

## Traumatic Oral Lesions: Causes, Diagnosis, and Management

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### Abstract

Traumatic oral lesions are common clinical findings that can affect individuals of all ages and significantly impact oral function, aesthetics, and quality of life. These lesions result from mechanical, thermal, chemical, or electrical insults to the oral mucosa and can be either acute or chronic. Common causes include accidental biting, poorly fitting prosthetics, orthodontic appliances, sharp tooth edges, and habits such as bruxism or cheek chewing. Traumatic lesions may mimic other serious oral pathologies, including malignancies, necessitating careful clinical assessment for accurate diagnosis. This paper provides a comprehensive review of the etiology, clinical presentation, diagnostic approaches, and management strategies for traumatic oral lesions. It discusses the classification of lesions, highlighting the distinctions between physical trauma, iatrogenic injuries, and self-inflicted wounds. Diagnostic procedures include thorough patient history, clinical examination, and, where needed, adjunctive tools such as biopsy or imaging to rule out neoplasms and infections. Management approaches are discussed in terms of lesion severity, duration, and underlying causes. Treatment typically involves the removal of the source of trauma, symptomatic relief with topical agents, patient education on oral hygiene and behavior modification, and follow-up care to ensure resolution. In cases of non-healing or atypical lesions, further diagnostic workup is warranted to exclude other systemic or malignant conditions.

The paper emphasizes the importance of a multidisciplinary approach involving dentists, oral medicine specialists, and, when necessary, medical professionals to ensure comprehensive care. Increased awareness and early intervention can significantly reduce patient morbidity and prevent complications associated with chronic traumatic lesions.

**Keywords:** Traumatic oral lesions; Oral mucosa injury; Oral trauma; Diagnosis; Oral ulcer management; Physical trauma; Dental appliances; Mucosal healing; Differential diagnosis; Oral pathology

### Introduction

Traumatic oral lesions are common occurrences in dental practice, often resulting from physical, chemical, or thermal injury [1]. These lesions can range from minor irritation to severe tissue damage, impacting patients' oral health and quality of life. This article provides an overview of the causes, clinical presentation, diagnosis, and management of traumatic oral lesions, with an emphasis on evidence-based treatment strategies [2,3].

Oral mucosa is frequently exposed to various irritants, making it vulnerable to traumatic lesions. These lesions can arise from accidental bites, sharp tooth edges, ill-fitting prostheses, or aggressive brushing. Chronic trauma may lead to persistent irritation, contributing to more complex conditions such as oral ulcerations, hyperkeratosis, or even malignancy in some cases [4]. Traumatic oral lesions are injuries to the oral mucosa caused by external mechanical, chemical, thermal, or electrical forces. These lesions represent a significant portion of oral complaints encountered in dental practice and can vary widely in appearance, severity, and duration [5]. While many traumatic lesions are benign and self-limiting, they may cause pain, discomfort during eating or speaking, and psychological distress due to aesthetic concerns [6]. The causes of traumatic oral lesions are diverse and may include accidental bites, ill-fitting dental appliances, sharp tooth surfaces, orthodontic brackets, or habitual behaviors such as lip biting and bruxism. Additionally, iatrogenic injuries during dental procedures and chemical burns from topical medications or substances like aspirin placed directly on mucosal surfaces are also frequent culprits [7]. The diagnostic challenge lies in distinguishing these lesions from infectious, autoimmune, or neoplastic conditions that may present similarly. Accurate diagnosis relies on a thorough patient history, careful clinical examination, and, when necessary, the use of diagnostic adjuncts such

as biopsies or imaging [8].

Management of traumatic oral lesions focuses on eliminating the causative factor, promoting mucosal healing, and preventing recurrence. This may involve dental interventions to smooth sharp restorations, adjust prosthetics, prescribe protective devices like mouthguards, and educate patients on avoiding trauma-inducing behaviors.

Understanding the pathophysiology, diagnostic considerations, and management principles of traumatic oral lesions is crucial for dental professionals to ensure effective treatment, reduce patient discomfort, and prevent long-term complications.

### Etiology and classification

Traumatic oral lesions can be classified based on their cause into the following categories:

- Accidental Biting, Common in individuals with parafunctional habits (e.g., bruxism, cheek chewing).
- Sharp Tooth or Restoration, Irregular dental restorations or

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fractured teeth can cause chronic irritation.

- Dentures or Orthodontic Appliances, Ill-fitting prostheses may cause pressure ulcers.
- Hot Food or Beverage Burns, Contact with excessively hot food or beverages can result in oral burns.
- Smoking or Vaping, Repeated exposure to heat from smoking can damage the oral mucosa.
- Medications or Chemicals, Aspirin burns, chemical cauterizing agents, or toothpaste containing sodium
- Acidic or Spicy Foods, Frequent consumption may lead to mucosal irritation.
- Radiotherapy can cause mucositis and ulceration.
- Electrical Burns, Often seen in children who chew on electrical cords.
- Ulcerations, Painful, shallow, or deep lesions with irregular borders.
- Erythema, Redness and inflammation surrounding the lesion.
- Hyperkeratosis, White, thickened patches due to chronic irritation (e.g., frictional keratosis).
- Petechiae or Ecchymosis, Mucosal bleeding caused by minor trauma.
- Lacerations or Tears, Sharp objects or accidental biting may cause tissue lacerations.

## Diagnosis

Diagnosing traumatic oral lesions involves a thorough clinical examination and patient history.

- Duration, frequency, and possible causative factors (e.g., recent dental procedures, habits).
- History of recurrent trauma or exposure to irritants.
- Inspect the size, shape, and color of the lesion.
- Palpate for induration or tenderness.
- Examine dental appliances or restorations for sharp edges.
- Traumatic Ulcers, Shallow, painful, with erythematous borders.
- Aphthous Ulcers, Round, painful, with a grayish-yellow base and erythematous halo.
- Oral Lichen Planus, Chronic inflammatory condition with white striations.
- Oral Cancer, Non-healing ulcer with induration or mass formation requires biopsy for confirmation.

## Management and treatment

The treatment of traumatic oral lesions aims at promoting healing and preventing recurrence.

Removal of the Causative Factor, Smoothing sharp restorations or adjusting dentures.

Topical anesthetics (e.g., benzocaine) for symptomatic relief.

Analgesics (e.g., ibuprofen or acetaminophen) for moderate pain.

Chlorhexidine mouthwash (0.12%) to prevent secondary infection.

Warm saline rinses for soothing effect.

Topical Steroids, for inflammation control (e.g., triamcinolone acetonide 0.1%).

Vitamin and Mineral Supplements, for patients with nutritional deficiencies (e.g., iron, folic acid).

Dental wax or silicone-based protectors for sharp restorations.

Occlusal guards for bruxism-induced trauma.

Traumatic oral lesions typically heal within 7–14 days after the removal of the irritant.

Non-healing or recurrent lesions require biopsy and histopathological examination to rule out malignancy.

## Prevention

Preventive strategies for traumatic oral lesions include,

- Regular dental check-ups to identify and smooth sharp restorations.
- Educating patients about parafunctional habits and oral hygiene.
- Properly fitting dentures and orthodontic appliances.
- Avoiding excessively hot or spicy foods.

## Conclusion

Traumatic oral lesions are common and often self-limiting with appropriate management. However, chronic or non-healing lesions necessitate further evaluation to rule out underlying pathology. Dentists play a crucial role in diagnosing, treating, and educating patients on preventing traumatic oral injuries. Traumatic oral lesions, though often benign, present a significant diagnostic and therapeutic challenge due to their varied etiology and resemblance to more serious pathologies. Proper identification and management are essential to alleviate patient symptoms and prevent recurrence. A systematic approach that includes detailed history-taking, thorough examination and timely intervention ensures accurate diagnosis and effective care. Dental professionals must remain vigilant, particularly with persistent or atypical lesions, and collaborate with other healthcare providers when necessary. With appropriate attention, most traumatic oral lesions can be resolved efficiently, contributing to improved oral health outcomes and enhanced patient quality of life.

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