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CASE REPORT

Irritation Fibroma Masquerading as Oral Squamous Cell Carcinoma in a Young Tobacco User: A Case Report

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Abstract

Background: Irritation fibroma, also known as traumatic fibroma, is a benign reactive lesion of the oral mucosa associated with chronic mechanical irritation. Because its clinical appearance may overlap with other persistent oral mucosal lesions, including oral squamous cell carcinoma (OSCC), accurate diagnosis requires careful clinicopathological correlation. **Case Presentation:** A 29-year-old man with an 11-year history of tobacco use presented with a 1.8-cm lesion of the buccal mucosa that had remained unchanged for approximately two years. The lesion was located adjacent to a sharp, fractured cusp producing chronic mechanical irritation. Because of the patient's tobacco history and the persistence of the lesion, the referring dentist raised a provisional clinical suspicion of OSCC. On examination, however, the lesion was non-indurated, non-fixed, and non-ulcerated, with no documented increase in size or regional lymphadenopathy. The offending cusp was smoothened, followed by complete excision of the lesion. Histopathological examination demonstrated dense collagenized fibrous connective tissue with fibroblastic proliferation and an overlying hyperkeratotic, acanthotic epithelium without dysplasia, consistent with irritation fibroma. **Conclusion:** Persistent oral mucosal lesions in patients with tobacco exposure warrant careful evaluation, but tobacco history alone should not determine the clinical diagnosis. In this case, the absence of induration, fixation, ulceration, and progressive growth, together with an identifiable source of chronic mechanical irritation, supported a benign reactive process that was confirmed histopathologically. Excisional biopsy remains important when clinical findings are insufficient to exclude malignancy.

Keywords: irritation fibroma; traumatic fibroma; oral squamous cell carcinoma; tobacco use; oral mucosal lesion

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Introduction

Irritation fibroma, also referred to as traumatic fibroma, is a common benign reactive lesion of the oral mucosa that develops in response to chronic mechanical irritation, including cheek or lip biting, ill-fitting restorations, and sharp or fractured tooth surfaces [1]. Clinically, it usually presents as a slow-growing, sessile or dome-shaped nodule that is generally small and well circumscribed [2].

Persistent oral mucosal lesions in individuals with tobacco exposure may raise clinical concern for oral potentially malignant disorders or oral squamous cell carcinoma (OSCC), given the established association between tobacco use and oral carcinogenesis [3]. However, tobacco exposure alone does not establish a diagnosis of malignancy, and clinical assessment should also consider features such as induration, fixation, ulceration, progressive enlargement, and regional lymphadenopathy.

We report a case of irritation fibroma in a young tobacco user that was initially considered suspicious for OSCC because of the patient's tobacco history and the persistence of the lesion. The case emphasizes the importance of integrating the lesion's clinical characteristics and potential local irritants with histopathological findings when evaluating persistent oral mucosal lesions.

Case Report

A 29-year-old man presented with a persistent lesion of the left buccal mucosa that had been present for approximately two years. The patient reported an 11-year history of tobacco use. He had previously been examined

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by a dentist, who raised a provisional clinical suspicion of OSCC and referred him for further evaluation.

Intraoral examination revealed an approximately 1.8-cm lesion on the left buccal mucosa adjacent to a posterior tooth with a sharp, fractured cusp (Figures 1 and 2). The lesion was well circumscribed, non-ulcerated, and non-indurated, with no apparent fixation to the underlying tissues. The patient reported no appreciable increase in lesion size during the preceding two years. No regional lymphadenopathy was detected on clinical examination.

The lesion was considered clinically atypical for an invasive malignant lesion because of its stable size, lack of induration or fixation, and the presence of a clear local source of chronic mechanical irritation. Nevertheless, given its persistence and the patient's tobacco exposure, histopathological evaluation was considered necessary to establish the diagnosis. The fractured cusp was first smoothened to eliminate the apparent source of mechanical trauma, and the lesion was then completely excised.

Histopathological examination demonstrated dense, collagenized fibrous connective tissue containing proliferating fibroblasts and covered by hyperkeratotic, acanthotic stratified squamous epithelium. No epithelial dysplasia or malignant features were identified. The findings were consistent with irritation (traumatic) fibroma.

Histopathological Findings

Microscopic examination of the excised specimen showed stratified squamous epithelium with hyperkeratosis, including ortho- and parakeratosis, acanthosis, and focally elongated rete ridges. The epithelium overlying the more fibrous areas was relatively unremarkable. No epithelial dysplasia or atypia was identified.

The underlying connective tissue consisted predominantly of dense, collagenized fibrous tissue with increased fibroblastic proliferation and a variable number of small blood vessels, consistent with a chronic reactive fibrous process. No evidence of stromal invasion was observed. The overall histopathological findings were consistent with irritation (traumatic) fibroma and showed no features of epithelial malignancy [4, 5].



Figure 1. Intraoral View Showing the Buccal Mucosal Lesion Adjacent to the Posterior Dentition and the Associated Sharp Fractured Cuspal Edge.



Figure 2. Close-up View Showing a Well-circumscribed, Non-ulcerated Fibrous Nodule without Clinically Evident Surrounding Induration.

Management and Follow-up

The lesion was completely excised after elimination of the causative cuspal irritant. Postoperatively, the patient was prescribed paracetamol 500 mg orally every 6–8 hours as needed for pain, with a maximum daily dose of 3,000 mg, and 0.12% chlorhexidine gluconate mouthwash twice daily for 7–10 days. Tobacco cessation counseling was provided, and follow-up was scheduled to assess healing and monitor for recurrence.

Discussion

This case highlights the diagnostic challenge of evaluating a persistent oral mucosal lesion in a patient with a substantial tobacco history. Although the initial clinical concern for OSCC was reasonable, several features favored a benign reactive lesion. The absence of induration, fixation, ulceration, and progressive enlargement over approximately two years, together with the presence of a sharp fractured cusp immediately adjacent to the lesion, supported a diagnosis of chronic mechanical irritation. Irritation fibromas commonly develop at sites exposed to repeated local trauma, including the buccal mucosa, bite line, denture margins, and sharp dental surfaces [1, 6].

Histopathological examination confirmed the clinical impression by demonstrating dense collagenized fibrous tissue with fibroblastic proliferation and no epithelial dysplasia or stromal invasion [4]. Nevertheless, the clinical appearance of oral lesions can overlap substantially, and the absence of typical malignant features does not reliably exclude malignancy. Therefore, persistent or clinically suspicious lesions should undergo appropriate tissue sampling, particularly in patients with established risk factors.

The patient's 11-year tobacco history remains clinically important despite the benign diagnosis. Tobacco and areca nut exposure are established risk factors for oral potentially malignant disorders and OSCC, and tobacco exposure may occur for many years before clinically apparent disease develops [3]. Previous studies from North India have also documented tobacco and areca nut use among adolescents, emphasizing the importance of early and sustained cessation interventions [7- 9]. Accordingly, the patient's benign histopathological diagnosis should not diminish the need for tobacco cessation counseling and

continued oral health surveillance.

An important clinical lesson from this case is that tobacco history should increase vigilance but should not become the sole determinant of diagnostic judgment. A structured assessment incorporating lesion duration, growth pattern, consistency, fixation, ulceration, regional lymphadenopathy, and potential local irritants can help guide the differential diagnosis. In this case, biopsy was appropriate because of the lesion's persistence and the patient's tobacco exposure, while histopathological examination

In conclusion, irritation fibroma may present as a persistent oral mucosal lesion that raises clinical concern for OSCC, particularly in patients with tobacco exposure. In the present case, the absence of progressive growth, induration, fixation, and ulceration, together with a clear source of chronic mechanical irritation, favored a reactive lesion; histopathology confirmed the diagnosis. Persistent or suspicious oral lesions should nevertheless be evaluated systematically and biopsied when indicated. Management should address both the local traumatic factor and modifiable carcinogenic exposures, with appropriate follow-up to monitor healing and recurrence.

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Statement of Transparency and Principles

•The authors declare no conflict of interest.

•The study was approved by the Research Ethics Committee of the authors' affiliated institution.

•The study data are available upon reasonable request.

•All authors contributed to the implementation of this research.

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