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Case Report

A Case of Necrotizing Sialometaplasia of the Hard Palate Treated with Tranexamic Acid and Sodium Azulene Sulfonate

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Abstract : Necrotizing sialometaplasia is a benign lesion affecting the minor salivary glands of the hard palate. This lesion may be clinically and histopathologically confused with malignant lesions. A case of a 47-year-old man who presented with necrotizing sialometaplasia on the left side of the hard palate is herein reported. A biopsy was performed, and the condition was diagnosed based on immunohistochemistry. The lesion receded following treatment with tranexamic acid and sodium azulene sulfonate. The symptom of painful swelling on the hard palate subsided within 10 days. The palatal lesion had disappeared completely 4 months later.

Key words : necrotizing sialometaplasia, hard palate, tranexamic acid, sodium azulene sulfonate

Introduction

Necrotizing sialometaplasia is a rare benign lesion of the minor salivary glands commonly occurring on the hard palate[1]. It is histologically characterized by squamous metaplasia of the salivary duct and acinar tissues of the minor salivary gland[2]. This lesion may be confused clinically and histopathologically with malignant lesions such as squamous cell carcinoma and mucoepidermoid carcinoma. Here, we report the case of necrotizing sialometaplasia of the hard palate treated with tranexamic acid and azulene sulfonate sodium, with an overview of its treatment and pathologic findings.

Clinical Report

A 47-year-old man presented to our department with painful swelling on the left side of the hard palate (Figure 1). One week previously, he was referred to a dentist for the irritative pain that was diagnosed as oral stomatitis. The lesion did not regress following the consumption of antibiotics. He had a habit of smoking more than 20 cigarettes each day and consumed alcohol every day. Clinical examination revealed a lesion on the left side of the hard palate measuring 25×20 mm, with an ulcer of size 10×5 mm on its posterior region. His blood analyses revealed elevated levels of amylase and salivary-type amylase isoenzyme (Table 1). A computed tomog-

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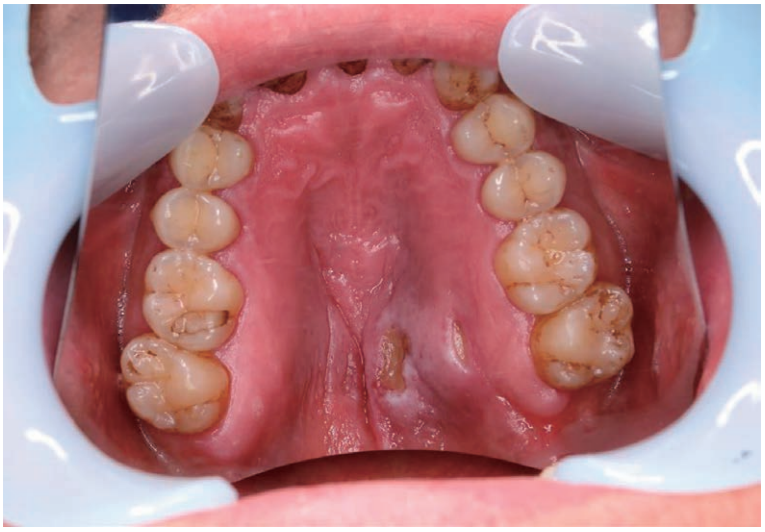

Fig. 1. Clinical image showing an ulcer on the posterior region of the left side of the hard palate

Table 1. Blood investigation results

Hematology	
WBC	8,480 / μl
RBC	519×10^4 / μl
Hb	16.1 g/dl
HCT	46.80%
PLT	28.8×10^4 / μl

Electrolyte	
Na	137 mEq/l
K	3.4 mEq/l
Cl	91 mEq/l
Ca	9.6 mEq/l

Serum chemistry	
AST	41 U/l
ALT	31 U/l
γ-GT	73 U/l
ALP	378 U/l
LDH	209 U/l
Crea	1.37 mg/dl
Glu	106 mg/dl
TP	6.8 g/dl
Amy	433 U/l
Amy-S	93.20%
Amy-P	6.80%

raphy scan showed no significant bone involvement of the lesion (Figure 2). Biopsy of the hard palate was performed under local anesthesia. Histopathological examination showed infiltration of chronic inflammatory cells involving the minor salivary glands associated with focal necrosis of the lobules. Areas of squamous metaplasia of the salivary ducts and acinar tissues were also observed (Figure 3). There was no definitive evidence of atypical cells in squamous metaplasia of the salivary duct cells and acinar cells (Figure 3b). Immunohistochemistry showed positive staining for calponin (Figure 4a) in the myoepithelial cells, positive staining for Ki-67 (Figure 4b) and CK-7 (Figure 4c) in the areas of squamous metaplasia of the salivary ducts, and negative staining for S100 proteins (Figure 4d), CK-8 (Figure 4e), and CK-18 (Figure 4f). Labeling

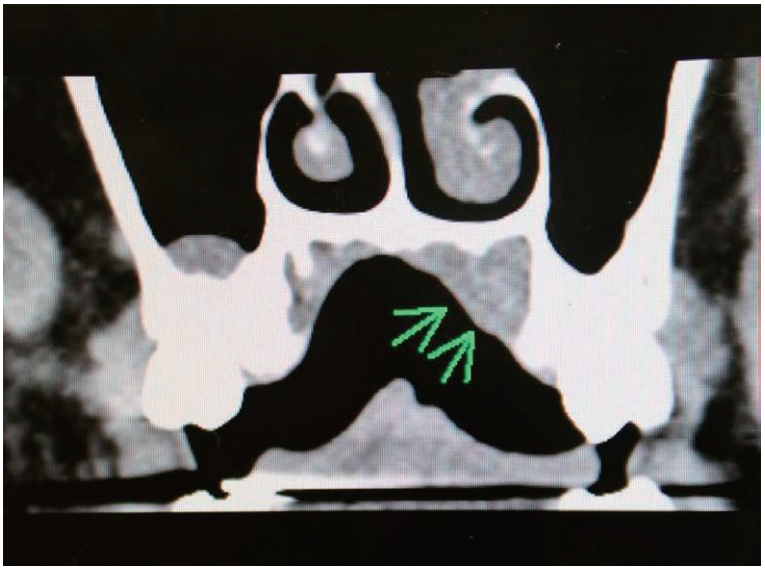

Fig. 2. Computed tomography scan showing a hard palate lesion (arrows) without bone involvement (coronal view)

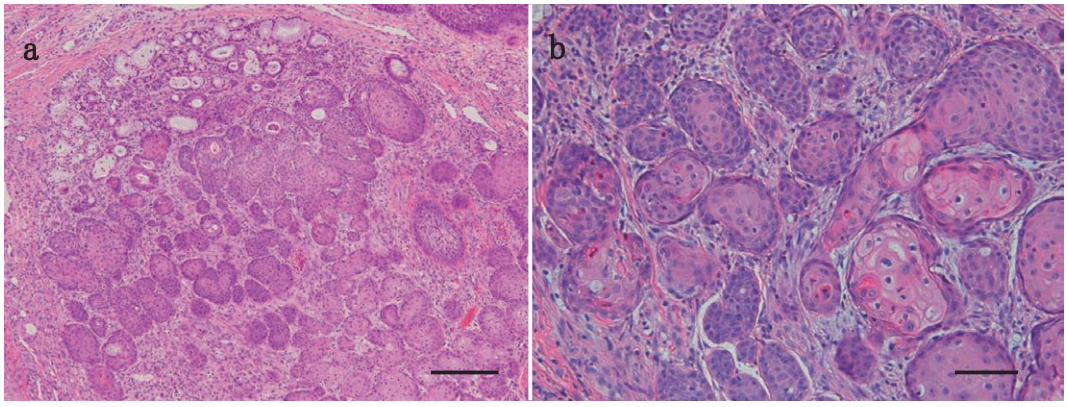

Fig. 3.
(a) Histological finding of a biopsy specimen showing squamous metaplasia of the salivary ducts and acinar tissues (H&E 40× magnification, scale bar 100 μm).
(b) No definitive evidence of atypical cells in the squamous metaplasia of the salivary duct cells and acinar cells (H&E 200× magnification, scale bar 40 μm).

index of Ki-67 was 9.1%. p-63 (Figure 4g) was expressed for most parts of the basal cells (Figure 4). The lesion was conclusively diagnosed as necrotizing sialometaplasia of the hard palate. The patient was treated with 250 mg of tranexamic acid thrice every day and an azulene sulfonate sodium gargle. The lesions tended to shrink, and their paresthesia improved about 10 days later. The lesion had resolved completely at the 4-month follow up. No subsequent recurrence was observed until the time of writing this report.

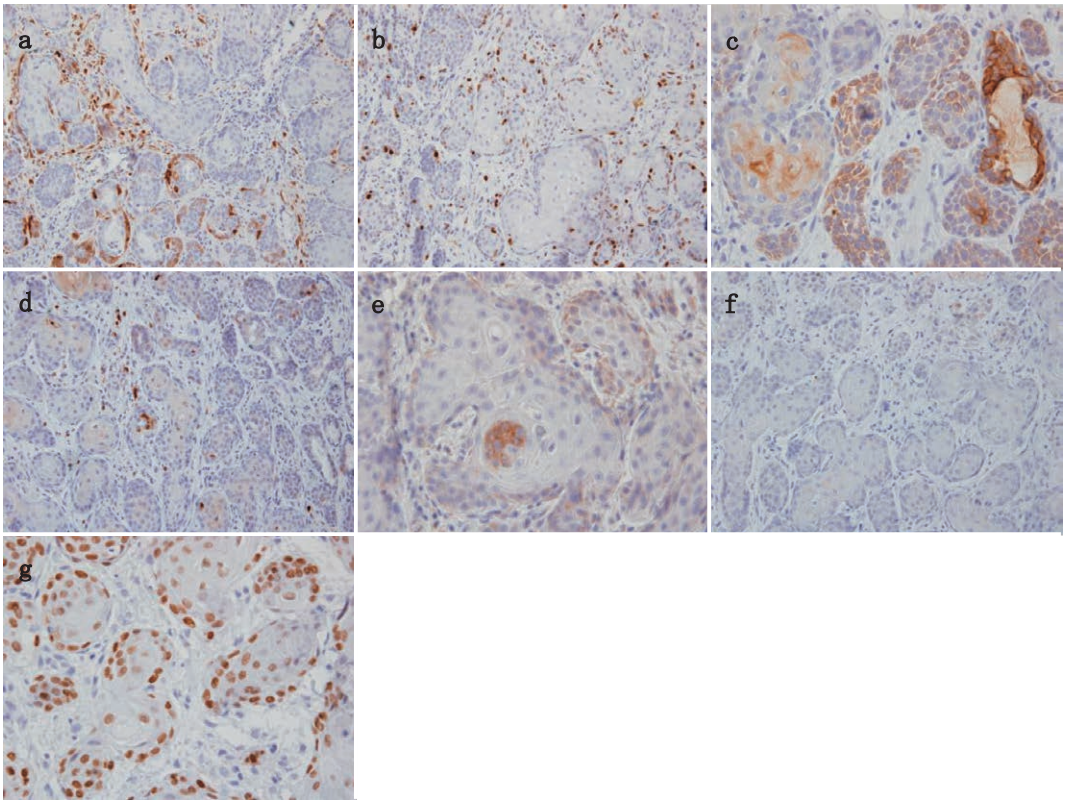

Fig. 4.
Immunohistochemical analysis showed positive staining for calponin (a) in the myoepithelial cells, positive staining for Ki-67 (b) and CK-7 (c) in the areas of squamous metaplasia of the salivary ducts, and negative staining for S100 proteins (d), CK-8 (e), and CK-18 (f). P-63 (g) was expressed for most of the basal cells. (original magnifications ×100).

Discussion

Necrotizing sialometaplasia was first described by Abrams *et al* in 1973 as a reactive necrotizing inflammatory process[1]. Clinically, this condition typically manifests as a deep ulcer of the hard palate. Necrotizing sialometaplasia can be divided into the following five histologic stages: infarction, sequestration, ulceration, reparative stage, and healed stage[3]. Histological features of this lesion include ulceration of the overlying epithelium, vascular proliferation, chronic inflammation, and partial necrosis of the minor salivary glands with squamous metaplasia of the salivary ducts and acinar tissues[3]. Necrotizing sialometaplasia is believed to be related to a physicochemical or biological injury of the blood vessels that produces ischemic changes. The latter leads to infarction of the minor salivary gland acini with necrosis, inflammation, and salivary duct metaplasia[4]. Numerous risk factors have been described to explain the onset of local ischemia in the minor salivary glands of the hard palate[5]. Smokers reportedly have a higher prevalence of palatal lesions[6]. In the present case, the cause was likely to be smoking, and the disease was considered to be in the ulceration or reparative stage; however, the direct cause of the lesion remains unknown.

The most important differential diagnoses of necrotizing sialometaplasia include squamous cell

carcinoma and mucoepidermoid carcinoma[7]. In some cases, distinguishing necrotizing sialometaplasia from carcinoma may be challenging and require a repeat biopsy. A supplementary diagnosis usuing immunohistochemistry has also been recommended[7]. The focal presence to absence of immunoreactivity for Ki-67 or low immunoreactivity for p53 suggested that the lesion was not malignant. Calponin and p-63 were detected in all stages of the salivary gland, preventing needless surgical resection. Immunohistochemical staining showed that p-63 positivity of the residual myoepithelial cells and CK-7 positivity of the metaplastic epithelial islands and the salivary ducts can help distinguish necrotizing sialometaplasia from similar conditions such as squamous cell carcinoma and mucoepidermoid carcinoma[8].

The treatment of necrotizing sialometaplasia does not require surgery[5]. The treatment of this lesion is avoidable due to its tendency for spontaneous healing and depends on whether the lesion is symptomatic[7]. Healing of the lesion is observed within 4−12 weeks. In the present case, the patient was treated with azulene sulfonate and tranexamic acid for inflammation control[6]. Necrotizing sialometaplasia usually does not recur; when properly diagnosed, it does not mandate surgical excision. Sodium azulene sulfonate is a water-soluble derivative of azulene, an anti-inflammatory component of chamomile that belongs to the family Asteraceae[9]. Clinically it is used as a therapeutic agent in the treatment of oral stomatitis. Tranexamic acid is a synthetic lysine analog that inhibits fibrinolysis, promotes clot stability, and reduces inflammation[10]. It is likely that tranexamic acid and sodium azulene sulfonate mitigated the healing of the lesion more rapidly than in the absence of special therapy.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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