

## Nodular fasciitis over the anterior wall of the maxillary sinus: a case report and review of the literature

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Nodular fasciitis (NF) is a benign tumor that grows extending from the muscular fascia to the subcutaneous tissue and, less frequently, into the underlying muscle. The cause of such proliferation is unknown, although trauma is believed to be important because of the location of these lesions over bony prominences. NF can often be confused with myofibromatosis or a sarcoma owing to its rapid rate of growth, rich cellularity, and mitotic activity. It is important, therefore, to distinguish the lesion from a more aggressive condition. NF that occurs in otherwise healthy individuals usually presents with a history of rapid growth, and is commonly found in the upper extremities and on the chest and trunk. We present a case of NF in a 39-year-old female patient occurring over the anterior wall of the maxillary sinus, along with a review of the literature. (Oral Surg Oral Med Oral Pathol Oral Radiol 2013;115:e10-e15)

Nodular fasciitis (NF) is a benign proliferation of fibroblasts that presents as a solitary, well circumscribed, rapidly growing soft tissue mass. It is most commonly located in the upper extremities, particularly on the volar aspect of the elbow, the chest, and the trunk. In adults, NF is rarely found in the head and neck region. NF can often be confused with myofibromatosis or a sarcoma owing to its rapid rate of growth, rich cellularity, and mitotic activity.<sup>1,2</sup> Therefore, it is also known as pseudosarcomatous fasciitis, pseudosarcomatous fibromatosis, and infiltrative fasciitis.<sup>1</sup> There is no sex predilection, and although NF occurs in all age groups, it is more common in the third through fifth decades of life.<sup>3</sup> Herein, we present a case report of NF over the anterior wall of the right maxillary sinus along with a review of the literature.

### CASE REPORT

A 39-year-old female patient referred by a physician presented to us with a swelling in the right cheek region. The patient complained of swelling that increased in size in the past 40 days. No relevant history was noted. Local examination revealed gross asymmetry of the face. On inspection, a well defined swelling was present over the right middle third of the face measuring 4 cm in diameter (Figure 1). Superiorly the swelling extended 0.5 cm below the infraorbital rim, inferiorly to the line joining the corner of the mouth and tragus of the ear, medially to the nasolabial fold, and laterally to the imaginary straight line joining the lateral canthus of the



Fig. 1. Preoperative right lateral profile.

eye and the inferior border of the mandible. No secondary changes of the skin were observed. Intraorally, vestibular obliteration was evident from the right upper lateral incisor to the right upper first premolar. No secondary changes of the mucosa seen. No associated carious teeth or periodontal disturbances were observed. Extraorally, on palpation no paresthesia was found. Swelling was soft to firm in consistency and tender on palpation. Swelling was mobile and not fixed to the underlying structures. Clinically, there were no palpable lymph nodes. Intraorally, on palpation the swelling was soft to firm in consistency. Fine needle aspiration was performed and was suggestive of NF.

Intraoral periapical radiographs taken in relation to the upper right canine and premolars confirmed no periapical pathology. Magnetic resonance imaging confirmed that the lesion was subcutaneous, arising above the anterior wall of

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Fig. 2. Preoperative axial view.

the maxillary sinus with no bony involvement (Figures 2 and 3). After thorough biochemical analysis, the patient was operated under general anesthesia.

Nasotracheal intubation was carried out through the left nostril and general anesthesia achieved. The tumor was approached intraorally via vestibular approach, and the incision was placed from the upper right canine to the upper right first molar. After proper exposure of the lesion (Figure 4), the entire tumor was excised (Figures 5 and 6). Intraoperatively, it was noticed that the tumor had an extension behind the zygomatic buttress. There was no bone involvement, and the swelling was in the suprapariosteal plane. The surgical area was well debrided, and closure was achieved in layers. On gross examination, the excised specimen was roughly spherical in shape. The cut surface of the lesion revealed a creamish white smooth glistening surface that was soft to firm in consistency (Figure 6).

Histopathologically, hematoxylin and eosin–stained sections revealed stroma with collagen fibers that were arranged irregularly. A few areas of stroma revealed herringbone pattern with plump and spindle-shaped fibroblasts (Figure 7). Scattered distribution of mast cells and lymphocytes with few multinucleated giant cells could be discerned (Figure 8). Areas of myxomatous degeneration and many endothelial-lined proliferating blood vessels could also be observed (Figure 9). Immunohistochemistry that was carried out revealed that the lesion was positively stained for the smooth muscle actin. The above clinical and histopathologic findings confirmed the tumor as NF that was present over the anterior wall of the maxillary sinus. The patient was prescribed analgesics

and antibiotics after surgery for the next 5 and 7 days, respectively. Recovery was uneventful with no recurrence as of the time of writing.

## DISCUSSION

The entity now known as NF was first described by Kornwaler et al. in 1954, when it was termed “subcutaneous pseudosarcomatous fibromatosis (fasciitis).”<sup>1</sup> In 1966, Mehregan published one of the largest reviews ever in dermatologic literature, describing the characteristic clinical appearance and histology. Analyzing data from a total of 331 cases, Mehregan defined the typical appearance, epidemiology, and histologic findings.<sup>2</sup> NF can be divided into 3 subtypes based on its relationship with the fascia: subcutaneous, intramuscular, and fascial. But uncommon clinical and pathologic variants of NF, such as intravascular, cranial, ossifying, and proliferative fasciitis, have also been described. Additionally, intradermal NF was reported by Goodlad and Fletcher in 1990.<sup>2</sup> Classic NF is a rapidly growing nodule, most common in young adults between the ages of 20 and 40 years with male and female patients equally affected<sup>2</sup>; only 10%-20% are found in individuals >50 years old.<sup>3,4</sup> Our patient was in her fourth decade.

NF is a benign lesion, but it can often be confused with myofibromatosis or a sarcoma owing to its rapid

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