CASE REPORT

Nodular Fasciitis in the Tongue—a Mimicker of Malignancy: Case Report and Review of Literature

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Abstract Tongue cancer surgery involves wide excision of tumors with negative margins. It can cause significant morbidity if adequate function is not restored with the use of grafts or flaps if the defect is large. Nodular fasciitis is an uncommon entity in the tongue and a mimicker of malignancy. Preoperative diagnosis avoids mutilating radical surgery. The lesion is benign and the recurrence potential is very low with marginal excision.

Keywords Nodular fasciitis · Tongue · Benign

Introduction

Carcinoma of the anterior tongue commonly presents as ulceroproliferative growth or nonhealing ulcer. Occasionally, they may present as deeply indurated lesions with no ulceroproliferative component. Any tethering or fixity of the tongue to the floor of the mouth (ankyloglossia) usually indicates advanced disease. Nodular fasciitis is a rare entity in the tongue. The clinical and radiological features mimic malignancy.

Case Report

A 78-year old male not addicted to tobacco or alcohol presented with complaints of recent onset of difficulty in tongue

movements and some difficulty in speech. Examination of the tongue revealed an induration of size 2x1 cm on the ventral surface of the anterior tongue to the left of the midline (Fig. 1). The induration extended in to the floor of the mouth with mild ankyloglossia. There were no clinically relevant neck nodes. A biopsy of the lesion under local anesthesia was inconclusive with severe crush artifact. MRI of the tongue showed a contrast enhancing irregular lesion in the anterior tongue left of midline abutting the geniohyoid and genioglossus muscles with no infiltration. No significant neck nodes were seen on the MRI (Figs. 2 and 3).

Deeper incision biopsy under general anesthesia was reported as nodular fasciitis of tongue. Patient was counselled and transoral excision of the lesion was done. The lesion felt nodular, nonencapsulated, and extended into the floor of the mouth but without any infiltration in to the extrinsic muscles of the tongue. The defect was closed primarily and patient had minimal postoperative morbidity (Figs. 4 and 5).

Final histopathology showed nodular fasciitis of tongue with no evidence of malignancy. Patient remains free of recurrence at 18 months of follow-up.

Discussion

Nodular fasciitis was first described by Konwaler in 1955 as a subcutaneous pseudosarcomatous fibrosis with a description of eight cases as a new histological entity “with emphasis on the seemingly fulminant but apparently benign clinical course” [1]. It commonly arises within the subcutaneous tissues of the extremities and trunk and is known to occur in the head and neck areas. In the head and neck region, it has been reported in the facial skin around the nose and infra orbital area, angle of the mandible, and submental area [3]. Intraorally, it can occur in the vestibule, labial and buccal

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Fig. 1 Indurated lesion on the ventral surface of the tongue

mucosa, mandibular alveolar ridge, or tongue [2]. Only five cases of nodular fasciitis involving the tongue have been reported previously, most recently by Shunsuke H [4].

Nodular fasciitis is easily misunderstood as malignant as clinical findings and radiographic features are similar [5]. It mimics sarcoma in most areas due to the subcutaneous or submucosal location. Tongue lesions are usually suspected as squamous cell carcinomas or sarcomas or rarely metastases from other primary tumors. As nodular fasciitis is a benign tumor, the morbidity of radical surgical procedures can be limited if the diagnosis is made preoperatively [6].

On CT and MR imaging, nodular fasciitis is seen as a relatively well-defined, soft-tissue mass located superficially. Deep-seated lesions, mostly of intramuscular type, tend to be large and have ill-defined margins [6]. The signal intensity of the lesions with myxoid or cellular histology is higher than that of muscle on T2-weighted images, whereas lesions with fibrous histology present as markedly hypointense to the surrounding muscles on all pulse sequences [7–9].

Preoperative diagnosis of tongue malignancy is commonly done by incision biopsy or punch biopsies in case of larger proliferative growths. In this case, the initial biopsy was reported to have severe crush artifact. The lesion was cellular but no squamous cells were seen, and the pathologist did not

Fig. 2 Preoperative MRI-lesion abutting the genioglossus muscle on the left side

Fig. 3 Preoperative MRI showing lesion in anterior tongue

suspect malignancy in contrast to the clinical findings. The biopsy was repeated and was reported as nodular fasciitis.

Nodular fasciitis accounts for 0.025 % of all pathologic diagnosis [10]. In the subcutaneous areas, it can be diagnosed on fine needle aspiration cytology but difficulties in reporting are observed [11]. NF has been mistaken as sarcoma, metastatic lymph nodes, papillary thyroid carcinoma, Burkitt's lymphoma, pleomorphic adenoma, or as a vascular lesion [12].

Nodular fasciitis needs only marginal excision without worry of recurrence [13]. In the retrospective analysis done by Bernstein, recurrences are not known to occur in nodular fasciitis and any recurrence seen must lead to revision of the original histological diagnosis [14].

In tongue lesions, wide excision is done in case of malignant tumors. If the resultant defect is significant, local or free flaps may be needed to restore adequate function and speech. In masquerading lesions such as nodular fasciitis, radical surgery causes harm without benefit. Hence, if the initial biopsy

Fig. 4 Postoperative status

Fig. 5 Postoperative status with no deformity of tongue

is inconclusive, repeat biopsy is warranted to plan adequately for surgery.

Conclusion

Nodular fasciitis is a rare pathology among tongue lesions. This case highlights the importance of preoperative diagnosis which helped to prevent unnecessary radical surgery.

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