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Case report

Oral nodular fasciitis associated with chronic pericoronitis – A case report

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ABSTRACT

Nodular fasciitis (NF) is a benign, reactive, proliferative lesion usually found in subcutaneous tissues or muscle fascia. It is originated from fibroblasts and myofibroblasts that are thought to be a response of tissue to injury. Because of the nature of rapid growth, rich cellularity and relatively high mitotic activity nodular fasciitis is often confused with sarcoma both clinically and microscopically. Accurate and early histopathological examination is important to avoid over treatment. We present a rare case of nodular fasciitis from buccal mucosa in a 48-year-old male patient who was also suffering from chronic pericoronitis. We believe chronic cheek bite due to pericoronotis may have some role to develop or provoke this reactive lesion.

1. Introduction

Nodular fasciitis was described first by Konwaler et al. [1]. It is also known as pseudo-sarcomatous fasciitis, pseudosarcomatous fibromatosis, proliferative fasciitis and infiltrative fasciitis. Rapid growth and intricate histological appearances lead nodular fasciitis as pseudo-sarcomatous lesion although it is a benign, non-neoplastic, proliferative, reactive lesion. The most common site is trunk and upper limbs when up to 20% have occurred in head and neck region [2]. The buccal mucosa is the most common intraoral site [2,3]. 3rd to 5th decade is the most frequent and rare in old adults over 60 years of age. The male female ratio is 23:15 [4]. The pathogenesis of NF remains unknown although trauma can be a causative factor [5–7]. It is a self-limiting lesion however, the histological diagnosis is unique because the differential diagnosis includes sarcoma. In immunostaining profile, NF is always positive for smooth muscle actin. Complete local excision with a maximum tissue margin is the most accepted treatment protocol [8,9].

This manuscript describes the clinical and histopathological features of a rare oral nodular fasciitis in left buccal mucosa.

2. Case report

A 48-years-old male patient was referred to our university hospital with the complaint of five months paresthesia in lower left buccal mucosa. He was suffering with pain and paresthesia and diagnosed initially as pericoronitis with impacted lower left 3rd molar. After extraction of the 3rd molar in a dental office, pain had improved but the paresthesia was persisted. Then he was referred to our hospital. On local examination, a palpable, tender, spherical shaped, hard and mobile tumor mass was found in lower left buccal mucosa (Fig. 1A). The surface of lesion was smooth with a 15 mm diameter. It was also palpable under the subcutaneous fat of buccinator muscle, which represents extra oral finding. There was no pain on palpation extra orally. The lymph nodes were hard and mobile. The tumor mass did not coalesce with mandible. The lesion was unnoticed by patient before the first visit. The color of lesion was unchanged. MRI revealed that, the lesion, measuring $35 \times 25 \times 10$ mm, was connected with lateral pterigoid muscle and the lower left ramus of mandible (Fig. 2). There was no sign of bone destruction in imaging. Initially, malignancy was suspected for its rapid growth so that incisional biopsy was done under local anesthesia in intraoral approach. After excluding malignancy, total lesion was excised under general anesthesia (Fig. 1B).

Histologic examination of hematoxylin and eosin stained sections revealed a marked nodular growth pattern without encapsulation (Fig. 3A). The lesion was slightly infiltrated into surrounding adipose tissue. In low-power view, most of tumor lesion

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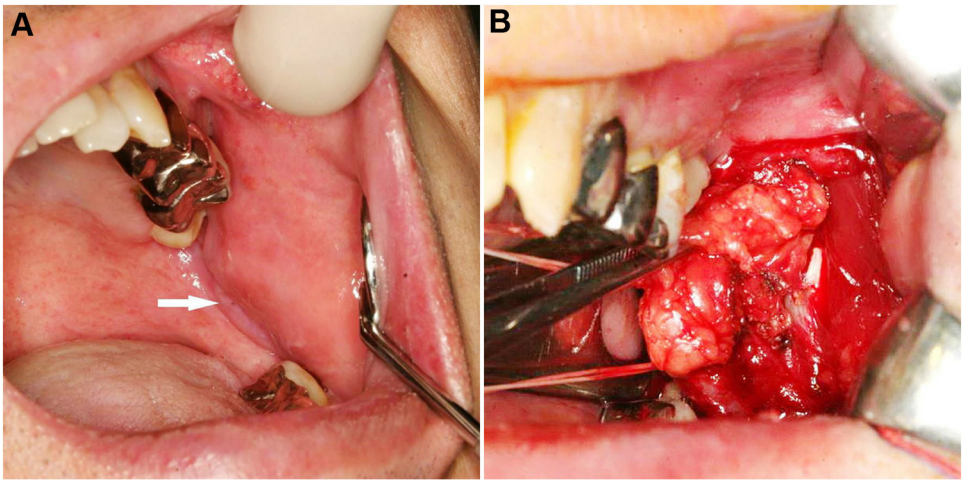

Fig 1. A. Initial photograph, showing clinical aspect of left lesion as a nodule in the buccal mucosa. B. The gross mass was excised as a single nodule and sent for histopathological examination.

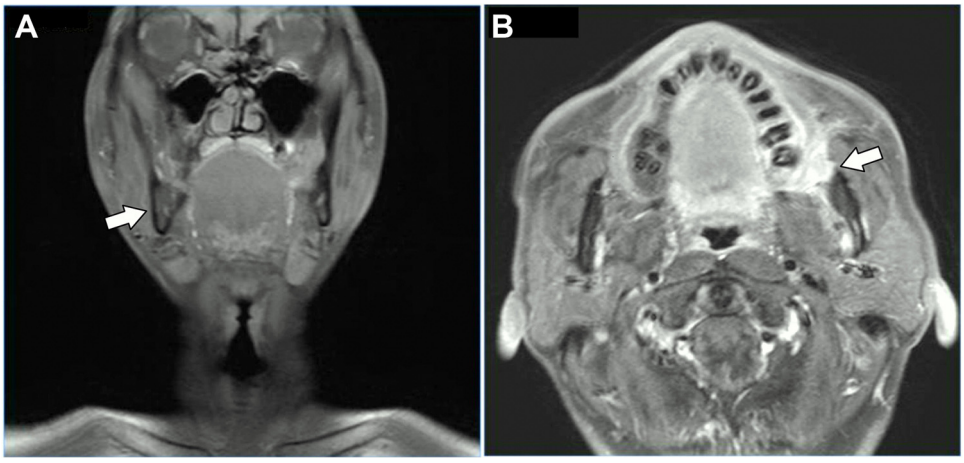

Fig. 2. Findings in MRI.

showed a well-demarcated nodular growth pattern (Fig. 3A). On higher magnification, areas with tissue culture- like growth pattern and hyalinized, keloid-like collagen were evident (Fig. 3B and D). Part of tumor had poorly defined borders with infiltration of surrounding adipose tissue (Fig. 3C). Tumor was composed of uniform spindle cells that arranged in short intersecting fascicles within a loose stroma with extravasated erythrocytes and scattered lymphocytes (Fig. 3D). There was no marked pleomorphism with abnormal mitotic figures. Immunohistochemisrty was performed and the spindle cells showed diffuse expression of smooth muscle actin (Fig. 4A) but anaplastic lymphoma kinase (ALK) was negative (Fig. 4B). CD34 (Fig. 4C) and STAT6 (Fig. 4D) were also all negative during this diagnosis.

The patient was otherwise healthy and recovered shortly. During 3 years of follow up there is no recurrence.

3. Discussion

Clinically, NF is described as a rapidly growing well-circumscribed mass of soft or elastic consistency, which adheres firmly to underlying tissues and structures. It is asymptomatic, often unnoticed, however there may be tenderness on the regional mucosa. This benign lesion is occasionally misdiagnosed as sarcoma because of its rapid growth without signs of infection [10,11].

The pathogenesis of NF remains unknown although trauma may be a causative factor [12]. Recurrence has not reported yet. Interestingly, de Carli et al. described a case with significant regression after incisional biopsy alone, indicating the prognosis [5]. The differential diagnoses are sarcomatoid carcinoma, fibrosarcoma, leiomyosarcoma, neurofibroma, inflammatory myofibroblastic tumor, low grade myofibroblastic sarcoma, myxofibrosarcoma, low grade fibromyxoid sarcoma and solitary fibrous tumors (SFT). A solitary fibrous tumor (SFT) is a rare mesenchymal neoplasm that arises first in the pleura and peritoneum. But subsequently it has been found in some extra-pleural sites also. Among them oral cavity is the most common. SFTs are characterized by alternating hypercellular foci, hypocellular sclerotic foci, short spindle or ovoid cells and most importantly CD34 positivity of spindled cells in immunostaining. On the other hand, Myxofibrosarcoma is typically infiltrative, and even when low grade, features include more nuclear atypia and pleomorphism than nodular fasciitis. In NF, typical mitotic figures may be seen, and a curvilinear vascular pattern with focally increased cellularity around the vessel is common. In contrast to NF, low grade myofibroblastic sarcoma is more cellular and composed of long fascicles that infiltrate the muscles in a destructive pattern. ALK staining was done and negative stain also confirms this lesion as NF (Fig. 4A) [13,14].

The possible reasons of misdiagnosis are high cellularity, mitotic activity, and infiltrative borders [2,4,12]. Where as the main coin-