Oral nodular fasciitis: a case report

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Abstract: Nodular fasciitis of the cheek is an extremely rare lesion of the oral cavity. It should be considered in the differential diagnosis of swellings in the oral mucosa. We describe a case of nodular fasciitis and discuss the difficulties of histological and clinical diagnosis of this condition. (J. Oral Sci. 43, 217-220, 2001)

Key words: nodular fasciitis; oral cavity.

Introduction

Nodular fasciitis (NF) is a benign proliferation of fibroblasts or myofibroblasts, often mistaken for a sarcoma because of its rapid growth, rich cellularity and high mitotic activity (1). NF presents as a rapidly growing, usually solitary mass or nodule, sometimes painful or tender. Grossly the lesion consists of soft tissue measuring up to 1.5-3.0 cm at its greatest diameter; a lesion exceeding 5 cm is unlikely to be a nodular fasciitis (2). All age groups can be affected, but it is most common from the third decade up to 60 years (3). Males and females are equally affected. The history is almost always short, usually 2 to 4 weeks on average. Neurological involvement is rare.

The lesions are located most frequently on the upper extremities, less frequently on the trunk, and least frequently in the head and neck region (4). Intraoral occurrence of NF constitutes a small percentage of the cases. The buccal mucosa is the most prevalent intraoral location, although to date only fifteen cases have been documented in the literature to our knowledge (5-13).

The cause of NF is unknown, but it is most likely an inflammatory reactive condition triggered by local injury or infection.

Case Report

A 35-year-old woman complaining of a submucosal mass in the left cheek was referred for consultation to our department. The lesion had been present for 4 months and was painful. There was no history of trauma or of an oral habit such as cheek biting.

A general physical examination revealed no significant abnormalities. Intraorally and extraorally, the mucosa and skin were normal, and there was no altered sensation in the adjacent nerves. Oral examination revealed a well circumscribed, indurated, palpable and movable mass 2 cm in diameter located between the buccal mucosa and the skin (Fig. 1).

Plain radiographs were negative for osseous pathology. The ultrasonographic scan revealed a single, well demarcated, hypoechoic cystic lesion in the left cheek (Fig. 2).

Although preoperative diagnosis of the lesion was difficult, the patient's medical history and clinical and radiographic examination indicated a benign lesion. Therefore, we planned to do an excisional biopsy. The mass was excised via an intraoral approach under local anaesthesia. It was easily dissected from the surrounding tissues (Fig. 3). The postoperative course was uneventful. There was no recurrence during the subsequent 15 months. Grossly, the lesion appeared to be a non-capsulated mass that measured 1.7 cm across its greatest diameter. The cut surface was generally firm and grey-white.

Microscopically, the lesion was composed of some fibroblasts arranged in a haphazard fashion in a mucoid...
matrix with other fibroblasts more compactly arranged in bundles in a denser collagenous matrix. The fibroblastic cells had spindle and oval shaped nuclei of variable size, and were noted in all sections (Fig. 4). There were no atypical cells. Mitoses were abundant, but they had a normal configuration. Inflammatory cells were sparse and consisted of small groups of lymphoid cells. These features confirmed the diagnosis of nodular fasciitis.

**Discussion**

In view of the aggressive clinical behaviour of these lesions, accurate histopathological identification is essential to prevent unnecessary radical and mutilating surgery (3). Price et al. (14) and Soule and Minn (15) have both emphasised the frequency with which these lesions have been mistakenly diagnosed as malignant. The macroscopic appearance is an unreliable criterion for diagnosis since the lesion may be sited in subcutaneous, intramuscular or fascial tissues.

In some cases, buccally located lesions covered by normal mucosa are reported to protrude from the oral cavity such that they can be clearly observed externally (5,6). The lesion in our case was visible neither intraorally nor extraorally. Upon palpation, it seemed as if there was a localised mobile marble deep in the tissue.

Nodular fasciitis is a benign, pseudoneoplastic proliferation of fibroblasts. These benign fibroblastic proliferations constitute a rather heterogeneous group of relatively well-defined conditions which are usually reactive rather than neoplastic in origin (16). Some of these conditions, such as nodular fasciitis, proliferative fasciitis, and proliferative myositis, grow rapidly and may reach their final size in a few weeks (17). They are often mistaken for sarcomas, yet they rarely recur, never develop metastases, and are cured by local excision (16). In our case, there was no recurrence 15 months postoperatively.

The exact cause of nodular fasciitis is unknown. Trauma
is believed to be an important etiologic factor in many cases, which lends support to the theory that this is a reactive pseudoneoplastic process. Nonetheless, trauma is documented in only a small percentage of cases, e.g., 5% in a review of 100 cases by Meister et al (4). Most lesions are located in the subcutaneous tissues immediately adjacent to a bony prominence, such as the zygomatic arch, angle of the mandible, or anterior mandible. These are sites of origin and insertion for the muscles of mastication and are often exposed to trauma. These findings support the opinion that NF is an exuberant fibroblastic reactive lesion. However, as there was no history of trauma or cheek biting, and the lesion was located deep in the buccinator musculature with no penetration into the subcutaneous tissue, we concluded that trauma was not an important etiologic factor in this case.

Nodular fasciitis is difficult to diagnose because many of its microscopic features are shared by other fibrous tumors such as fibromatosis, fibrous histiocytoma, fibrosarcoma and malignant fibrous histiocytoma (5,16). Their rapid growth and fingerlike extensions into surrounding tissues, similar to those seen in invasive malignant tumors, may also be alarming. A definitive diagnosis is important because of the rapid clinical course of the lesion (18). Clinicians as well as pathologists should be aware of this uncommon lesion; the correct histologic diagnosis must be made to differentiate it from sarcoma to avoid mutilating surgery or other unnecessary treatment. However, clinical signs should also accompany histological findings.

The lesion may not been easily diagnosed by light microscopy. In recent years it has been recommended to perform immunohistochemical studies if a diagnosis of NF is suspected (5,8,13,19). Immunostaining for cytokeratins and S-100 protein, both negative in nodular fasciitis, can be useful in differentiating between a lesion such as an undifferentiated carcinoma, pleomorphic adenoma, neurofibroma and neurilemmoma (6). Eversole et al. (13) have stated that immunomarkers such as S-100 protein, SMA, CD68, CD34 and vimentin are valuable adjuncts in differentiating nodular fasciitis from solitary fibrous tumors, although some tumors may harbor heterogeneous fibroblast phenotypes.

In conclusion, a diagnosis of nodular fasciitis should always be considered in the differential diagnosis of all fibrous lesions of short duration in the oral cavity (3). Once the correct diagnosis is established, the appropriate treatment is complete but conservative excision. When completely excised, the majority of lesions do not recur.

References
