



ISSN (P): 2617-7226  
ISSN (E): 2617-7234  
[www.patholjournal.com](http://www.patholjournal.com)  
2024; 7(3): 120-125  
Received: 27-05-2024  
Accepted: 28-06-2024

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## Histopathological study of vesiculobullous lesions of skin in a tertiary care teaching hospital

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**DOI:** <https://doi.org/10.33545/pathol.2024.v7.i3b.594>

### Abstract

**Introduction:** Vesiculobullous diseases are a group of disorders in which primary lesion is a vesicle or a bulla on the skin or mucous membrane or both. Vesicles and bullae are fluid filled cavities formed within or beneath the epidermis. They may occur in many dermatoses, which include various inflammatory, infective, autoimmune, drug induced as well as genetic conditions. Histopathology of skin biopsies is a useful technique in the investigation of various skin diseases, out of which vesiculobullous lesions form one of the predominant groups. Histological study is one of the most valuable means of diagnosis in dermatology. The greatest diagnostic accuracy is obtained by correlating the clinical and histological findings.

**Aims and Objectives:** To describe the spectrum of vesiculobullous lesion in skin and mucous membrane, age and sex wise distribution, to describe histopathological finding in vesiculobullous lesion and to conclude importance of histopathological examination for diagnosis and management.

**Methods:** A histopathological analysis of 62 skin biopsy which diagnosed after 24 hour formalin fixation of 4 mm<sup>2</sup> punch biopsy than dehydration, clearing, embedding in paraffin wax, blocks made, section were cut and stain H & E stain done, after microscopy diagnosed under vesiculobullous spectrum of skin disease is include in present study.

**Results:** Among 62 cases analyzed, specific histopathological diagnosis was made in all of cases. Pemphigus Vulgaris were seen in 48.4% of cases, whereas 17.8% of cases were Bullous pemphigoid. Pemphigus Vulgaris was found to be the most common Vesiculobullous lesion.

**Conclusion:** Because of Skin Biopsy we can conduct in OPD with minimal interventional precaution. With the help of histopathological examination and correlation with clinical examination feature it can be helpful to guide clinician toward diagnosis, management of patient.

**Keywords:** Vesiculobullous, histopathology, pemphigus vulgaris.

### Introduction

Vesiculobullous diseases are a group of disorders in which primary lesion is a vesicle or a bulla on the skin or mucous membrane or both.

Vesicles and bullae are fluid filled cavities formed within or beneath the epidermis. They may occur in many dermatoses, which include various inflammatory, infective, autoimmune, drug induced as well as genetic conditions. Vesicles and bullae (large vesicles) are divided according to their location into subepidermal and intraepidermal, which in turn may be supra basal or sub corneal.

Histopathology of skin biopsies is a useful technique in the investigation of various skin diseases, out of which vesiculobullous lesions form one of the predominant groups.

Histological study is one of the most valuable means of diagnosis in dermatology. The greatest diagnostic accuracy is obtained by correlating the clinical and histological findings.

### Aims and Objectives

To describe the spectrum of vesiculobullous lesion in skin and mucous membrane. To describe age and sex wise distribution of patient with vesiculobullous lesion. To summarized distribution of different entity which defined under vesiculobullous lesion spectrum. To describe histopathological finding in vesiculobullous lesion. To conclude importance of histopathological examination for diagnosis and management.

**Materials and Methods**

This is an observational study over period of May 2022 to May 2024 in the Department of Pathology at tertiary care teaching hospital. A histopathological analysis of 62 skin biopsy which diagnosed after 24hour formalin fixation of 4 mm<sup>2</sup> punch biopsy than dehydration, clearing, embedding in paraffin wax, blocks made, section were cut and stain H & E stain done, after microscopy diagnosed under vesiculobullous spectrum of skin disease is include in present study.

**Results**

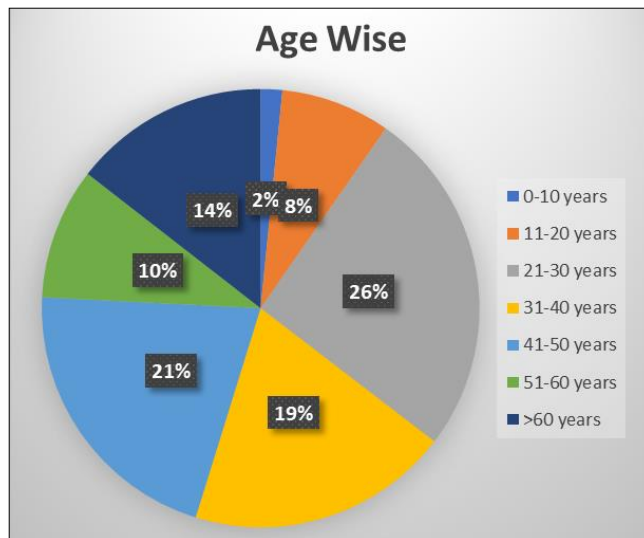
In present observation study 62 cases of vesiculo-bullous lesions of the skin is diagnosed on basis of histopathological examination. Among 62 cases analyzed, specific histopathological diagnosis was made in all of cases. Pemphigus Vulgaris were seen in 48.4% of cases, whereas 17.8% of cases were Bullous pemphigoid. Pemphigus Vulgaris was found to be the most common Vesiculobullous lesion. Maximum numbers of cases were seen in age group of 21-30 years which comprises 25.7% cases and second common age group was 41-50 years which comprises 21% cases

**Aim**

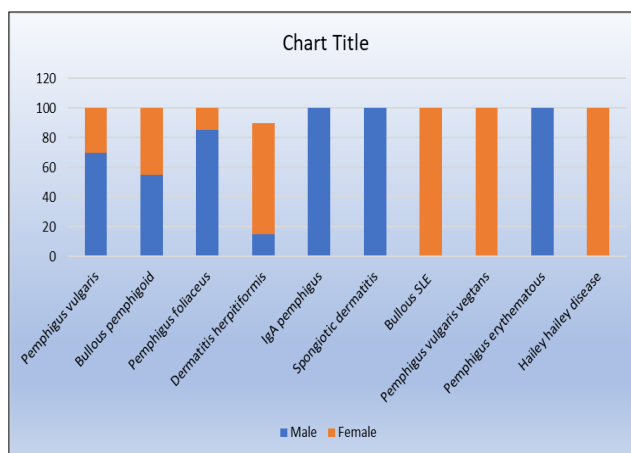
To analyze the IHC expression of TPO and CK19 in both benign and malignant thyroid nodular lesions. To Establish the diagnostic accuracy of CK-19 and TPO, as well as their association, in differentiating benign and malignant thyroid nodular lesions. To determine and specificity of TPO and CK19 in differentiating thyroid nodular lesions.

**Table 1:** Frequency of vesiculo-bullous diseases

Sr. No	Diagnosis	No of cases	% of distribution
1	Pemphigus vulgaris	30	48.4
2	Bullous pemphigoid	11	17.8
3	Pemphigus foliaceus	7	11.2
4	Dermatitis Herpetiformis	7	11.2
5	IgA pemphigus	2	3.22
6	Spongiotic Dermatitis	1	1.61
7	Bullous SLE	1	1.61
8	Pemphigus Vulgaris vegetans	1	1.61
9	Pemphigus Erythematous	1	1.61
10	Hailey hailey Disease	1	1.61
	Total	62	100



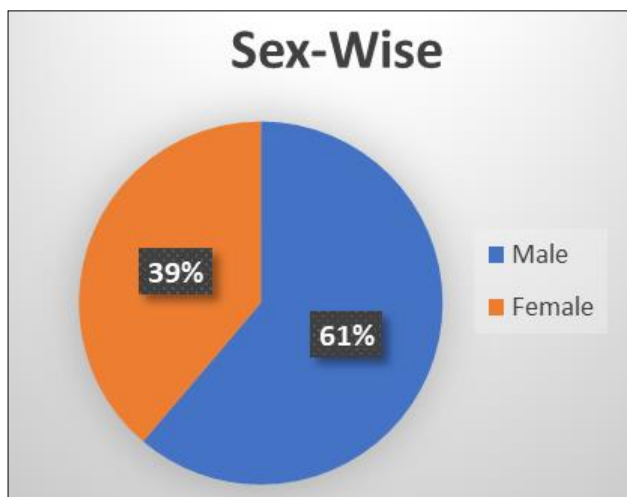
**Chart 2:** Age Wise Distribution



**Chart 3:** Frequency and gender distribution of various lesions in study

**Table 2:** Plane of separation of the lesions

Sr. No	Plane of Separation	No of cases	Percentage
1	Intra Epidermal-Suprabasal	31	50%
2	Subepidermal	23	37.1%
3	Intra Epidermal- Subcorneal	8	12.9%



**Chart 1:** Sex Wise Distribution



**Fig 1:** Gross Images of Pemphigus vulgaris mucosal surface skin surface

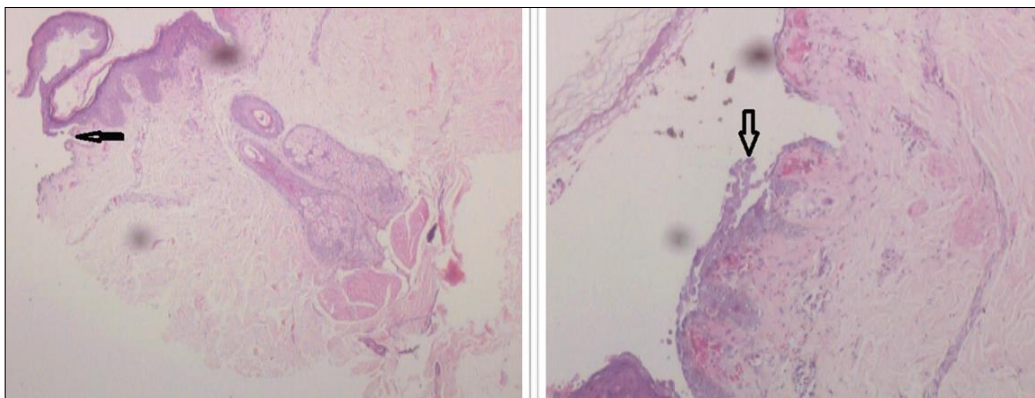
Suprabasal cleft with bullous formation (arrow).  
Suprabasal cleft with bullous formation (arrow)



**Fig 2:** Histopathological findings of Pemphigus Vulgaris

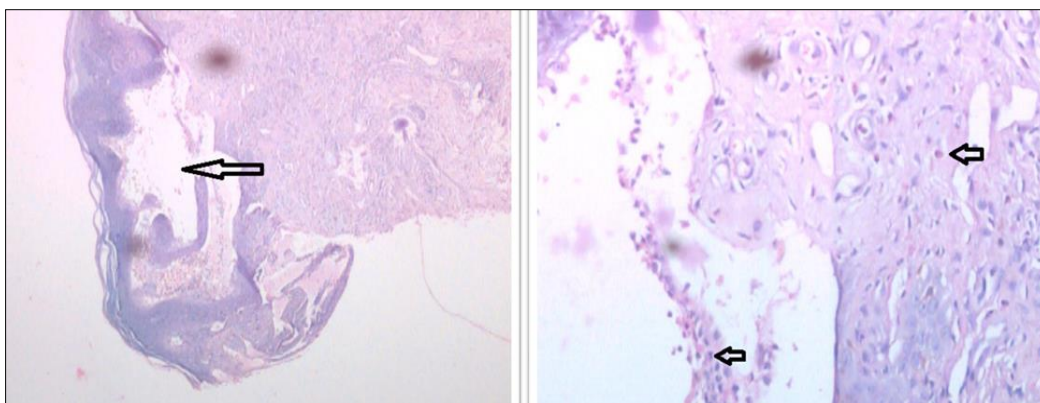


**Fig 3:** Gross findings of bullous pemphigoid tense bullae over urticarial plaques



**Fig 4:** Histopathological findings of Bullous Pemphigoid

**Subepidermal large bullous cavity plenty of eosinophils in bullous cavity and superficial dermis**



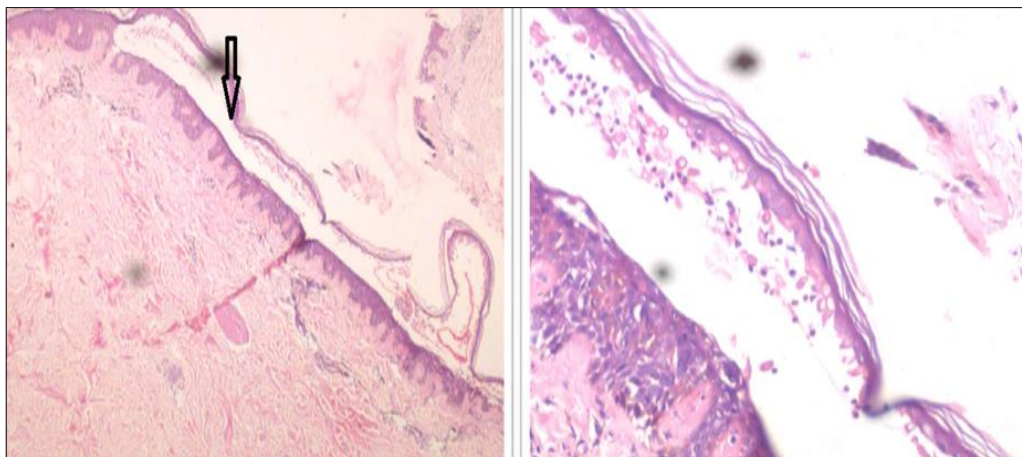
**Fig 5:** Gross findings of Pemphigus Foliaceus

**Superficial crusting and corn-flake like scales vesicles being fragile, only scale-crust morphology is evident**



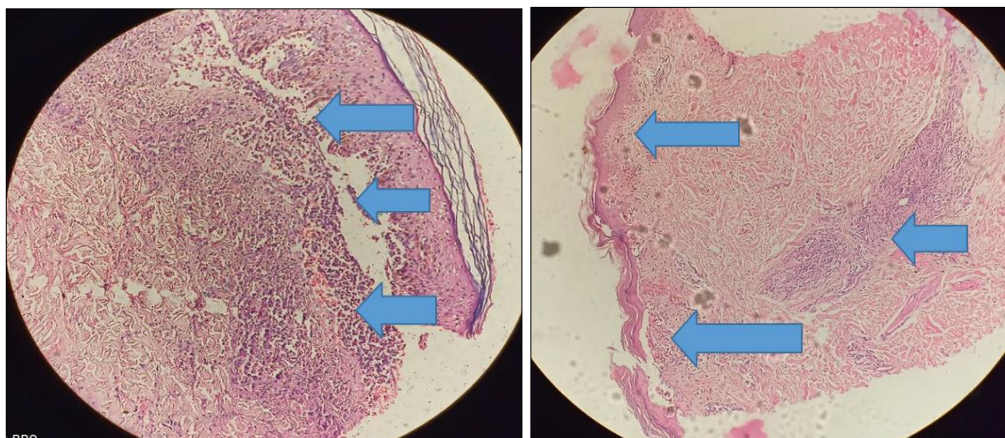
**Fig 6:** Histopathological findings of Pemphigus Foliaceus

**Pemphigus foliaceus Sub corneal flaccid bulla bullous cavity filled with neutrophils and acantholytic cells**



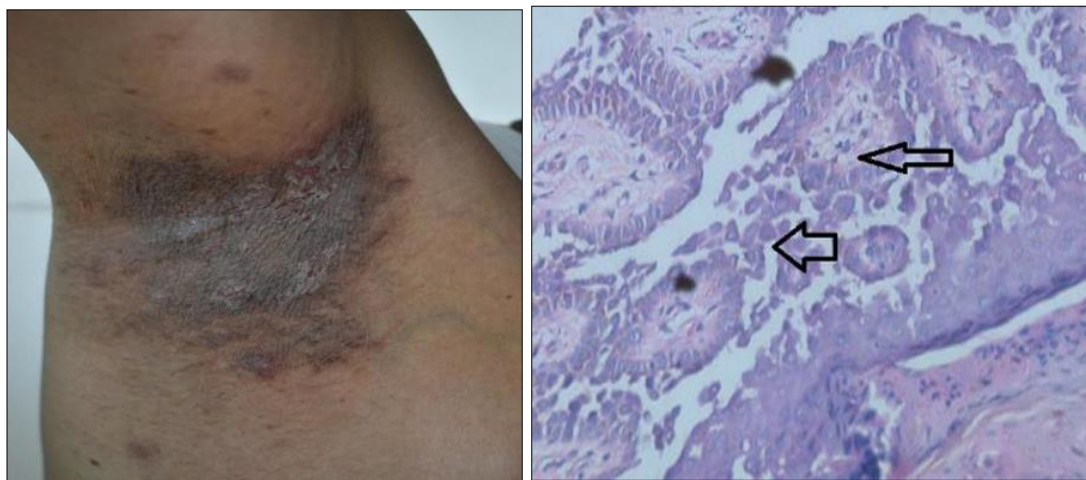
**Fig 7:** Histopathological findings of Dermatitis Herpetiformis

**Zones of subepidermal separation, dense clusters of neutrophils and scattered eosinophils fill the papillary dermis forming micro abscess**



**Fig 8:** Histopathological findings of Bullous SLE

**Loss of rete ridges and subepidermal bullae and dermal infiltration of neutrophils and lymphocytes with changes of vasculitis. Deep dermis peri appendageal heavy infiltration of inflammatory cells.**



**Fig 9:** Gross and Histopathological findings of Hailey hailey Disease

**Erythematous lesion in axilla supra basal separated villi and acantholytic cells in bullous cavity**

**Discussion**

In our present study, the maximum numbers of subjects (45.5%) were in 3rd and 4th decades. While in study by Prashant R Patel *et al.* and Ashutosh Kumar *et al.* the maximum numbers of subjects in 3rd and 4th decades and fifth decades. In present study, Male to Female ratio was 1.57:1 while in study by Prashant R Patel *et al.* there was female preponderance and female to Male ratio was 1.6:1. Ashutosh Kumar *et al.* study showed male preponderance in their study and male to female ratio was 1.18:1. In present study incidence of Pemphigus vulgaris was highest (48.4%)

followed by Bullous pemphigoid (17.8%) among all other vesiculobullous diseases. Anil Kumar *et al.*, Prashant R Patel *et al.* and Ashutosh Kumar *et al.* showed similar results with 34.30%, 54.55 and 61.4% cases of pemphigus vulgaris respectively.

While other study Thejasvi Krishna Murthy *et al.*, M Pavani *et al.*, Viraktamath Chanabasayya *et al.* showed low percentage of pemphigus vulgaris in spite of that they showed high incidence of Bullous pemphigoid. This variation may be due to geographic distribution of bullous diseases.

Sr. No	Diagnosis	Anil Kumar <i>et al.</i>	Prashant R Patel <i>et al.</i>	Ashutosh Kumar <i>et al.</i>	Thejasvi Krishnamurthy <i>et al.</i>	M Pavani <i>et al.</i>	Present study
1	Pemphigus Vulgaris	35.3%	53%	43%	18.9%	23.8%	48.4%
2	Bullous Pemphigoid	32.4%	3%	13.9%	21.6%	38%	17.8%
3	Pemphigus Foliaceus	23.5%	5.9%	5.6%	8.1%	2.4%	11.2%
4	Dermatitis Herpetiformis	-	-	5.6%	8.1%	-	11.2%
5	IgA pemphigus	-	3%	-	2.7%	4.8%	3.22%
6	Spongiotic dermatitis	-	-	-	-	-	1.61%
7	Bullous SLE	-	-	2.8%	-	-	1.61%
8	Pemphigus vulgaris vegetans	2.9%	-	4.2%	2.7%	-	1.61%
9	Pemphigus erythematous	-	5.9%	-	1.3%	-	1.61%
10	Hailey hailey disease	-	-	-	1.3%	-	1.61%
11	Others	5.9%	29.4%	24.9%	35.3%	28.5%	-

**Conclusion**

Skin Biopsy is routine process for vesiculobullous lesion. Because this procedure can be conduct in OPD with minimal interventional precaution. With the help of histopathological examination and correlation with clinical examination feature it can be helpful to guide clinician toward diagnosis, management of patient.

**Conflict of Interest**

Not available

**Financial Support**

Not available

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**How to Cite This Article**

Shelar MD, Laxmidhar S, Laxmidhar R, Shah SA, Goswami H. Histopathological study of vesiculobullous lesions of skin in a tertiary care teaching hospital. International Journal of Clinical and Diagnostic Pathology. 2024;7(3):120-125.

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