
CASE REPORT**A rare case of angiofibroma of the tongue***Seema Agrawal^{1*}, Shubhangi Gupta¹, Rohit Kothari¹, Manjaree Morgaonkar¹**¹Department of Dermatology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune-411018 (Maharashtra) India*

Abstract

Angiofibroma is a benign fibrovascular tumour that arises almost exclusively in the nasopharynx of adolescent males. Occurrence at other sites is uncommon and involvement of the mouth is rarer still, so the lesion is seldom suspected before biopsy. A 32-year-old woman presented with a painless, slowly enlarging nodule on the dorsum of the tongue of four months' duration, clinically indistinguishable from pyogenic granuloma, haemangioma or irritation fibroma. The lesion was excised completely under local anaesthesia. Microscopy showed a fibrocollagenous stroma containing irregular, thin-walled vessels that lacked a muscular coat, without lobular architecture, cytological atypia or mitotic activity. Vimentin was expressed by the stromal cells and CD34 outlined the endothelium, while S100 protein was not expressed. There was no recurrence at six months. The report sets out the histopathological and immunohistochemical features, and the negative markers, that separate this lesion from the commoner fibrous and vascular swellings of the oral mucosa.

Keywords: Immunohistochemistry, Mouth Neoplasms, Diagnosis Differential, Antigens CD34

Introduction

Angiofibroma is a benign fibrovascular neoplasm whose classic form, juvenile nasopharyngeal angiofibroma, occurs almost entirely in the nasopharynx of adolescent boys [1,2]. Tumours arising away from the nasopharynx form a small minority of cases and have been reported in the nasal cavity, the maxillary sinus and, occasionally, the mouth [2,3]. Origin from the tongue is limited to isolated reports [1]. Because the swelling offers no distinguishing clinical sign, it is regularly taken for one of the commoner reactive or vascular lesions of the oral mucosa, and the diagnosis therefore rests on microscopy supported by immunohistochemistry. We describe such a lesion in an adult woman and set out the histological and immunohistochemical features that separate it from its mimics.

Case Report

A 32-year-old woman attended the dermatology outpatient department with a painless swelling on the dorsum of the tongue of four months' duration that

had enlarged gradually. There was no bleeding, pain, ulceration, dysphagia, antecedent trauma or previous oral procedure, and no similar lesion elsewhere. Systemic enquiry, past medical history and family history were unremarkable. On examination there was a solitary, well-circumscribed, firm, non-ulcerated nodule approximately 1.2 cm in diameter on the dorsum of the tongue (Figure 1). It was non-tender, did not bleed on manipulation, and there was no cervical lymphadenopathy. Routine haematological investigations were within normal limits. Pyogenic granuloma, haemangioma, irritation fibroma, acantholytic acanthoma and angiofibroma were considered clinically. The lesion was excised in toto under local anaesthesia with careful intraoperative haemostasis.

Histopathological examination showed an intact stratified squamous epithelium overlying a fibrocollagenous stroma composed of bland plump and stellate fibroblasts set in collagen of varying density

(Figure 2). Scattered irregularly through the stroma were thin-walled vascular channels of unequal calibre, ranging from slit-like to ectatic, lined by a single layer of flattened endothelium and lacking both a smooth muscle coat and an elastic lamina. The vessels showed no lobular grouping. There was

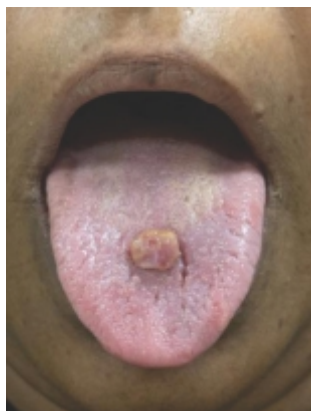


Figure 1: Solitary, well-circumscribed, firm, non-ulcerated nodule approximately 1.2 cm in diameter on the dorsum of the tongue

no surface ulceration, no significant inflammatory infiltrate, no nuclear pleomorphism, no necrosis and no mitotic activity. The appearances were those of an angiofibroma as defined in the current World Health Organization's (WHO) classification of head and neck tumours [4].

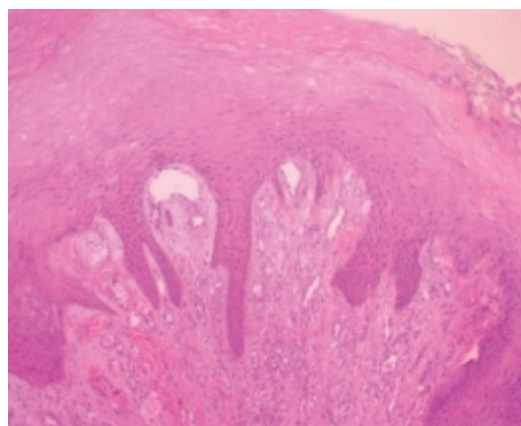


Figure 2: Photomicrograph showing a fibrocollagenous stroma containing irregular, thin-walled vascular channels that lack a smooth muscle coat, beneath an intact stratified squamous epithelium (H&E, ×100)

Table 1: Histopathological and immunohistochemical differential diagnosis of a fibrovascular nodule of the tongue

Lesion	Key histopathological features	Immunoprofile	References
Angiofibroma (present case)	Fibrocollagenous stroma with bland plump and stellate fibroblasts; irregularly distributed thin-walled vascular channels lacking a smooth muscle coat and elastic lamina; no lobular architecture; no atypia or mitoses	Vimentin positive; CD34 highlights endothelium; S100 protein negative	1, 4
Solitary fibrous tumour	Patternless arrangement of spindle to ovoid cells, ropey stromal collagen and branching staghorn (haemangiopericytoma-like) vessels	Nuclear STAT6 positive in almost all cases; CD34 positive	6

Continued...

Myofibroma	Biphasic nodules of myoid spindle cells alternating with a cellular haemangiopericytoma-like zone	Smooth muscle actin positive; nuclear STAT6 negative	7
Lobular capillary haemangioma (pyogenic granuloma)	Distinct lobules of proliferating capillaries with surface ulceration, stromal oedema and a mixed inflammatory infiltrate	CD31 and CD34 positive endothelium	8
Capillary or cavernous haemangioma	Closely packed or dilated blood-filled channels lined by bland endothelium with scant intervening fibrous stroma	CD31 and CD34 positive endothelium	3
Irritation (traumatic) fibroma	Dense, relatively avascular bundles of hyalinised collagen with sparse fibroblasts	Vimentin positive; no significant vascular component	4

On immunohistochemistry the stromal cells expressed vimentin, confirming their mesenchymal nature, and CD34 outlined the endothelial lining of the vascular channels. S100 protein was not expressed, excluding a lesion of neural or melanocytic derivation. The diagnosis of angiofibroma was made on the combination of these findings with the morphology described above. Postoperative recovery was uneventful and there was no recurrence at six months of follow-up.

Discussion

Whereas the juvenile nasopharyngeal form is restricted to adolescent males, tumours arising elsewhere occur across a wider age range and show far less male predominance [2,3], as in the present patient, an adult woman. Involvement of the mouth is distinctly uncommon and the tongue is among the least frequently reported sites [1].

Clinically the lesion cannot be told apart from pyogenic granuloma, haemangioma, vascular malformation or fibroma [1], and the epistaxis and nasal obstruction that betray the nasopharyngeal tumour are naturally absent. Imaging demonstrates vascularity and extent, but a small superficial

mucosal swelling is reasonably taken straight to excision biopsy [5].

The diagnosis is therefore settled on microscopy, and immunohistochemistry serves mainly to exclude the alternatives. Solitary fibrous tumour is the closest mimic, since it too shows a collagenous stroma, prominent thin-walled vessels and CD34 reactivity; it is distinguished by its patternless spindle cell arrangement, ropey collagen and branching staghorn vessels, none of which was present here, and nuclear expression of STAT6, the immunohistochemical surrogate of the NAB2-STAT6 fusion, is the marker of choice where morphology leaves the question open [6]. Myofibroma shares the haemangiopericytoma-like vasculature but is biphasic and expresses smooth muscle actin [7]. A negative S100 protein excluded neural and melanocytic tumours. The lobular capillary proliferation, surface ulceration and inflammatory infiltrate of pyogenic granuloma [8] and the well-formed channels of a haemangioma [3] were both absent in the present case. Table 1 sets out these distinctions. Careful assessment of haematoxylin and eosin sections remains the first step in the

evaluation of any oral swelling [9], and immunohistochemistry is now a routine adjunct in the assessment of oral lesions [10].

Excessive intraoperative bleeding is the main surgical concern. Unlike the nasopharyngeal tumour, oral angiofibromas are usually small and can be removed completely without preoperative embolisation [1,5], and recurrence after complete excision is uncommon. The limitations of this report are its single-case nature and the restricted immunohistochemical panel, since STAT6 and smooth muscle actin were not available at the time of reporting and the diagnosis rested on morphology together with vimentin, CD34 and S100. Given the

rarity of the lesion at this site, however, each further case adds to the collective experience.

Conclusion

Angiofibroma of the tongue is rare and imitates ordinary benign swellings of the oral mucosa. A broad differential should be kept in mind for any painless nodule at this site, and the diagnosis established on histopathology together with a focused immunohistochemical panel in which the negative markers carry as much weight as the positive ones. Where solitary fibrous tumour remains a possibility on morphology, STAT6 should be included in that panel.

References

1. Alkheder A, Yousfan A. Extranasopharyngeal angiofibroma in the tongue: a case report with literature review. *Ear Nose Throat J*. 2025. Epub ahead of print.
2. Windfuhr JP, Remmert S. Extranasopharyngeal angiofibroma: etiology, incidence and management. *Acta Otolaryngol*. 2004; 124(8):880-9.
3. Stokes SM, Castle JT. Nasopharyngeal angiofibroma of the nasal cavity. *Head Neck Pathol*. 2010; 4(3):210-3.
4. WHO Classification of Tumours Editorial Board. Head and neck tumours. 5th edition. Lyon: International Agency for Research on Cancer; 2022.
5. Schick B, Kahle G. Radiological findings in angiofibroma. *Acta Radiol*. 2000;41(6):585-93.
6. Doyle LA, Vivero M, Fletcher CDM, Mertens F, Hornick JL. Nuclear expression of STAT6 distinguishes solitary fibrous tumor from histologic mimics. *Mod Pathol*. 2014; 27(3): 390-5.
7. Smith MH, Islam NM, Bhattacharyya I, Cohen DM, Fitzpatrick SG. STAT6 reliably distinguishes solitary fibrous tumors from myofibromas. *Head Neck Pathol*. 2018; 12(1):110-7.
8. Shirbhate U, Bajaj P, Pakhale A, Durge K, Oza R, Thakre S. Electrocautery-assisted management of unilateral pyogenic granuloma: a case report. *Cureus*. 2024;16(4): e57794.
9. Nath N, Arakeri SU. Comparative study of crystal violet stain and haematoxylin and eosin stain in the assessment of mitotic figures in dysplastic and malignant lesions of oral cavity. *J Krishna Inst Med Sci Univ*. 2021;10(2): 110-22.
10. Doctor P, Arakeri SU, Patil V. Expression of proliferative marker Ki-67 in epithelial dysplasia and squamous cell carcinoma of oral cavity. *J Krishna Inst Med Sci Univ*. 2023;12(2):35-47.

*Author for Correspondence:

Seema Agrawal Department of Dermatology, Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune-411018, Maharashtra
Email: seema.ag9683@gmail.com Cell: 917501139664

How to cite this article:

Agrawal S, Gupta S, Kothari R, Morgaonkar M. A rare case of angiofibroma of the tongue. *J Krishna Inst Med Sci Univ*. 2026; 15(2): 175-178

■ Submitted: 11-Jan-2026 Accepted: 13-March-2026 Published: 01-April-2026 ■