Nodular Fasciitis of the Masseter Muscle
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SUMMARY
Nodular fasciitis of the head and neck is a rare, benign, soft-tissue tumor that can clinically and radiologically mimic more serious processes such as sarcoma. A 47-year-old male presented with a palpable lesion in the upper left buccal region. Radiographically, an invasive process of the masseter muscle could not be excluded. Biopsy was performed. The mass was diagnosed as nodular fasciitis of the left masseter. The imaging and histological findings of this case are presented to highlight the importance of including this diagnosis in the differential of head and neck masses.

INTRODUCTION
The World Health Organization defines nodular fasciitis (NF) as a benign and reactive fibroblastic growth extending from the superficial fascia into the subcutaneous tissue or muscle.1 NF is a rare, idiopathic spindle-cell lesion that more commonly occurs in the upper and lower extremities and more rarely is seen in the head and neck. It is thought to be an reactive inflammatory process from prior trauma. Nodular fasciitis may be mistaken for more serious tumors such as sarcoma both on imaging and histology. In fact, when first described by Konwaler et al in 1955, it was referred to as pseudosarcomatous fibromatosis (fasciitis).2 It has also been referred to as pseudosarcomatous fibrous and infiltrative fasciitis. Treatment of choice is often complete surgical removal.3 We present a case of nodular fasciitis of the masseter muscle that underwent core biopsy that regressed spontaneously.

CASE REPORT
A 47-year-old male presented to the ENT clinic at Shands at the University of Florida in December of 2009 with a mass of the left masseter. Imaging ordered by his community otolaryngologist was concerning for sarcoma versus hemangioma. Upon further questioning, he reported prior trauma to the region as he had been hit by a car glass window approximately 5 months earlier. He initially had pain and intrusus but this resolved, and at presentation he only noted an asymptomatic small firm mass that was palpable intraorally on self examination. His past medical history was noncontributory.

Physical examination revealed a firm, nontender, immobile mass over the left masseter muscle that measured 3 cm x 2 cm. He subsequently underwent a core biopsy. Final pathology results were consistent with nodular fasciitis. The patient's postoperative course was uneventful and a one-month follow-up showed that his mass lesion was nearly imperceptible. Once given the diagnosis of benign nodular fasciitis, the patient chose clinical observation rather than further surgery for complete excision.

IMAGING
T1-weighted axial and T2-weighted coronal images of left masseter nodular fasciitis.

PATHOLOGY
Low magnification photomicrograph showing the typical histologic features of nodular fasciitis, including haphazardly arranged spindled cells with small foci of keloidal collagen, scattered chronic inflammatory cells, and extravasated erythrocytes (hematoxylin and eosin stain, original magnification x 100).

DISCUSSION
NF is a rare diagnosis and only 7-20% are found in the head and neck region.4 These lesions rarely recur, do not develop metastases, and are readily cured by local excision.5 However, the lesion is often self-limiting. Yanagisawa et al report a case of nodular fasciitis of the cheek that spontaneously regressed after biopsy.6 The authors concluded that NF regressed after transformation into a fibrous lesion following biopsy. The pathogenesis of NF is not known. It is believed that local injury or a local inflammatory process may trigger the myofibroblastic proliferation. However, a history of preceding trauma can be obtained from less than 15% of patients.7 MRI and computed tomography may be used in the initial evaluation of nodular fasciitis, but the findings are nonspecific. Radiographically the lesion typically is round and discrete but may extend past fascial planes and have atypical borders. Histologic analysis is required but too may be confusing. As with malignancy as it can exhibit high cellularity, focal nuclear atypia, and mitoses. However, nodular fasciitis spindle cells contain vimentin, and smooth-muscle–specific actin. They do not contain desmin, keratin, or S-100 protein, for which sarcoma spindle cells stain positive.8

CONCLUSIONS
NF is an uncommon benign proliferation of fibrous tissue. It should be considered on the differential of masses of the head and neck and be distinguished from a malignant process.

REFERENCES

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