

# A Study of 75 Cases of Pemphigus in Saurashtra Region of India

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## Abstract

**Background:** A clinicopathological study of 75 cases of pemphigus was carried out at Saurashtra region of Gujarat State, India. This study was done to subtype this disease with evaluation of clinical and histopathological presentation.

**Methods:** The study was carried out in a two-year period at skin department of Guru Gobind Singh Hospital, Jamnagar. Seventy five patients of pemphigus were examined, admitted and treated. Histopathological examination was done at the department of pathology and direct immunofluorescence was advised and done at higher centers when it was needed.

**Result:** Out of 75 cases, pemphigus vulgaris constituted the single largest group of cases which made 72 (96%) cases with three (4%) cases of pemphigus foliaceus. The majority of the cases were seen in the age group of 21-60 years, with a slight female predominance. The youngest patient was 18 years while the eldest was 70 years old. Oral mucosal involvement was seen in almost all cases of pemphigus vulgaris while 7 cases of pemphigus vulgaris had mucosal involvement at other sites in addition to oral mucosal involvement. No mucosal involvement was present in cases of pemphigus foliaceus. Flaccid bullae were present in 100% of the cases. Pruritus was present in 15 cases of pemphigus vulgaris.

**Conclusion:** Most of the patients had pemphigus vulgaris followed by pemphigus foliaceus. Pemphigus is more prevalent at certain areas of Saurashtra region showing a geographic distribution (*Iran J Dermatol* 2010;13: 42-46)

**Key words:** pemphigus vulgaris, bulla, suprabasal acantholysis, subcorneal cleft, pemphigus foliaceus

## Introduction

The word pemphigus comes from pemphix, a Greek word that means blister. First demonstrated in 1943, acantholysis is the characteristic feature of the bullae of pemphigus vulgaris. It is a life-threatening autoimmune bullous disease that involves the squamous epithelia and mucous membranes, manifested as loose blisters, painful erosions and ulceration of skin and mucous membrane. IgG autoantibodies cause intraepidermal blisters as a result of acantholysis. In immunopathology, we can find circulating IgG acting against desmoglein I and III<sup>1-4</sup>.

Pemphigus has several subtypes. Pemphigus vulgaris is mostly seen in middle-aged people. It presents with large and flaccid bullae which break

easily and are seen in oral mucosa, scalp, midface, sternum and groin. Oral mucosa is characteristically involved. Histopathologically, there is characteristic formation of suprabasal clefts. There is also the appearance of the 'row of tombstone'. Positive direct immunofluorescence testing is the gold standard for diagnosis. Pemphigus foliaceus usually affects middle-aged individuals. It usually affects seboreic areas. Oral mucosa is NOT involved. Histopathology shows acantholysis in upper epidermis within or adjacent to granular layer leading to subcorneal bullae. Immunofluorescence testing shows antibodies against desmoglein I. Pemphigus erythematosus (also known as senear-usher syndrome) is a variant of pemphigus foliaceus, so called due to its resemblance to systemic lupus erythematosus. Immunofluorescence testing shows IgG antibodies in more than 75% of

**Table 1.** Districtwise distribution of the cases

DISTRICTS	CASES	Pemphigus		TOTAL(%)
		Vulgaris	Foliaceus	
JUNAGARH		38	02	40(53.3%)
RAJKOT		08		08(10.67%)
BHAVNAGAR		07		07(9.3%)
JAMNAGAR		07	01	08(10.67%)
SURENDRANAGAR		06		06(8%)
PORBANDER		03		03(4%)
AMRELI		03		03(4%)
TOTAL		72	03	75(100%)

**Table 2.** Age and sex distribution of the patients

AGE GROUPS (YEARS)	Pemphigus Vulgaris		Pemphigus Foliaceus	
	M	F	M	F
0-10	-	-	-	-
11-20	-	01	-	-
21-30	02	-	01	-
31-40	15	09	02	-
41-50	04	17	-	-
51-60	04	10	-	-
61-70	04	06	-	-

the cases and anti-nuclear antibodies in 30-80% of the patients <sup>5</sup>. Pemphigus herpetiformis is an atypical form of pemphigus that clinically resembles dermatitis herpetiformis <sup>6</sup>. It is differentiated from the classical pemphigus by pruritus and histopathological features like invariable presence of eosinophils and/or neutrophils. Drug-induced pemphigus occurs mostly due to penicillamine, captopril, and penicillin derivatives. Ig A pemphigus is seen in middle-aged or older individuals. Its most common sites are axilla and groin. It is similar to pemphigus foliaceus histopathologically. Immunofluorescence shows Ig A deposition in epidermis and upper dermis. Paraneoplastic pemphigus is associated with malignancies such as Non-Hodgkin's lymphoma, chronic lymphocytic leukemia, and thymoma. Histopathologically, suprabasal acantholysis with basal apoptosis and vacuolar interface dermatitis with or without lichenoid inflammation is seen <sup>5</sup>.

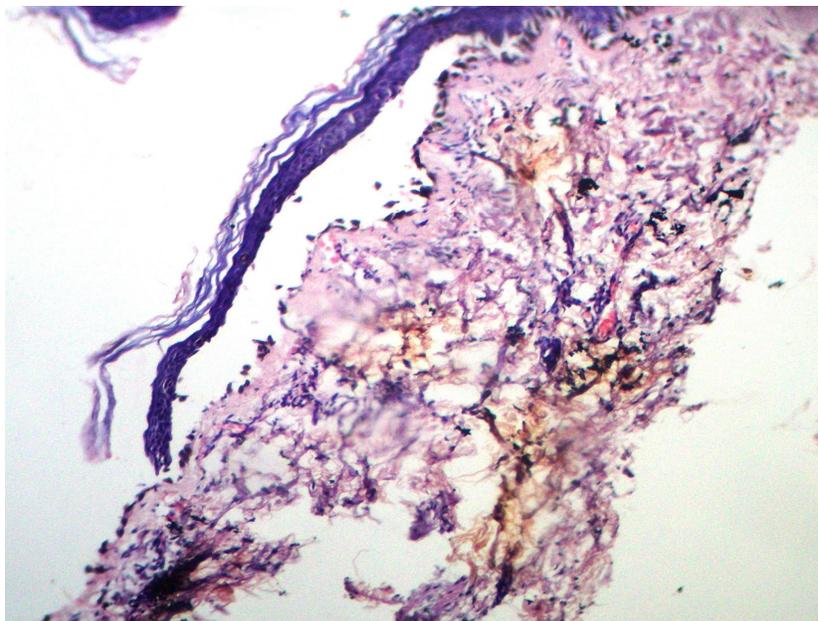
In this study, we evaluate the frequency of pemphigus and its variant in Saurashtra Region of India.

## Patients and Methods

This study was carried out on cases of pemphigus seen at the skin department of Guru Gobind Singh Hospital and M. P. Shah Medical College in a

period of two years from January 2008 to December 2009. All cases suspected of pemphigus were selected and a careful clinical examination was done. A detailed history with particular reference to the mode of onset, characteristics features and distribution of the lesions was taken. Age, sex and occupation with area of residence in Saurashtra region were noted carefully. After careful clinical examination and admission, Tzanck smears were prepared from all patients which were then fixed and stained with leishman's stain to confirm acantholysis. These detached cells take on a rounded configuration intra-epidermally, forming thin-roofed bullae that characterize the disease. These findings can typically be visualized under light microscopy.

In every patient, all routine haematological investigations and urinalysis were done. Punch biopsies of the early lesions and the surrounding skin tissue of all 75 cases were taken. We used a 3 mm sharp punch to avoid suturing and scar formation. In very few cases, inconclusive diagnosis of the histopathologist with the comment of inadequate material compelled us to use a 5 mm punch. All biopsy materials were fixed in 10% formalin and sent to the histopathology department. All biopsy specimens were processed by paraffin section technique and exposed to increasing grades



**Figure 1.** Pemphigus Vulgaris- 10X showing suprabasal cleft. (H&E stain)

of alcohol and then stained by haematoxylin and eosin. Multiple serial sections of the biopsies were studied.

From cases suspected of pemphigus vulgaris, we referred 9 cases to higher centers for direct immunofluorescence (DIF) (five cases because of inconclusive histopathological findings and four cases due to their own desire). One case was referred to an ENT specialist due to difficulty in swallowing and pain to confirm esophageal mucosal involvement.

## Results

A review of district-wise distribution of cases of pemphigus were showing to be most prevalent in Junagarh district (53.3%), to be followed by Rajkot and Jamnagar (10.67%) and Bhavnagar (9.3%). (Table 1)

Seventy two (96%) cases of pemphigus vulgaris and three (4%) cases of pemphigus foliaceus were diagnosed during the study period. In cases of pemphigus vulgaris, maximum patients were in 31-40 years age group. There were 43 (57.3%) females and 29 (38.7%) males. In case of pemphigus foliaceus all the three patients were male and in 21-40 years age group as shown in table 2. Vesicle or bullae were found in all cases of pemphigus vulgaris, which spontaneously ruptured to give rise to erosions in 65 cases (90.27%). Crusted lesions, erythematous plaques, vegetations and pustules were present less frequently. In pemphigus foliaceus, blisters arising on erythematous base were seen in one patient (33.3%) which resulted in erosion in one (33.3%) patient.

Distribution of skin lesions showed common sites of

**Table 3.** Histopathological findings in Pemphigus

S. No	Histopathology	No. of patients		Percentage[%]	
		PV	PF	PV	PF
1	Suprabasal cleft	39	--	54.16	--
2	Mid epidermal vesicle	33	--	45.83	--
3	Subcorneal bulla	--	03	--	100
4	Acantholysis	66	03	91.6	100
5	Row of Tombstones	40	--	55.5	--
6	Infiltrates	41	--	56.9	--

involvement in pemphigus vulgaris were generalized involvement in 51 cases (70.83%), face in 10 Cases (13.89%), and scalp in 11 cases (15.27%). On the other hand, in pemphigus foliaceus, there were lesions in generalized distribution in all the three cases (100%). Pruritus was seen in 16 cases (21.33%) of all pemphigus cases. Thirteen cases (18.05%) of pemphigus vulgaris complained of pruritus. All the three cases (100%) of pemphigus foliaceus had pruritus. A single case of oral and esophageal mucosal involvement was diagnosed.

From 72 cases of pemphigus vulgaris and 3 cases of pemphigus foliaceus, Nikolsky's sign was positive in 63 cases (87.50%) and 1 case (33.3%) respectively.

This study had shown that out of 72 cases of pemphigus vulgaris, 39 cases (54.16%) shown intra-epidermal suprabasal vesicles and 33 cases (45.83%) shown mid-epidermal vesicles (table 3). Midepidermal vesicles were seen in old bullae, due to regeneration of the cells from the floor of the bulla. Acantholysis was seen in 66 patients (91.60%) as groups of cells or single cells within the bulla cavity. An inflammatory infiltrate was present in the bulla cavity in 41 cases (56.9%). Neutrophils were predominant in 18 cases (43.90%) and eosinophils in 23 cases (56.10%) (Figure1). In nine cases, DIF studies shown granular IgG, C<sub>3</sub> deposits in intercellular spaces between keratinocyte and ultimately came out to be pemphigus vulgaris.

Out of three cases of pemphigus foliaceus studied, all the cases (100%) were showing acantholysis with subcorneal bulla.

## Discussion

Pemphigus is a group of diseases which are proved to be autoimmune in nature with a clinical presentation of erosions, ulceration of mucous membrane and intraepidermal bullous formation. If left untreated, it can be fatal. Their susceptibility has been associated with human leukocyte antigen HLA D4 and HLA D6, but more specifically with DRB1\*0402 haplotype<sup>7</sup>. Antibodies are directed against the suprabasilar intercellular cement substance, resulting in loss of coherence of the epidermal and mucosal epithelial structures, with subsequent blister formation<sup>8</sup>.

Our series is in accordance with other Indian series. Each one of those series has reported pemphigus vulgaris as the most prevalent, followed by pemphigus erythematosus/foliaceus<sup>9</sup>. The majority (85.33%) of our patients were between 21-60 years, akin to Indian literature<sup>10</sup>. Pemphigus

vulgaris affects males and females equally<sup>11</sup>, although there was a slight female predominance in the present study as the F:M ratio was 1.48:1.

The nature and distribution of the lesions as well as mucosal involvement seen in different types of pemphigus in our series was similar to the pattern seen in earlier studies<sup>12</sup>. Flaccid bullae were seen in all cases. Oral mucosal involvement was seen in almost all cases of pemphigus vulgaris while seven cases of pemphigus had mucosal involvement at other sites in addition to oral mucosal involvement. Next to oral mucosa, mucosa of genital organs was the commonest site of involvement. A single case of oral and esophageal mucosal involvement was diagnosed. None of the patients of pemphigus foliaceus had mucosal involvement. Pruritus was seen in 20% of our cases with pemphigus vulgaris, slightly lower than the earlier reports. Nikolsky's sign was positive in 87.5% of the cases of pemphigus vulgaris, similar to reports in Indian literature. Positive Nikolsky's sign shows progressive peripheral detachment of epidermis which may lead to widespread cutaneous involvement, thus indicating the severity of the disease. However, many investigators believe that a negative sign after an earlier positive sign indicates response to treatment. The results of our study demonstrated that pemphigus vulgaris was the most common variant and both mucosal and the body lesions occurred with an almost equal frequency. We did not routinely do DIF study in all cases but nine cases were referred to higher centers for DIF whose final diagnosis was consistent with our diagnosis of pemphigus vulgaris.

The study showed a geographic distribution for pemphigus, being more common in Junagarh District (53.3%), Rajkot and Jamnagar Districts (10.67%) as compared to other districts. Agriculture is the main occupation in areas where the disease is more prevalent.

Most of the lesions of pemphigus vulgaris and all the lesions of pemphigus foliaceus showed a generalized distribution pattern, and face was the single most common site of involvement. All cases of pemphigus vulgaris had oral mucosal involvement, six cases had oral and genital mucosal involvement and one case had oral and esophageal mucosal involvement. Acantholysis was seen in almost all the cases included in the study.

In conclusion, most of the patients had pemphigus vulgaris followed by pemphigus foliaceus. Pemphigus is more prevalent at certain areas of Saurashtra region of India showing a geographic distribution. Further study to evaluate the course of

pemphigus or the efficacy of treatment protocols is recommended to elucidate the nature of this uncommon disease more clearly in this region.

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