CASE REPORT

Nodular fasciitis of soft tissue over the mandible

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SUMMARY

Nodular fasciitis (NF) is an unusual, benign condition which can mimic more sinister, sarcomatous lesions both clinically and histologically. This case report presents a 35-year-old male, with a rapidly growing mass on the border of his left mandible, referred to a specialist head and neck unit. The initial presentation, radiology and cytology were initially inconclusive and the possibility of a malignant process was considered. Final histology was that of NF, the treatment of which is complete surgical excision. Therefore, NF is an important differential to consider when assessing similar clinical presentations, as highlighted in this case report.

BACKGROUND

Nodular fasciitis (NF) presents as a solitary, superficial, rapidly progressive lesion. It has been suggested that a history of trauma can precipitate cases; however, the pathogenesis remains uncertain. It is a self-limiting fibrous neoplasm that usually occurs in subcutaneous tissue.¹

Although lesions on the upper limbs are most common, NF can present almost anywhere on the body apart from the viscera.² Presentation within the head and neck region is most common on the skin of the face.³ Patients most commonly present in the third to fifth decades, and there is no predilection for gender or race.⁴

Some features of NF can mimic malignant sarcomatous disease, such as fixation to underlying tissues, rapid growth and high mitotic activity.⁵ Below, we describe and illustrate a case of a rapidly proliferative growth on the border of the mandible, proving a diagnostic challenge.

CASE PRESENTATION

A 35-year-old male presented to ENT clinic with a 2-month history of a unilateral neck lump over the angle of his left mandible. During this time, the lump had fluctuated in size and was associated with no other symptoms. He was otherwise fit and well

and did not smoke or drink alcohol in excess. There was no history of trauma or foreign travel.

Examination revealed a 2 cm firm mass fixed to the mandible but free from the overlying skin (figure 1). There was no associated lymphadenopathy and the remaining ENT examination including dental assessment and upper aerodigestive tract endoscopy were unremarkable.

INVESTIGATIONS

Initial investigations of an ultrasound scan and fine needle aspiration (FNA) cytology elsewhere were inconclusive. Due to the concerning clinical picture, the patient underwent an ultrasound-guided core biopsy, which suggested NF and this was confirmed on subsequent surgical excision histology. Histologically, loose fascicles of bland spindle cells were present in oedematous fibromyxoid stroma (figure 2). The cells were positive for actin and negative for S100, B-catenin and cytokeratin.

MRI neck showed a well-defined mass overlying the left angle of the mandible approximately 22×22×18 mm in diameter, demonstrating heterogeneous enhancement postgadolinium (figure 3). The remaining fascial spaces imaged were unremarkable.

DIFFERENTIAL DIAGNOSIS

1. Submandibular gland lesion
2. Benign/malignant bony lesion
3. Skin adnexal tumour
4. Nerve sheath tumours, for example, Schwannomas
5. Soft tissue tumours, for example, myofibroblastic sarcoma (low grade)
6. Metastatic lymph node
7. Tuberculosis/non-tuberculous mycobacteria

TREATMENT

The patient underwent complete surgical resection of the lesion.

OUTCOME AND FOLLOW-UP

The patient underwent complete surgical resection 6 months following initial presentation to ENT clinic (figure 3).

He was followed up routinely in 6 weeks with histology results.

DISCUSSION

NF is a benign, rapid proliferation of fibroblasts originating in the deep fascia extending into muscle or subcutaneous tissue.⁶ Lesions can occur at any age, but presentation in the third to fifth decade is

Figure 1 Preoperative clinical photograph of lesion.

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Figure 2 Histology showing spindle cells arranged in storiform fascicles (H&E ×100).

the most common.⁷ The aetiology is uncertain, but preceding trauma is reported in 10%–15% of cases.⁸ Lesions usually occur in the upper limbs, particularly the forearms; involvement of the oral cavity is rare.⁹

A rapidly growing, solitary, non-inflammatory mass might suggest a malignant lesion and can cause significant anxiety in patients. NF is therefore an important differential to consider when assessing superficial lesions. Treatment is by total resection, and recurrence is very rare.⁴ If recurrence does occur, an alternative diagnosis should be considered, including consideration of a malignant process.¹⁰ NF has been reported to spontaneously regress following biopsy and incomplete surgical excision.⁵

Following a comprehensive review of the literature, there is one published case of NF on the border of the mandible in the adult population.¹¹ Cases have also been reported on the masseter.¹² A number of case series shed light onto the most frequent areas of presentation. One of the largest of these, in a review of 36 cases in Manchester, 16 involved the head and neck region.¹³ Of these, none presented on the mandible.

Figure 3 MRI reported to show 22×22×18 mm mass on the angle of the left mandible in the (A) axial and (B) coronal plain.

Learning points

- ▶ A diagnosis of nodular fasciitis should be considered when assessing solitary, firm, rapidly growing lesions on the head and neck.
- ▶ Management of nodular fasciitis is with complete surgical excision, and recurrence of lesions is very rare.
- ▶ Nodular fasciitis can be, but not always, associated with a history of local trauma.

The use of MR in the diagnosis of such lesions, although important, cannot be diagnostic. The differentiation between a benign or malignant process cannot be deciphered by imaging alone. As a result of the varying cell types constituting NF, different signals can be observed from the lesion. The clinician therefore must rely on histological assessment. Immunohistochemical staining provides the cornerstone to accurate histology. Cells within NF express actin positivity and are negative for cytokeratin, S100 and B-catenin.

NF has been documented in the head and neck region. However, the rarity of presentation on the border of the mandible is what makes our case of interest. The characteristics of this male's clinical presentation can lead to diagnostic uncertainty and overtreatment of what is essentially a benign condition. It is therefore imperative that surgeons achieve an accurate histological diagnosis prior to any intervention.

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