



## Case report

# Nodular fasciitis in the masticator space eroding into the mandible: a case report



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## ABSTRACT

Nodular fasciitis is a benign soft tissue neoplasm of mesenchymal origin. It is usually characterized by rapid growth, infiltrative behavior, and heterogeneous histopathology, which can make diagnosis difficult and lead to delayed management. It has a 15%–20% occurrence rate in the head and neck and occurs rarely intraorally. In this report, we discuss an unusual case of nodular fasciitis originating in the masticator space and destroying the ascending ramus of the mandible. The treatment involved complete resection of the lesion and reconstruction with a temporomandibular joint prosthesis. At 24 months after surgery, the patient showed a return to normal function with no signs of recurrence.

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## 1. Introduction

Nodular fasciitis (NF) is a soft tissue proliferation of mesenchymal origin consisting of fibroblasts and myofibroblasts [1]. It often presents clinically with aggressive features including rapid growth, destruction of adjacent anatomic structures, and heterogeneous histopathology, making diagnosis difficult and delaying appropriate and timely treatment. It most commonly occurs in the upper extremities (48%), the trunk (20%), head and neck (15%–20%), and followed by the lower extremities (15%). It can occur in all ages, but most commonly in adults between ages 20–40 years [2]. Inflammatory and traumatic causes have been implicated, with trauma as a trigger in 10%–15% of cases [3]. Moreover, recent molecular cytogenetic studies identified the presence of USP6 fusion genes in NF lesions confirming a clonal neoplastic origin [4]. USP6 is a ubiquitin-specific protease involved in numerous cell processes, expressed primarily in testicular tissue, and has been shown to have

oncogenic activity [4]. This favors NF as a neoplastic growth and not as a reactive inflammatory lesion.

In this case report, we will present and discuss the management of an unusual case of NF of the masticator space eroding the ascending ramus of the mandible.

## 2. Presentation of case

A 37-year-old man presented to the oral and maxillofacial surgery clinic at the Montreal General Hospital with left preauricular swelling of 1-month duration. The patient is otherwise healthy, does not take any medication, has no allergies, is nonsmoker, and has no family history of malignant disease. On examination, the patient was afebrile, had no constitutional symptoms, and experienced no recent significant weight loss. The neck range of movement was within normal limits, there was no neck swelling or lymphadenopathy, and the facial nerve function was normal bilaterally. The mouth opening was limited to 20 mm and has been worsening over a 1-month period. There was no clicking or crepitus on temporomandibular joint (TMJ) palpation. A left preauricular firm and fixed nonmobile mass of approximately 2 × 2 cm was present with no associated overlying skin changes (Figure 1). Intraorally, the airway was intact, and a firm submucosal swelling was palpable in the left

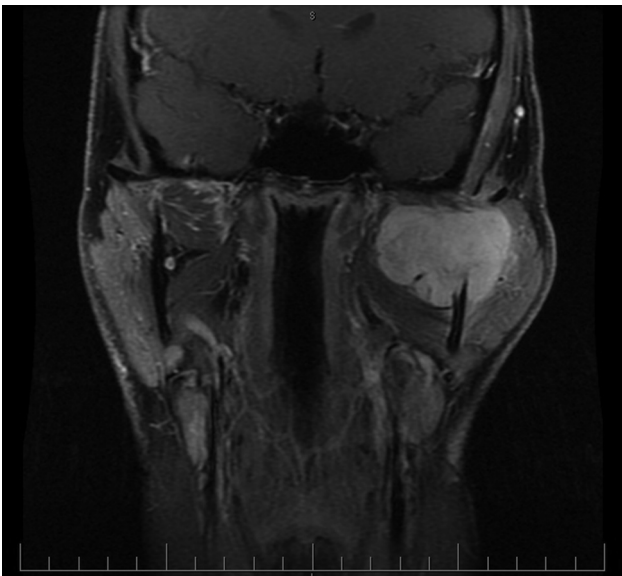
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**Figure 1.** Preoperative frontal photograph showing left preauricular mass.

masticator space with no associated erythema or signs of infection. Computed tomography and magnetic resonance (MR) images were taken, which confirmed the presence of a well-defined homogeneous mass measuring  $5.2 \times 4.5 \times 3.2$  cm in the left masticator region associated with destruction of the left ascending ramus and condyle (Figure 2). An ultrasound-guided biopsy was performed, but the analysis of the specimen was inconclusive showing mildly cellular spindle cell proliferation of myofibroblastic nature.



**Figure 2.** Preoperative imaging. Magnetic resonance imaging coronal view (T1-weighted image post-gadolinium contrast) showing the mass with uptake of contrast agent in the left masticator region.

The limitation in mouth opening continued to worsen rapidly over few days, and the lesion became associated with an intraoral firm and ulcerated swelling with rolled borders in the left posterior buccal mucosa. An intraoral incisional biopsy was obtained under general anesthesia, and the diagnosis was confirmed as NF. Intra-op, an initial injection of triamcinolone (10 mg) was performed into the center of the lesion after frozen section confirmation and was then followed with another injection of the same amount 6 weeks later using ultrasound guidance, with no significant change in the size of the lesion or clinical improvement. At that point, it was decided to resect the lesion and the involved structures and plan for reconstruction. A vertical ramus compartment resection was performed including resection of the mandibular condyle [5]. A custom-made TMJ prosthesis was used to reconstruct the defect. The postoperative care was uneventful, and 24 months later, the patient has good range of mandibular motion and esthetics with no evidence of recurrence on MR imaging (Figures 3 and 4). The post-operative panoramic x-ray shows stable hardware at 2 years (Figure 5).

### 3. Discussion

NF lesions can originate from the subcutaneous, intramuscular, or fascial regions; it can also be located intravascularly or intradermally, but these latter are rather rare [2,6]. The subcutaneous type is the most common (3-10 times more common than the other types) and usually presents as a subcutaneous nodule. The



**Figure 3.** Postoperative photograph 24 months after surgery.

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