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Histopathological Spectrum of Vesiculobullous Lesions of the Skin at Tertiary Care Centre

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A B S T R A C T

Background*:** Vesiculobullous lesions present with fluid filled cavity within or beneath the epidermis or mucous membrane or both. Various type of pathologic process includes inflammatory, autoimmune, infective, drug induced or genetic causes can lead to development of vesiculobullous eruption. ***Methods*:** In this study 65 clinically diagnosed cases of vesiculobullous lesions were included from January -2019 to December -2022. Clinical data like age, sex, duration & site of lesion, history of any disease or drug, any significant family or personal history noted. Punch biopsy has been taken and after processing and staining with haematoxylin-eosin it was examined under the microscope. ***Results*:**Vesiculobullous lesions were seen among 5 years to 92 years of age. Out of 65 cases 35 were male and 30 females. In present study Pemphigus Vulgaris was most common -16 cases (24.6%) followed by Bullous Pemphigoid -13 cases (20%). 10 cases of Pemphigus Foliaceus, 8 cases of Steven Johnson Syndrome & 4 cases each of Hailey Hailey disease & Linear IgA dermatosis were reported. 3 cases each of Dermatitis herpetiform&Darier's disease were also reported – less common lesion include Sub corneal pustulardermatosis, Bullous fixed drug reaction (1 case each). In 2 cases of vesiculobullous lesions further Direct Immunofluorescence technique (DIF) required to confirm accurate diagnosis.Conclusion*:** Histopathological examination along with clinical correlation is required to confirm the diagnosis of vesiculobullous lesions and in some cases, direct immunofluorescence is required for final diagnosis.

Keywords: Vesiculobullous lesion, Punch biopsy, skin, Pemphigus, Vesicles, bullae.

INTRODUCTION

Vesicles and bullae are fluid filled cavities formed within or beneath the epidermis. They are the primary morphological patterns of skin reaction to various external and internal stimuli. Vesicles are <0.5 cm and bullae >0.5 cm in diameter. Bullous Pemphigoid and Pemphigus Vulgaris are mainly autoimmune in nature while for other vesiculobullous lesions inflammatory, infective, drug induced or genetic mechanisms are responsible. There is wide variety of vesiculobullous disorders, some of can be debilitating and even fatal. Some have serious sequel which requires early treatment and intervention. Greatest diagnostic accuracy is obtained by correlating clinical and histological findings. Bullous lesions are classified based on site, shape and size and changes in epidermis and dermis. Histopathological evaluation includes blister separation planes, mechanism of blister formation, character of inflammatory infiltrate, type of immune deposits etc. Based on site, classified as suprabasal, intraepidermal, subcorneal and subepidermal. Sometimes, with histopathological study, Direct immunofluorescence antibody testing is required. It is a gold standard for confirmation as many lesions have almost similar microscopic features. Skin punch biopsy is safe, simple, inexpensive and minimally invasive OPD procedure, causing minimal discomfort to patient. This study was carried out to correlate clinical and histopathological findings using light microscopy in vesiculobullous lesions to make a diagnosis.

Material and Methods

Retrospective and prospective study was conducted in the department of Pathology at Surat Municipal Institute of Medical Education and Research. In this study, 65 clinically diagnosed cases of vesiculobullous lesions were included from January -2019 to December -2022. Clinical data like age, sex, duration & site of lesion, history of any disease or

drug, any significant family or personal history noted. Punch biopsy of intact blister taken in skin department and received in pathology department in 10% formalin, routine tissue processing done and slides were stained with Haematoxylin & Eosin. Histopathological examination was done to see level of cleavage, mechanism of bulla formation, character of inflammatory infiltrate & other changes in epidermis & dermis.

Inclusion Criteria: All skin biopsies of patients of vesiculobullous lesions irrespective of age, sex, religion, specific complaints.

Exclusion Criteria: Poorly preserved skin biopsy, inadequate biopsy, lack of history were excluded from the study.

OBSERVATION AND RESULTS

This study was conducted in the duration of January-2019 to December-2022. During this period, biopsy of 65 cases clinically favoringvesiculobullous lesions received and examined along with data of age, sex, site, etc. Vesiculobullous lesions were seen among 5 years to 92 years of age. Most frequency in the age group of 31-40 years and 51-60 years and least frequent was in age group of <10 years. Out of 65 cases 35 were male and 30 females. Mucosal involvement was present in 16% cases. Duration of lesions was commonly 1-6 months in the patients. Most common lesion was vesiculobullous (21%) followed by vesicles (18%), bullae (16%) and hyperpigmentation/macerated skin (10%). Most common sites were extremities and trunk followed by face, back, neck, axilla and scalp.

In present study Pemphigus Vulgaris was most common -16 cases (24.6%) having mean age of 45-46 years showing generalized involvement. Level of blister was suprabasal followed by subcorneal and intraepidermal. Predominant inflammatory cells were neutrophils and lymphocytes.

Bullous Pemphigoid was second most common consisting of -13 cases (20%). Mean age of 57 years with most common site trunk and limbs. Lesions were mainly subepidermal followed by subcorneal and intraepidermal with inflammatory infiltrate of neutroplis, lymphocytes and eosinophils.

Pemphigus Foliaceus consists of 10 cases, having mean age of 36 years with lesions at intraepidermal followed by subcorneal level. 8 cases of Steven Johnson Syndrome noted having lesions at intraepidermal followed by subcorneal followed by subepidermal level. 4 cases each of Hailey Hailey disease having lesions at subcorneal level & Linear IgA dermatosis at level of subepidermal followed by subcorneal level. 3 cases each of Dermatitis herpetiform&Darier's disease were also reported – less common lesion include Sub corneal pustulardermatosis, Bullous fixed drug reaction (1 case each). In 2 cases of vesiculobullous lesions further Direct Immunofluorescence technique (DIF) required to confirm accurate diagnosis.

Age wise distribution

Age group	Frequency
≤10 years	01
11-20 years	02
21-30 years	06
31-40 years	13
41-50 years	09
51-60 years	13
61-70 years	08
71-80 years	08
≥80 years	05
Total	65

Table-1: Shows age wise distribution of the patients showing majority of the patients in 4th and 6th decades

Table-2: Shows higher male: female ratio

Sex	Frequency
Male	35
Female	30
Total	**65**

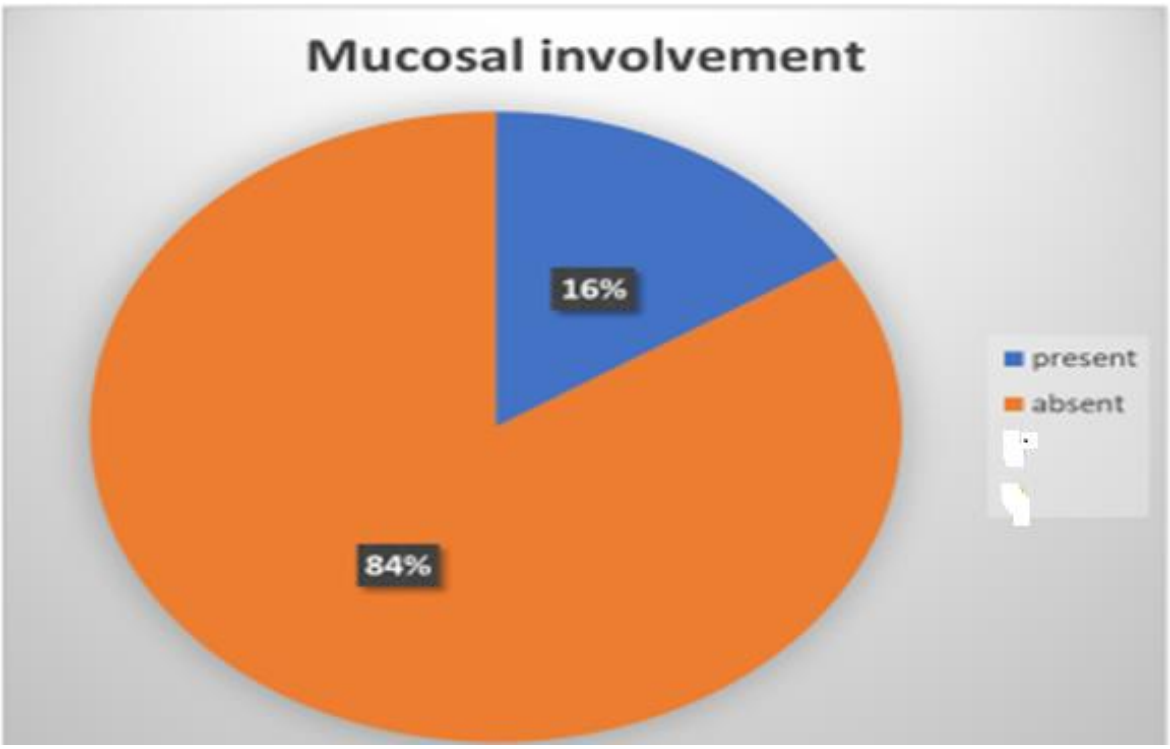

Chart shows mucosal involvement

Table-3: Shows duration of the lesions and type of lesions

Duration

Duration	Frequency
≤1 week	08
>1 week-1 month	32
>1 month-6 months	11
>6 months-1 year	04
>1 year-5 years	07
>5 years	03

Type of lesions

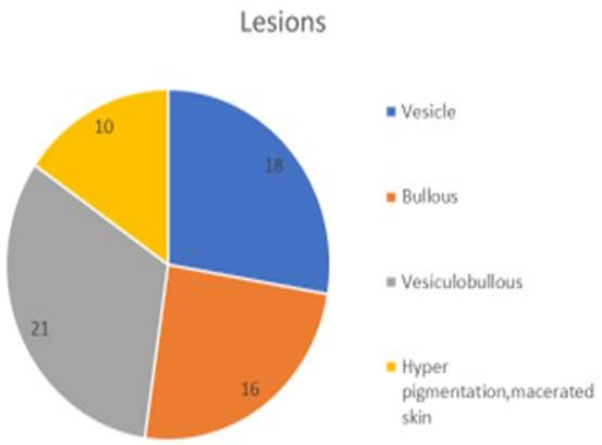

Table-4: Shows Site of Lesions

Site of Lesions	Frequency
Uper Limb	34
Lower Limb	32
Back	13
Scalp	05
Trunk	31
Face	17
Neck	11
Axilla	10

Table-5: Shows frequency of cases

Disease	Number of cases	Percentage%
Pemphigus Vulgaris	16	24.61
Bullous Pemphigoid	13	20
Pemphigus Foliaceus	10	15.3
Steven Johnson Syndrome	08	12.3
Hailey Hailey Disease	04	6.1
IgA Dermatosis	04	6.1
Dermatitis herpetiformis	03	4.6
Darier's disease	03	4.6
Subcorneal pustular dermatosis	01	1.5
Bullous fixed drug reaction	01	1.5
Vesiculobullous lesion/Inconclusive	02	3.07
Total	65	

Table-6: Shows cleavage of lesion on a histopathology slide

Lesion	Suprabasal	Intraepidermal	Subcorneal	Subepidermal
Pemphigus Vulgaris	16	1	3	
Bullous Pemphigoid		1	2	13
Pemphigus Foliaceus		9	7	
Steven Johnson Syndrome		4	3	1
Hailey Hailey Disease			4	
IgA Dermatosis			1	3
Dermatitis herpetiformis				3
Darier's disease			1	
Subcorneal pustular dermatosis		1		
Bullous fixed drug reaction				1
Vesiculobullous lesion/Inconclusive		2		

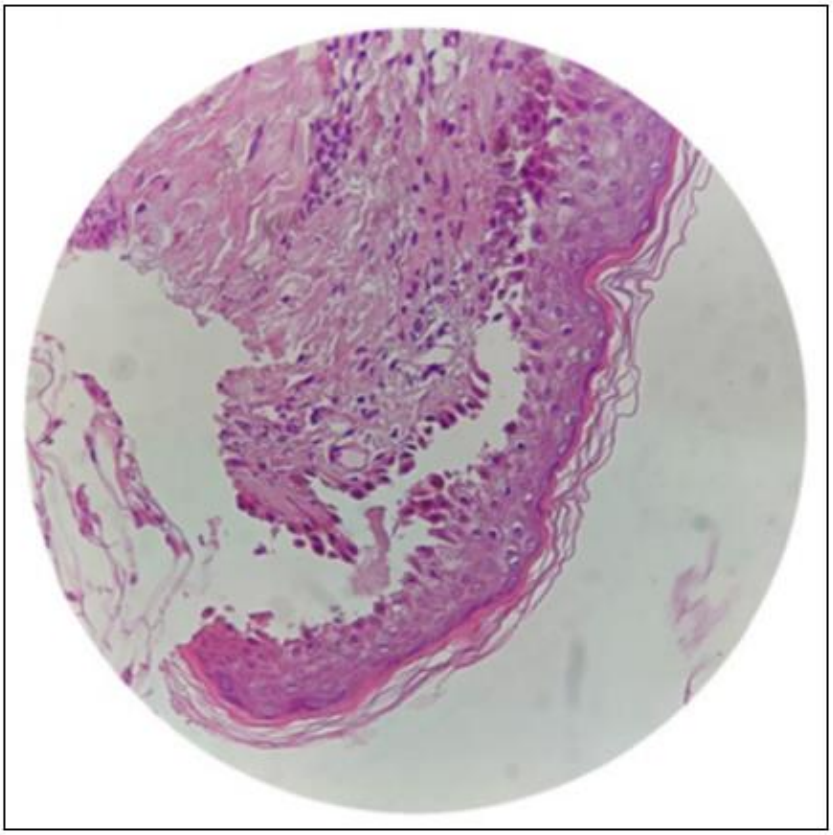

Figure 1: Suprabasal Intraepidermal Separation in Pemphigus Vulgaris (40X Magnification, H & E Stain)

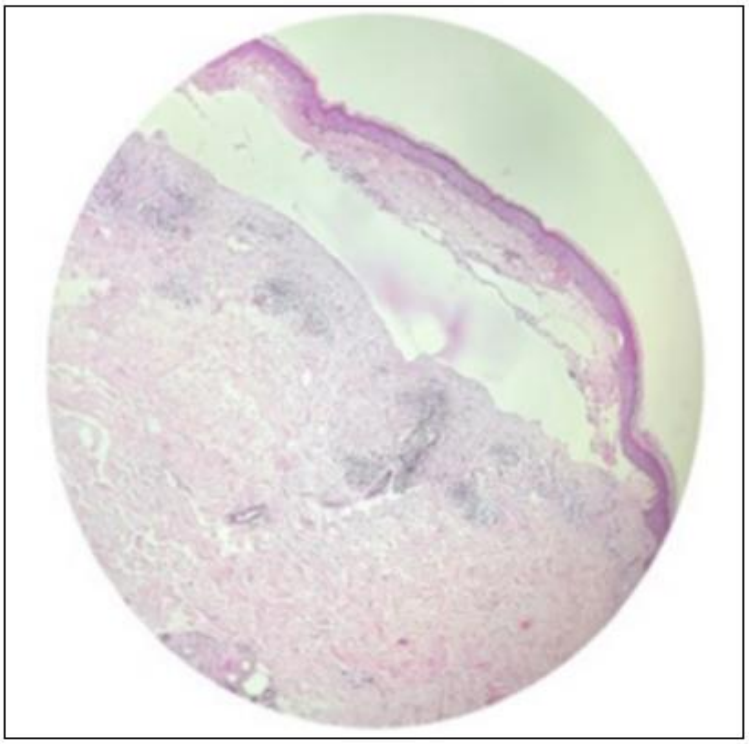

Figure 2: Sub Epidermal Separation in Bullous Pemphigoid (10X Magnification, H & E Stain)

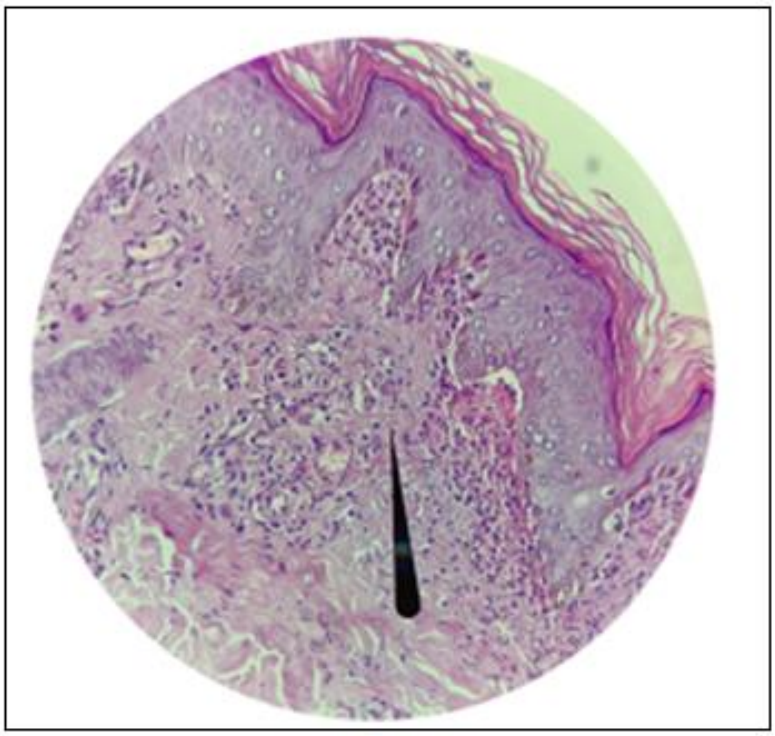

Figure 3: Shows Micro Abseesses in Dermatitis Herpetiformis (40X Magnification, H & E Stain)

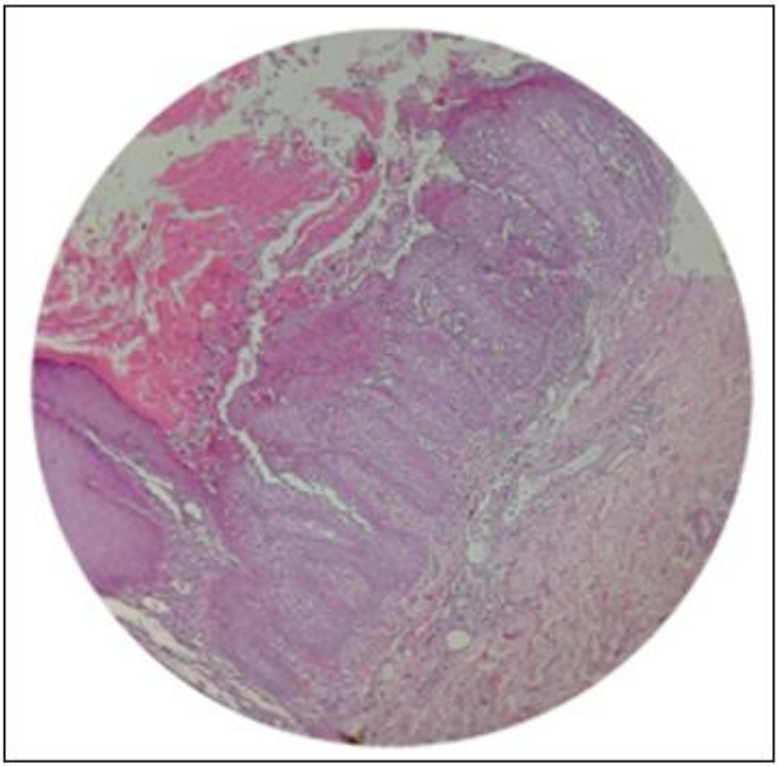

Figure 4: Shows Hailey Hailey disease (10X Magnification, H & E Stain)

CONCLUSION

Skin biopsy is easy and inexpensive procedure used for diagnosis for many skin lesions. Vesiculobullous lesions are important to distinguish each of entities and separate them for appropriate management and treatment. Both clinical and histopathological examination is must to confirm the diagnosis but in few cases, Direct immunofluorescence is recommended for accuracy.

REFERENCES

- Eduardo Calonje, J. E., Brenn, T., Laser, A. J., & Billings, S. (2012). Mckee's Pathology of skin. 4th edn. Elesvier; 2012.
- Wojnarowsk, F., Venning, V. A., Fine, J. D., & Burge, S. M. (2010). Immunobullous diseases and Genetic blistering diseases. In: Burns, T., Breathnach, S., Cox, N., Griffiths, C., eds. Rook's Textbook of Dermatology: 8th edn. Caltron: Blackwell; 2010.
- Kumar, A., Mittal, A., Chauhan, R., Ahmad, F., Awasthi, S., &Dutta, S. (2018). Histopathological spectrum of vesiculobullous lesions of skin: study at a tertiary care hospital. *Int J Med Res Prof, 4*(4), 250-255.
- Patel, P. R., Patel, P. B., &Chiplonkar, S. G. (2014). Histopathological study of vesiculobullous lesions of the skin: a study at tertiary care hospital. *Int J Med Sci Public Health, 3*(6), 738-740.
- Cotran, R. S., Kumar, V., & Robbins, S. L. (2015). Robbins and Cotran's Pathologic basis of Disease. 9th edn. Philadelphia: Saunders; 2015.
- Karattuthazhathu, A. R., Vilasiniamma, L., &Poothiode, U. (2018). A study of vesiculobullous lesions of skin. *Nat Lab Med*, 7, 1-6.
- Rokde, C. M., Damle, R. P., &Dravid, N. V. (2019). HistomorphologicalStudyofVesiculobullous Lesions of Skin.*Ann Pathol Lab Med, 6*(1).
- Hong, W. U., Brian, S., & Terence, J. H. (2005). Non-infectious vesiculobullous and vesciculopustular diseases. 9th edn. In: David, E., George, F. M., Rosaliets, Bernett, L. J. Jr, eds. Levers Histopathology of the Skin. India: Lippincott Williams and Wilkins; 243-245.
- Weedon, D. (2016). The vesiculobullous reaction pattern. In: Patterson, J. W., ed. Weedon's Skin Pathology. 4th edn. London: Churchill Livingstone Elsevier; 135-188.
- Deepti, S. P., Sulakshana, M. S., Manjunatha, Y. A., &Jayaprakash, H. T. (2015). A histomorphological study of bullous lesions of skin with special reference to immunofluorescence. *Int J Curr Res Acad Rev, 3*(3), 29-51.
- Pavani, M., Harika, P., &Deshpande, A. K. (2020). Clinicopathological study of vesiculobullous lesions of the skin and the diagnostic utility of immunofluorescence. *Int J ClinDiagPathol, 3*(1), 252-257.
- Kumar, S. S., Atla, B., Patnala, G. P., SaratSrinivas, K. S., Samantra, S., &Priyanka, A. L. N. (2019). Clinical, histopathological and immunofluorescent study of vesicobullous lesions of skin. *Int J Res Med Sci, 7*(4), 1288-1295.