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# Pemphigus vulgaris localized to the tongue

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## Abstract

**Background:** Pemphigus vulgaris is an autoimmune blistering disease that may initially present as localized lesions. It rarely remains localized throughout its clinical course.

**Observations:** A 53-year-old woman with non-progressive pemphigus vulgaris localized to the tongue for 18 years is presented. Clinical examination showed erosions and ulcerations limited to the lateral margins of the tongue. Patient was treated with sublesional triamcinolone-acetonide injections as lesions recurred. Finally, triamcinolone-acetonide injections at three weeks intervals for three months induced a long-term sustained clinical remission for 18 months. The indirect immunofluorescence did not correlate with disease activity. Anti-desmoglein 3 antibodies (ELISA) remained elevated throughout the clinical course and during remission.

**Conclusions:** This case highlights the recognition of localized pemphigus vulgaris and demonstrates the importance of local therapy and its potential to induce long-term remission. Similar report of additional cases may create a standard of care for non-progressive, localized pemphigus. (*J Dermatol Case Rep*. 2014; 8(2): 55-57)

## Introduction

Pemphigus is a rare, potentially fatal blistering autoimmune disease that can initially present with oral, cutaneous or mucocutaneous manifestations.[1] It has two main variants: pemphigus vulgaris (PV) and pemphigus foliaceus (PF).[2] PV is more common. We present a case of PV localized only to the lateral margins of the tongue for 18 years. A sustained clinical remission is achieved with injections of sublesional corticosteroids at regular intervals.

## Case Report

A 53-year-old Caucasian female was seen at the Center for Blistering Diseases (CBD) in January 2009 with a 13-year history of tongue ulcers that were present only on the lateral margins of the tongue bilaterally. The frequency at which they recurred was variable and could be two weeks to three months intervals. The morphology of the lesions as described by the patient was shallow, superficial erosions that made eating and swallowing difficult. The reason for her consulting the CBD was that the lesions were occurring at a greater frequency and were more painful than before. She had lost 4 kg in weight.

In the past, she was seen by several dentists and was thought to have aphthous stomatitis. No biopsy was done and the patient was treated with a variety of topical agents which included topical corticosteroids, anti-fungals, and antibacterial and anti-viral agents. For several years, she used "Magic Mouthwash". In June 2007, the diagnosis of pemphigus vulgaris was made based on histology and direct immunofluorescence. She had used previously and continued to use corticosteroids rinses and had not been treated with any systemic agents.

Physical examination in January 2009 revealed multiple erosions with irregular and ill-defined borders on the lateral margins of the tongue bilaterally (Fig. 1A). No lesions were seen on the ventral surface of the tongue, floor of the mouth, upper and lower gingiva, buccal mucosa and hard and soft palate. The skin, scalp and nails were normal. Further evaluations by specialists in gynecology, ophthalmology, gastroenterology and otolaryngology revealed no evidence of involvement with pemphigus. The patient was in good health and exercised regularly. She was not on any systemic medications for any medical issues. The family history was non-contributory.

Due to the localized nature of her disease, the patient was treated with a total dose of 10-15 mg triamcinolone-acetonide (TAC) diluted in 2% xylocaine with epinephrine injected

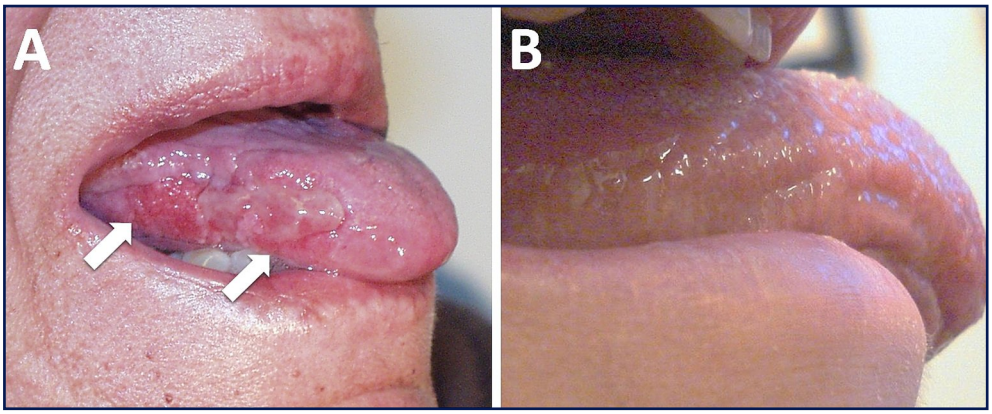


**Figure 1**

*Pemphigus vulgaris of the tongue.*

*(A) Irregular erosions and ulcerations on the right lateral side of the tongue at initial presentation in 2009;*

*(B) No evidence of pemphigus after the last treatment of triamcinolone acetonide sublesional injection in January 2013.*

sublesionally at each lesion. Before each treatment, the patient's mouth was either sprayed or rinsed with local anesthetics. The frequency of the injections was one to three months and determined by the level of discomfort encountered by the patient. The lesions resolved within five to seven days after the sublesional injection. Foods capable of causing physical or biochemical trauma were discouraged. Local adverse effects including mucosal atrophy and gingival pellets were cautiously monitored.[3] Systemic side effects that could result from absorption, including weight gain, hypertension, infections and mood changes, were closely monitored.[4] This monitoring was done by records of blood pressure, blood sugar, regular weight measurements and continued ability to work. At regular intervals, the 8 am and 4 pm serum cortisol levels were measured and found to be normal.

During the following four years, the patient had 25 documented episodes of lesions recurring only at the lateral sides of the tongue bilaterally. Examinations by a general dentist, orthodontist and prosthetic dentist did not show any evidence of the disease at any other site in the oral cavity. It was confirmed that the bilateral tongue lesions were not secondary to trauma from the teeth by examination from the dentist who had provided her oral care prior to the onset of pemphigus. Regular annual physical examinations did not reveal involvement with pemphigus at other anatomical sites or development of other systemic diseases. On two occasions between January 2009 and December 2010, biopsies of lesions and perilesional mucosa were done to confirm the diagnosis of PV so that another pathology was not being missed since the disease continued to recur. Histology on both biopsies demonstrated intra-epithelial vesicles with acantholysis and immunopathology revealed intercellular deposition of IgG in the epithelium.

In an attempt to resolve the disease process, the patient was injected with 10 mg of TAC dissolved in 2% xylocaine with epinephrine at regular three week intervals from October to December 2012. At each time interval, the total dose injected at multiple sites was always 10 mg of TAC.

In January 2013, she had no new lesions and all previous lesions had healed. The patient has been without lesions for the last 18 months. She has never been without lesions for this period of time during the last 18 years (Fig. 1B). Therefore, the patient is considered in complete clinical remission. It is to be noted that during the 18 years, no other site in the oral cavity was involved.

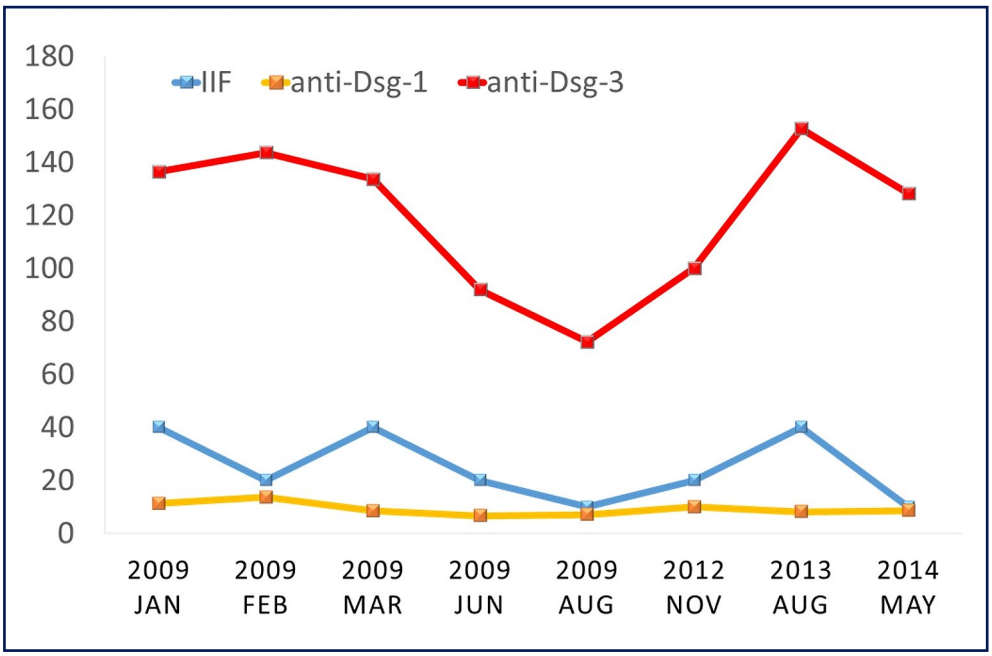


**Figure 2**

*Serological studies during the clinical course of the disease and early remission.*

*On indirect immunofluorescence (IIF), antibody titers were inconsistent and did not correlate with disease activity and severity. ELISA revealed low titers of anti-Dsg-1 antibody. Anti-Dsg-3 antibody titers remained elevated throughout the clinical course and during remission.*

From January 2009 when initially seen at the CBD until May 2014, the patient had serological studies at various time intervals. The serological tests consisted of indirect immunofluorescence (IIF) using monkey's esophagus as substrate and ELISA for antibodies to Dsg-1 and Dsg-3 (Fig. 2). Antibody titers on IIF did not follow or correlate with clinical disease. ELISA revealed low or absent levels of anti-Dsg-1 antibodies. On the contrary, anti-Dsg-3 antibodies have been very high and fluctuant in the presence of limited disease. Interestingly, anti-Dsg-3 antibodies have remained high in spite of 18 months of sustained clinical remission.

## Discussion

There are several features that make this patient unique and interesting. One notable observation is that she had disease localized only to the tongue for 18 years. The diagnosis was confirmed by multiple biopsies. Carefully observed by more than one physician, the disease did not involve other mucosal tissues or the skin. The disease on the tongue responded to sublesional injections of TAC. Frequent injections at three week intervals during a three month period achieved the primary outcome of a sustained and prolonged clinical remission.

In a study of 71 PV patients with disease limited to the oral cavity, 18% of the patients had only one site of involvement, 28% had two sites and 54% had three or more sites of involvement.[1] The frequency of intraoral sites involvement were as follows: the buccal mucosa (90.14%), palate and lips (51%) and tongue (28.17%).[1] It was unclear if any patient had only tongue involvement as reported in this patient.

Pemphigus may initially present as localized oral, mucosal or mucocutaneous manifestations but rarely remains localized throughout its clinical course.[5] The literature revealed only 22 reports of localized PV with involvement of the oral mucosa occurring more frequently than non-oral sites.[5] The patient described in this report appears to be similar. The dilemma of why the disease remains localized in some patients and involves multiple sites in others is an issue of interest and concern. If the immunoregulatory mechanisms were studied in patients with localized versus generalized disease, several important observations could be made.

The antibody titers on IIF did not correlate with disease activity or severity. Similar observations have been reported.[6,7] Another interesting observation made in this case was the presence of high titers of anti-Dsg-3 antibodies in the patient's sera throughout the disease course and while in remission. The titers of anti-Dsg-1 and -3 antibodies have been reported to correlate with disease activity in several studies.[8-10] In the patient in this report, anti-Dsg-1 antibodies were absent because no skin disease was present. However, the high titers of anti-Dsg-3 antibodies did not correlate with localized disease. Observations have been made by investigators demonstrating that the titer of anti-Dsg-3 antibodies do not correlate with disease severity and activity.[11-13] A speculative explanation for the positivity of anti-Dsg-3 antibody in the absence of disease is that the antibody may be non-pathogenic.[14] A modified assay may be needed to detect non-pathogenic epitopes.[12,13]

Mignogna *et al* have demonstrated that adjuvant TAC injections can help reduce the systemic dose of corticosteroids.[3] This case is unique in that the patient was treated with only sublesional TAC injections and topical rinses without any systemic therapy and was able to achieve a prolonged and sustained clinical remission. In patients with limited disease where disease progression is not observed, such therapy may be useful. It could prevent the hazardous and catastrophic side effects observed with prolonged high-dose corticosteroids and immunosuppressive therapy.

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