

Can topical oral use of acetylsalicylic acid be a potential inducer of precancerous lesions?

O uso tópico oral do ácido acetilsalicílico pode atuar como potencial indutor de lesões pré-cancerosas?

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Abstract

This article describes a clinical case of a 54-year-old female patient, former smoker, who presented with a whitish lesion on the buccal mucosa. The patient reported a history of placing acetylsalicylic acid directly on the oral mucosa, a practice that may be associated with epithelial alterations, resembling precancerous conditions. Histopathological analysis revealed squamous mucosa with hyperkeratosis, parakeratosis, acanthosis, and mild chronic inflammatory infiltrate, ruling out malignancy. This case highlights the importance of clinicopathological correlation and warns of the risks associated with inappropriate topical use of drugs in the oral mucosa.

Keywords: acetylsalicylic acid; precancerous conditions; clinicopathological

Resumo

Este artigo descreve um caso clínico de uma paciente de 54 anos, ex-fumante, que apresentou uma lesão esbranquiçada na mucosa jugal. A paciente relatou histórico de aplicação de ácido acetilsalicílico diretamente sobre a mucosa oral, prática que pode estar associada a alterações epiteliais semelhantes a condições pré-cancerosas. A

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análise histopatológica revelou mucosa escamosa com hiperqueratose, paraqueratose, acantose e leve infiltrado inflamatório crônico, descartando malignidade. Este caso destaca a importância da correlação clinicopatológica e alerta para os riscos associados ao uso tópico inadequado de medicamentos na mucosa oral.

Palavras-chave: ácido acetilsalicílico; condições pré-cancerosas; clinicopatológico

Introduction

Acetylsalicylic acid (ASA) is widely used as an analgesic, antipyretic, and anti-inflammatory agent. However, its topical oral use, as reported by some patients, can induce mucosal lesions with features similar to precancerous conditions. Leucoplakic lesions and areas of hyperkeratosis are often clinically mistaken for early carcinomas, requiring histopathological confirmation¹⁻⁴. This case report aims to discuss the relationship between topical ASA use and histological alterations of the oral mucosa, emphasizing clinical and preventive relevance.

Case Report

Patient E.R.S., 54 years old, female, former smoker (quit 8 years ago), non-alcoholic, sought care at the Primary Health Unit (UBS) of Campo Limpo Paulista. She reported previous use of acetylsalicylic acid directly on the oral mucosa. Clinical examination revealed a whitish, irregular, elevated lesion on the buccal mucosa. The presumptive diagnosis was a precancerous or cancerous lesion.

The patient was referred to the specialized Maxillofacial Surgery Team at the Hospital de Clínicas of Campo Limpo Paulista, São Paulo, Brazil. After evaluation, an incisional biopsy was indicated. The specimen, approximately 0.9 cm in diameter and 0.5 cm in depth, was sent to the Pathology Service of the Faculty of Medicine of Jundiaí, São Paulo, Brazil. The study followed ethical principles according to CNS Resolution No. 510/2016 and No. 674/2022.

Results

Histopathological examination of the biopsy specimen from the buccal mucosa revealed a stratified squamous epithelium with marked architectural changes. The epithelial surface demonstrated pronounced hyperkeratosis, characterized by thickened keratin layers, consistent with chronic irritation. In addition, parakeratosis was observed, with retention of nuclei in the superficial keratinized cells, suggesting abnormal maturation of the epithelium.

The spinous layer exhibited acanthosis, with broadening and elongation of rete ridges, indicating epithelial hyperplasia. These changes were accompanied by irregular thickening of the epithelial strata, which clinically could mimic precancerous or malignant lesions. The basal layer, however, maintained its integrity, with no evidence of dysplasia, atypical mitotic figures, or cellular pleomorphism.

Within the underlying lamina propria, a mild chronic inflammatory infiltrate was identified, composed predominantly of lymphocytes and plasma cells, distributed diffusely and focally around small blood vessels. This infiltrate was associated with pigment leakage, likely secondary to hemosiderin deposition, reflecting minor vascular alterations. No evidence of invasive carcinoma or malignant transformation was detected.

The connective tissue stroma appeared moderately fibrous, with scattered fibroblasts and occasional dilated capillaries. The interface between epithelium and connective tissue showed irregular undulations, consistent with reactive epithelial proliferation. Importantly, despite the clinical suspicion of a precancerous lesion, the histological findings supported a diagnosis of frictional keratosis with reactive epithelial changes, excluding malignancy.

These results highlight the discrepancy between clinical impression and histopathological reality. While the lesion presented macroscopically as irregular, whitish, and elevated features often associated with leukoplakia or carcinoma the microscopic evaluation confirmed a benign process. The findings emphasize the critical role of biopsy and histological analysis in establishing definitive diagnosis and guiding appropriate management.

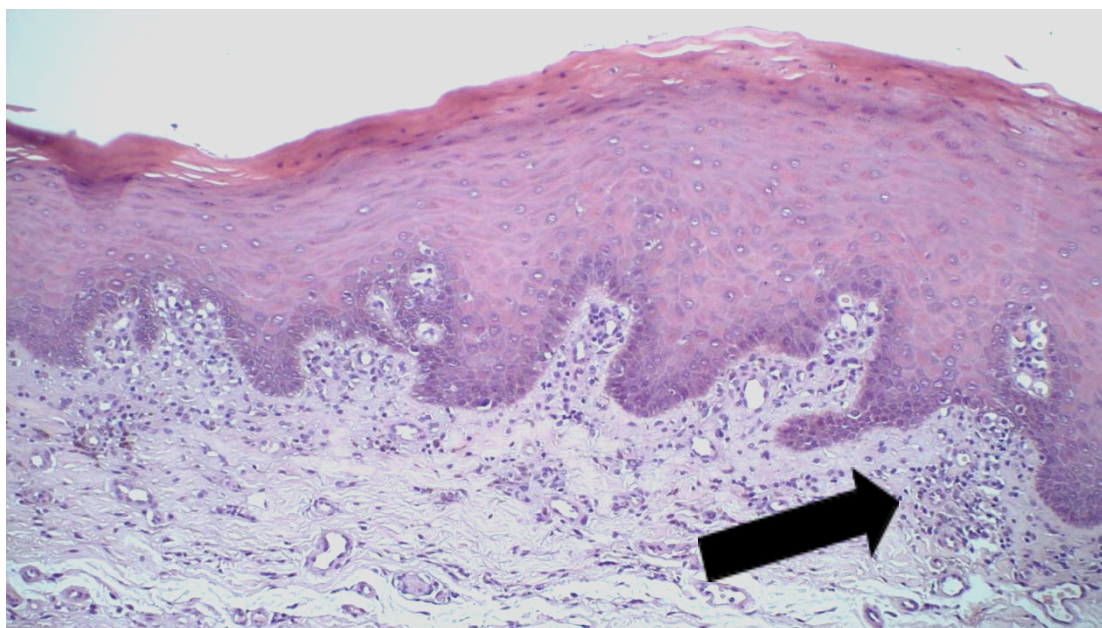


Figure 1. Photomicrograph of oral mucosa (buccal region). Squamous mucosa with hyperkeratosis, parakeratosis, acanthosis, and mild chronic inflammatory infiltrate in the lamina propria is observed (arrow) (40x magnification).

Discussion

This case illustrates the diagnostic complexity of oral lesions induced by chemical agents such as acetylsalicylic acid. Clinically, the lesion presented features suggestive of leukoplakia or early carcinoma⁵⁻⁷. However, histopathological examination ruled out malignancy, confirming a frictional lesion with reactive changes⁸.

The literature reports that topical ASA use can cause epithelial necrosis, ulceration, and hyperkeratosis. These alterations may mimic potentially malignant conditions such as leukoplakia or even squamous cell carcinoma⁹⁻¹². Clinicopathological correlation is therefore essential to avoid misdiagnosis and inappropriate therapeutic approaches¹³⁻¹⁵.

This case reinforces the need for educational campaigns on the risks of inappropriate topical drug use in the oral cavity. It also highlights the importance of biopsy and histological analysis as indispensable tools in dental and medical practice.

Conclusion

Topical use of acetylsalicylic acid on the oral mucosa can induce lesions with clinical features suggestive of malignancy. This case demonstrates that, despite alarming clinical appearance, the lesion was benign, underscoring the importance of histopathological evaluation. The report contributes to the literature by warning against inappropriate self-medication practices and their potential risks.

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