

## Case Report

# Traumatic Ulcerative Granuloma with Stromal Eosinophilia: A Diagnostic Dilemma

Harshita BR<sup>1</sup>, Shebah C<sup>1</sup>, Sheethal A<sup>1</sup>, Ashwini B<sup>1\*</sup>, Mohammed S<sup>2</sup>, Nandesh S<sup>3</sup>, Karthik K<sup>3</sup>, Bhargabi MP<sup>4</sup>, Raghavendra K<sup>4</sup> and Prasanna RK<sup>4</sup>

<sup>1</sup>Department of Oral Medicine and Radiology, A.J Institute of Dental Sciences, Rajiv Gandhi University, India

<sup>2</sup>Department of Oral Pathology, A.J Institute of Dental Sciences, Rajiv Gandhi University, India

<sup>3</sup>Department of Oral and Maxillofacial Surgery, A.J Institute of Dental Sciences, Rajiv Gandhi University, India

<sup>4</sup>Department of Oral Medicine and Radiology, A.J Institute of Dental Sciences, Rajiv Gandhi University, India

\*Corresponding author: Baliga Ashwini, Department of Oral Medicine and Radiology, A.J Institute of Dental Sciences, Rajiv Gandhi University, NH 66, Kuntikana, Mangaluru 575004, Karnataka, India

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## Introduction

Traumatic Ulcerative Granuloma with Stromal Eosinophilia (TUGSE) is a benign, self-resolving, chronic ulcerative lesion of the oral mucosa with an unclear pathogenesis [1]. In infants, it is called as Riga-Fede disease. Although the pathogenesis of TUGSE is questionable, trauma caused by accidental bite, sharp teeth or hard food maybe the common etiology [2]. The peak of incidence is noted between the sixth and seventh decades of life, with a slight female predominance. The tongue is the most commonly affected site [3]. It clinically presents as an isolated, slow-healing ulcer, with elevated and indurated margins that may resemble lesions like squamous cell carcinoma or infectious diseases such as primary syphilis, tuberculosis, etc. Histologically characterised by a mixed infiltrate of inflammatory cells including large mononuclear cells, lymphocytes, eosinophils and histiocytes [4]. The treatment includes removal of the cause. Here we present a case of chronic ulcer in a 75 year old female patient.

## Case Presentation

A 75 year old woman reported to the dental Out Patient Department with the chief complaint of pain in the left side of the tongue since 1 month. Patient gave history of injury at the same site, 1 month ago. Initially, a small blister formation was seen. The ulcer was associated with pain which was mild, pricking type and localised, which aggravated during consumption of food and relieved on its own. Similar type of ulcer was noted by the patient on the right side of tongue few years back. Other associated symptoms such as nausea, fever, loss of weight or appetite were absent.

On examination, extra orally no gross facial swelling was noted.

## Abstract

Traumatic Ulcerative Granuloma with Stromal Eosinophilia (TUGSE) is a benign lesion affecting the oral mucosa, which resembles oral squamous cell carcinoma. The aetiopathogenesis remains uncertain, although trauma is believed to be the major factor in its development. A biopsy is required to exclude malignancy, despite the ulcer being benign in nature. Histopathologically, this lesion is predominantly composed of eosinophils and other inflammatory cells in submucosa and mucosa. Treatment modalities include observation, antibiotics, steroid therapy and surgery. Thus, this case report is a rare documentation of TUGSE, an unlikely occurrence in the oral cavity.

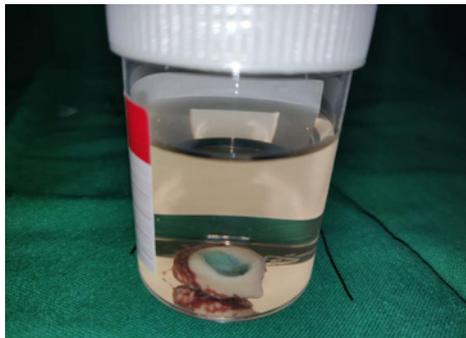
**Keywords:** Riga-fede disease; Squamous cell carcinoma; Stromal eosinophilia; Tongue ulceration; Traumatic granuloma



Figure 1: Lesion on the left Lateral border with Toluidine Blue Staining.

Lymph node Ib was palpable. The consistency was soft and non-tender. Intraorally, a well circumscribed ovoid lesion on the left ventrolateral border, at the junction of anterior 2/3<sup>rd</sup> and posterior 1/3<sup>rd</sup> of the tongue was observed. The lesion was measuring approximately 1.5x2cm, with punched out edge, covered by a yellowish white pseudo membrane and erythematous halo. Root stumps were seen with respect to 35, 36 and 37. Tooth impression was seen along the lateral border of the tongue. The ulcer was tender on palpation, no discharge of pus or blood on palpation seen. Induration was noted along the borders of the ulcer. No restriction of lateral or protrusive tongue movements were observed. Based on history and clinical findings, a provisional diagnosis of malignant ulcer on the left lateral border of the tongue was given.

Toluidine blue staining was done to the ulcer, which yielded a royal blue coloration of the floor of the ulcer suggestive of dysplastic changes (Figure 1). Excisional biopsy was done under local anaesthesia



**Figure 2:** Excisional Biopsy Specimen.



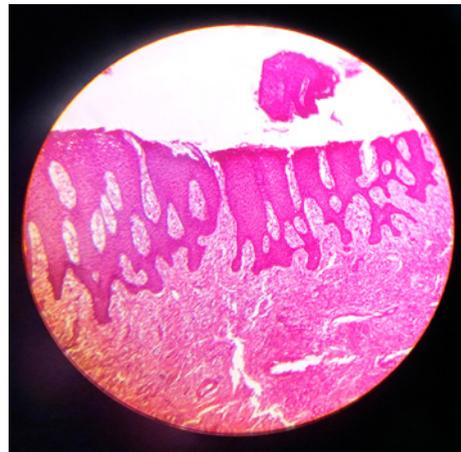
**Figure 3:** Post Biopsy with Suturing.

and then the site was sutured (Figure 2). Extraction was done with respect to 35, 36. Patient was prescribed Tablet Augmentin<sup>®</sup> 625mg three times daily for 3 days and Tablet Ketorol<sup>™</sup>- DT twice daily for 3 days (Figure 3).

The histopathological examination of the excisional biopsy showed an ulcerated stratified squamous epithelium overlying mixed inflammatory cell infiltrate, predominantly consisting of eosinophils followed by lymphocytes and histiocytes extending deep into the sub mucosa. Eosinophils were seen close to the intersecting bundles of muscle tissue (Figure 4). Based on the history, clinical and histopathological findings a final diagnosis of Traumatic Ulcerative Granuloma with Stromal Eosinophilia (TUGSE) was given. Patient was called after a week for suture removal. Satisfactory healing was noted after a month.

## Discussion

Traumatic ulcerative granulomas are self-limiting ulcero-proliferative lesions, clinically emulating malignancy, thus causing anxiety for the patient. It has been known by a number of terms, including eosinophilic ulcer, eosinophilic granuloma of the tongue, traumatic granuloma, atypical histiocytic granuloma and Traumatic Ulcerative Granuloma with Stromal Eosinophilia (TUGSE). This entity was first described by the Italian physician, Antonio Riga in 1881, and subsequently published by F Fede in 1890, hence it is known as Riga-Fede disease or Cardarelli aphthae [5]. The pathogenesis of TUGSE is postulated that trauma causes ulceration which allows influx of microorganisms, toxins and foreign debris around the surrounding tissue. A severe inflammatory response is triggered secondary to



**Figure 4:** Ulcerated epithelium showing inflammatory cell infiltrate.

mast cell-eosinophil reaction which recruit eosinophils and cause further damage by exacerbating inflammation locally (Figure 5) [6,7]. Though eosinophilic ulcer and Riga Fede disease are microscopically identical, the causes of trauma in the adults may be related to the presence of broken teeth or ill-fitting prosthetic material in the oral cavity. In our present case, trauma was the etiological factor. It is crucial to diagnose the lesion early, as it may be the presenting sign of an underlying neurological disorder. Other associations include Lesch-Nyhan syndrome, Tourette syndrome, familial dysautonomia, microcephaly, macroglossia and tongue biting [8]. There are two age peaks of incidence in eosinophilic ulcer. The incidence of Riga Fede peaks during the first two years of life, primarily in connection with teething and of TUGSE is seen between the fifth and seventh decade [4].

TUGSE clinically appears as a painful solitary nodule with a central ulcer and yellow fibrinous base. The ulcers typically have an indurated margin and rolled appearance. The most commonly affected location is the tongue. Other areas such as buccal and vestibular mucosa, lip, palatal mucosa, retro molar area, gingiva and the floor of the mouth may be involved [9]. The lesions present as mushroom shaped, ulcerated, polypoidal mass on the lateral surface of the tongue. In our patient a well circumscribed ovoid lesion was seen on the left lateral border of the tongue with punched out edge covered by yellowish white pseudo membrane and erythematous halo. It is a fast growing lesion, typically developing in days to weeks. Even though the ulcer spontaneously reverts back, it may take weeks or months to resolve [10]. Delayed healing of TUGSE lesion has been reported to be associated with the lack of secretion of transforming growth factors, TGF- $\alpha$  and TGF- $\beta$  by eosinophils infiltrating the lesion [11].

The clinical differential diagnosis for TUGSE includes squamous cell carcinoma, pyogenic granuloma, lymphoproliferative disorder, traumatic neuroma, Langerhans cell histiocytosis, granulomatous disorders, and oral lymphoma. Inflammatory disorders such as syphilis, Behçet's disease, herpes, histoplasmosis, Wegener granulomatosis, and others also should be considered [12].

Histologically, TUGSE shows an ulcerated surface which comprises of dense polymorphic inflammatory infiltrate

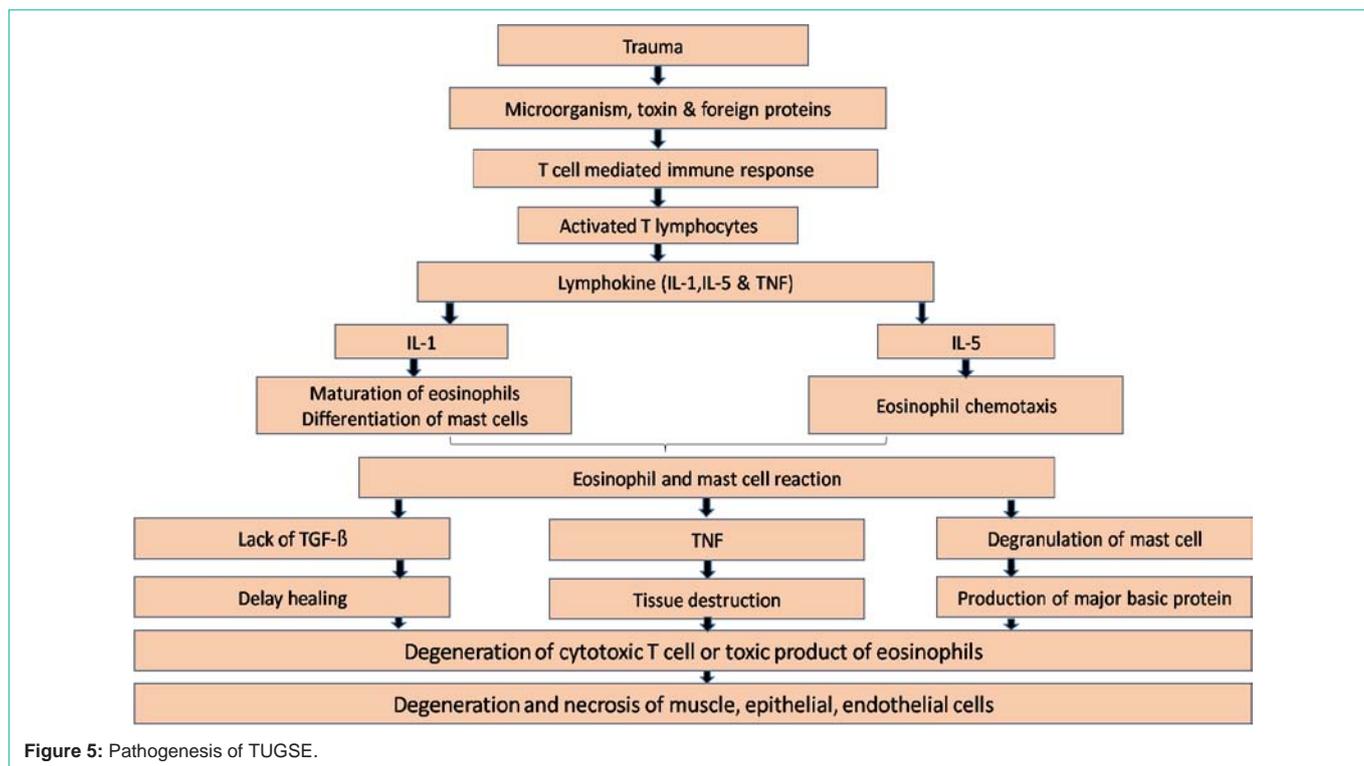


Figure 5: Pathogenesis of TUGSE.

predominantly composed of eosinophils and histiocytes, accompanied by a population of large mononuclear T and B cells, and macrophages with abundant cytoplasm, irregular nuclear contours, small nucleoli and fine chromatin. Superficial mucosa and the submucosa including the salivary glands and muscle may be involved in this lesion. Similar histopathological features were observed in present case.

The treatment plan includes wait-and-see approach after the removal of the causative agent, as spontaneous healing usually occurs within 1 month, but may rarely take as long as 8 months. Antibiotics, topical, intra lesional and systemic corticosteroids, have been tried in long-standing cases. An incisional or excisional biopsy is often required for definitive diagnosis when no evidence of spontaneous healing is observed at 1-month follow up. Curettage, cryosurgery is also helpful, but surgical excision is the most commonly cited treatment procedure among the different therapies used [13]. In our case, an excisional biopsy was done and sutures were placed. Extraction of the sharp root stumps were done which was the traumatic agent.

## Conclusion

TUGSE is a benign lesion of the oral mucosa of unknown pathogenesis. As it may clinically resemble malignancy or infectious diseases, biopsy is mandatory and should be combined with thorough clinical examination. The histogenesis still remains controversial and this condition is characteristically self-healing with a benign course.

## References

- Abdullah BH. Traumatic ulcerative granuloma with stromal eosinophilia (A clinic pathological study of 18 cases) J Baghdad Coll Dent. 2011; 23: 59-64.
- Didona D, Paolino G, Donati M, Didona B, Calvieri S. Eosinophilic ulcer of the tongue--Case report. An Bras Dermatol. 2015; 90: 88-90.
- Sethi A, Banga A, Raja R, Raina R. Traumatic ulcerative granuloma with stromal eosinophilia. Indian J Dent Res. 2020; 31: 636-639.
- Benitez B, Mülli J, Tzankov A. et al. Traumatic ulcerative granuloma with stromal eosinophilia - clinical case report, literature review, and differential diagnosis. World J Surg Onc. 2019; 17: 184.
- Lingaraju N, Gaddelingiah YB, Shivalingu MM, Khanum N. Eosinophilic ulcer of the tongue: a rare and confusing clinical entity. BMJ Case Rep. 2015; 2015: bcr2015210107.
- Sivapathasundharam B, Lavanya S. Traumatic ulcerative granuloma with stromal eosinophilia. J Oral Maxi Pathol. 2005; 9: 30-33.
- Bhushan Sharma, George Koshy, Shekhar Kapoor. Traumatic Ulcerative Granuloma with Stromal Eosinophilia: A Case Report and Review of Pathogenesis. J Clin Diagn Res. 2016; 10: ZD07-ZD09.
- Zaenglein AL, Chang MW, Meehan SA, Axelrod FB, Orlov SJ. Extensive Riga-Fede disease of the lip and tongue. J Am Acad Dermatol. 2002; 47: 445-447.
- Marszalek A, Neska-Dlugosz i. Traumatic ulcerative granuloma with stromal eosinophilia. A case report and short literature review. Pol J Pathol. 2011; 62: 172-175.
- Hirshberg A, Amariglio N, Akrisch S, et al. Traumatic ulcerative granuloma with stromal eosinophilia: reactive lesion of the oral mucosa. Am J Clin Pathol. 2006; 126: 522-529.
- MB Abdel-Naser, F Tsatsou, S Hippe, J Knolle, I Anagnostopoulos, H Stein, et al. Oral Eosinophilic ulcer, an Epstein-Barr Virus-Associated CD30+ Lymphoproliferation. Dermatology 2011; 222: 113-118.
- JN Butler, TT Kobayashi. Traumatic ulcerative granuloma with stromal eosinophilia: A Malignant-Appearing Benign Lesion. 2017: 100: E28-E31.
- Raviteja YS, Kundana I, Triveni T. Eosinophilic Ulcer of the Oral Mucosa. Int J Dent Med Res. 2015; 1: 112-115.