis bullosa simplex	1	2.08%
IgA Pemphigus	1	2.08%
Bullous morphea	1	2.08%
Sweet's syndrome	1	2.08%
Total	48	100%

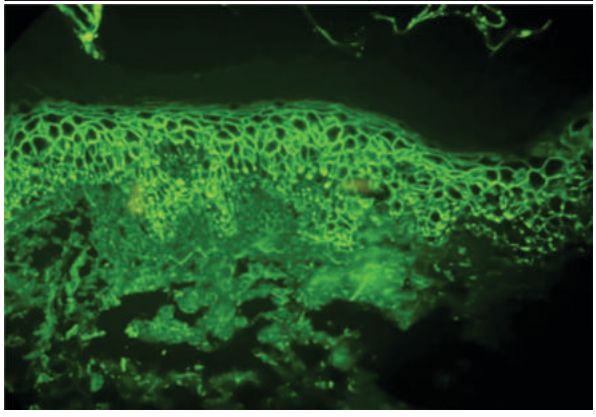

Fig.2: Pemphigus vulgaris showing strong positivity for IgG in intercellular region in epidermis (DIF,40X)

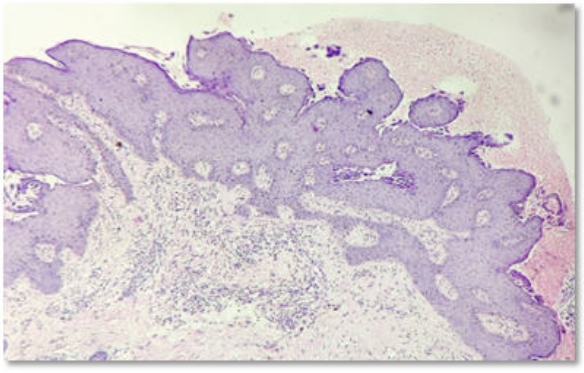

Fig.3: Pemphigus foliaceous showing subcorneal blister with haemorrhage and dermis showing oedema and lymphocytic infiltrates.

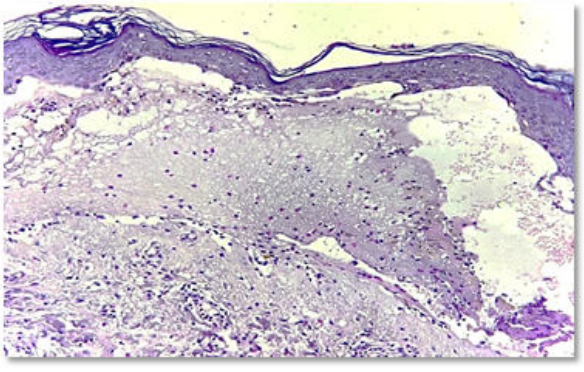

Fig.4: Bullous pemphigoid showing subepidermal blister containing eosinophils and lymphocytes.

DISCUSSION

In present study Pemphigus vulgaris ranged from 31-40 years and Bullous pemphigoid most common age was 61-70 years similar to Kumar SS et al[1].

Pemphigus vulgaris showed suprabasal bulla in 88.46%, Hyperkeratosis in 15.38%, Vesicle formation brought about by acantholysis in 19.23% cases. Presence of acantholytic cells in the epidermis as well as in the bulla is a characteristic feature seen in 76.92%, row of tombstone appearance was seen in 80.76% cases which is also regarded a hallmark of the disease, Bullous cavity showed inflammatory infiltrate in 65.38% cases. This is concordant with Shushruta Mohanty et al[3]. However, 30.76% cases showed neutrophilic infiltrate and 34.61% cases showed absent inflammatory cells in blister cavity.

Bullous pemphigoid showed subepidermal blister in all cases. Inflammatory infiltrate in the bullous cavity in 80% and in dermis in 60% cases similar to Chandramohan Kudligi et al[2]. Inflammatory infiltrate was mixed in 40% and eosinophilic in 20% cases.

75% of Pemphigus foliaceous cases showed subcorneal bulla, acantholysis, acanthocytes and inflammatory infiltrate in bullous cavity comparable to Shushruta Mohanty et al[3].

Hailey Hailey disease showed suprabasal clefting in 33.33% cases along with widespread acantholysis of the epidermis showing a characteristic dilapidated brick wall appearance similar to Shushruta Mohanty et al[3].

Dermo-epidermal junction separation, papillary microabscess and neutrophilic infiltration was seen in both cases of Dermatitis Herpetiformis identical to Chandramohan Kudligi et al[2].

Both cases of sub corneal pustular dermatosis showed subcorneal bulla containing neutrophils similar to Thejasvi et al[6].

Dariers disease showed hyperkeratosis, parakeratosis, acantholysis, formation of suprabasilar clefting and degenerated dyskeratotic keratinocytes termed as corps ronds and grains analogous to Shekhawat Pratibha et al[5].

Linear IgA dermatosis showed dermoepidermal junction bulla with uniform infiltration by lymphocytes, polymorphs with concentration along dermal papillae similar to Thejasvi et al[6].

Epidermolysis bullosa simplex showed intraepidermal blister containing inflammatory infiltrate of neutrophils, lymphocytes and eosinophils. Additionally, basal cell vacuolization and degenerated keratinocytes were seen comparable to Ashutosh Kumar et al[4].

IgA Pemphigus revealed intraepidermal blister containing acantholytic keratinocytes with neutrophils similar to T. Hashimoto et al[7].

Bullous morphea showed atrophic, hyperkeratotic, spongiotic epidermis with subepidermal blister containing erythrocytes. Also showed thickened, homogeneous, sclerotic, deeply eosinophilic collagen bundles. Subepidermal edema and perivascular lymphoplasmacytic infiltrates were present in the dermis similar to Fernandez-Flores et al[8].

Sweet's syndrome showed dermoepidermal junction blister along with dense neutrophilic infiltration and edema similar to Casarin Costa et al[9].

In present study, overall clinicopathological correlation was found in 87.5% cases, in consensus with Dr.Umang Bhargava et al[10] (86.67%).

Table 2: Epidermal Changes

Diagnosis	Tomb stone appearance	Hyperkeratosis	Acantholysis	Dyskeratosis	Acanthocytes
Pemphigus vulgaris	21 (80.76%)	4 (15.38%)	5 (19.23%)	1 (3.84%)	20 (76.92%)
Bullous pemphigoid	0	1(20%)	0	0	0
Pemphigus foliaceus	0	0	3 (75%)	3(75%)	3(75%)
Hailey Hailey disease	0	3(100%)	1 (33.33%)	3(100%)	3(100%)
Dermatitis Herpetiformis	0	1(50%)	1(50%)	0	0
Sub corneal pustular dermatosis	0	1(50%)	1(50%)	0	0
Dariers disease	0	1(100%)	1(100%)	1(100%)	0

Linear IgA dermatosis	0	0	0	0	0
Epidermolysis bullosa simplex	0	1(100%)	1(100%)	0	0
IgA Pemphigus	0	0	0	0	1(100%)
Bullous morphea	0	1(100%)	0	0	0
Sweet's syndrome	0	0	0	0	0

Table 3: Dermal Changes

Diagnosis	Dermal edema	Papillary microabsences	Melanin incontinence	Dermal inflitration	Perivarscular infiltration	Peridenxal infiltration
Pemphigus vulgaris	4 (15.38%)	0	4(15.38%)	10(38.46%)	12(46.15%)	9(34.61%)
Bullous pemphigoid	2(40%)	0	0	3(60%)	3(60%)	0
Pemphigus foliaceus	3(75%)	0	1(25%)	4(100%)	3(75%)	1(25%)
Hailey Hailey disease	0	0	0	2(66.66%)	2(66.66%)	2(66.66%)
Dermatitis Herpetiformis	0	2 (100%)	0	2(100%)	1(50%)	0
Sub corneal pustular dermatosis	0	0	0	2(100%)	2(100%)	2(100%)
Dariers disease	0	0	1(100%)	1(100%)	0	0
Linear IgA dermatosis	1(100%)	0	0	1(100%)	1(100%)	0
Epidermolysis bullosa simplex	0	0	1(100%)	1(100%)	1(100%)	0
IgA Pemphigus	1(100%)	0	1(100%)	1(100%)	1(100%)	1(100%)
Bullous morphea	1(100%)	0	0	1(100%)	1(100%)	1(100%)
Sweet's syndrome	1(100%)	0	0	1(100%)	1(100%)	1(100%)

CONCLUSION

Clinical examination along with histopathological examination of skin together forms an important diagnostic technique in the management of patients with vesiculobullous lesions of skin where the immunofluorescence technique is not available.

REFERENCES

1. Kumar SS, Atla B, Prasad PG, Srinivas KSS, Samantra S, Priyanka ALN. Clinical, histopathological and immunofluorescent study of vesicobullous lesions of skin. Int J Res Med Sci 2019;7:1288-95
2. Kudligi C, Thirunavukkarasu A, Kuntoji V, Bhagwat PV, Rathod R, Girian S, Sharma A, Andanappanavar V. Clinical and pathological study of autoimmune vesiculobullous disorders. Journal of Pakistan Association of Dermatologists. 2017;27(3):270-8
3. Mohanty S, Mohanty L, Pujari S, Raman S, Gochhait D, Jena S, Sharma G. A Prospective Study of Clinical, Histopathological and Direct Immunofluorescence Spectrum of Cutaneous Vesiculobullous Lesions. Int J Med Res Prof. 2017 Sept; 3(5):335-46
4. Ashutosh Kumar, Ankita Mittal, Rashmi Chauhan, Faiyaz Ahmad, Seema Awasthi, S. Dutta. Histopathological Spectrum of Vesiculobullous Lesions of the Skin: Study at a Tertiary Care Hospital. Int J Med Res Prof. 2018 July; 4(4):250-55
5. Shekhawat Pratibha, Yadav Ajay, Udawat Hema, Ranawat Chandrajeet Singh, Kotia Suman. Clinico-histopathological Study of Vesiculobullous Lesions of the Skin at Tertiary Care Centre. Journal of medical science and clinical research. ISSN (e)-2347-176x ISSN (p) 2455-0450
6. Thejasvi K, Shivarudrappa A, Dayananda S. Histopathological Study of Vesiculobullous lesions of skin. Int J Biol Med Res. 2015;6(2):4966-72
7. Hashimoto T, Yasumoto S, Nagata Y, Okamoto T, Fujita S. Clinical, histopathological and immunological distinction in two cases of IgA pemphigus. Clin Exp Dermatol. 2002 Nov;27(8):636-40
8. Fernandez-Flores A, Gatica-Torres M, Tinoco-Fragoso F, García-Hidalgo L, Monroy E, Saeb-Lima M. Three cases of bullous morphea: histopathologic findings with implications regarding pathogenesis. J Cutan Pathol. 2015 Feb;42(2):144-9
9. Casarin Costa JR, Virgens AR, de Oliveira Mestre L, Dias NF, Samorano LP, Valente NYS, Festa Neto C. Sweet Syndrome: Clinical Features, Histopathology, and Associations of 83 Cases. J Cutan Med Surg. 2017 May/Jun;21(3):211-216
10. Dr.Umang Bhargava, Dr.Garima Dundy, Dr.Vishal Agrawal Histopathological Spectrum of Vesiculobullous Lesions of Skin: A Hospital Based Cross Sectional Study Indian Journal Of Applied Research, Volume : 6 , Issue : 5, May 2016