

## CASE REPORT

# Solitary angiokeratoma of the tongue in adults

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### Abstract

Angiokeratomas are vascular malformations that usually appear as multiple or solitary cutaneous plaques. Several clinical variants have been described, with the same underlying histopathological lesion. Mucosal involvement, including the oral cavity, is occasionally found either as a component of the systemic variety, called angiokeratoma corporis diffusum, or associated with cutaneous lesions in more locations. Isolated oral involvement seems to be rather infrequent and only five cases have been described in adults in the world literature. We herein report another case of this rare entity affecting a 62-year-old woman in the dorsum at the tip of the tongue. This is the first report including an immunohistochemical study to discard a lymphatic origin of the tumor.

**Keywords:** angiokeratoma, tongue, lymphatic tumors, adults.

### □ Introduction

Angiokeratomas are capillary vascular malformations, characterized clinically by solitary or multiple papules or plaques. Several clinical types have been described depending on the multiplicity and location of the lesions [1]. The localized forms can be further classified in (1) solitary papular angiokeratomas; (2) scrotal or vulval angiokeratomas; (3) multiple congenital angiokeratomas; and (4) bilateral angiokeratomas in the dorsum of hands and feet (Mibelli type). The systemic form is known as angiokeratoma corporis diffusum and is usually linked to some metabolic disorders, mainly Fabry's disease and also fucosidosis. Mucosal involvement, including the oral cavity, has been described both in systemic forms and as a component of localized ones [2, 3]. However, solitary angiokeratomas of the oral mucosa, unassociated with lesions elsewhere, seem to be a rather infrequent occurrence and we have only found five cases in adults after a thorough Medline search of the English literature. We herein report a new case and comment on the immunohistochemistry confirming its nature.

### □ Patient, Methods and Results

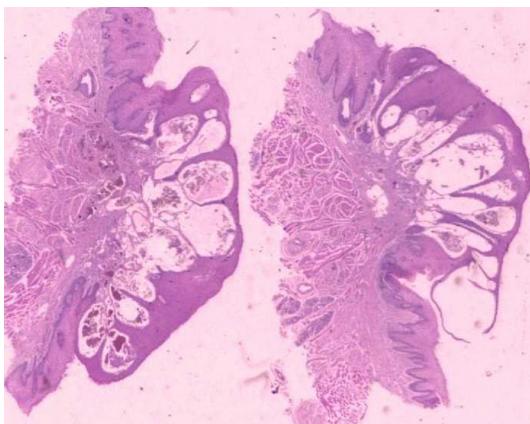
A 61-year-old Caucasian woman came to medical attention referring a purple-red papule in the dorsum of the tongue near the tip. She had noticed the lesion five months before, referred no traumatism in the area and had no associated symptoms. Her past medical history was irrelevant, but for symptomatic hypothyroidism for which she received hormone-replacing therapy. She had first consulted her general practitioner, who considered the lesion corresponded to a traumatic hematoma and

only recommended her hygienic measures and follow-up. As the lesion did not improve and occasionally bled, the patient consulted at the Department of Maxillofacial Surgery referred by her GP. The physical examination only revealed a 4-mm purple lesion at the tip of the tongue, which bled easily (Figure 1). The lesion was excised with a clinical presumptive diagnosis of pyogenic granuloma.



Figure 1 – Vascular lesion affecting the tip of the tongue.

The biopsy specimen was fixed for 24 hours in buffered formaldehyde and paraffin-embedded. Serial sections stained with Hematoxylin-Eosin revealed dilated vascular spaces in the papillary dermis, associated with hyperkeratosis, papillomatosis and acanthosis of the overlying epidermis (Figure 2). In some of the vascular lumens, we found small thrombi (Figure 3). The main differential diagnosis on histopathological grounds was lymphangioma, despite hyperkeratosis is not usually seen in this tumor. To exclude this diagnosis, we performed immunohistochemical stains.

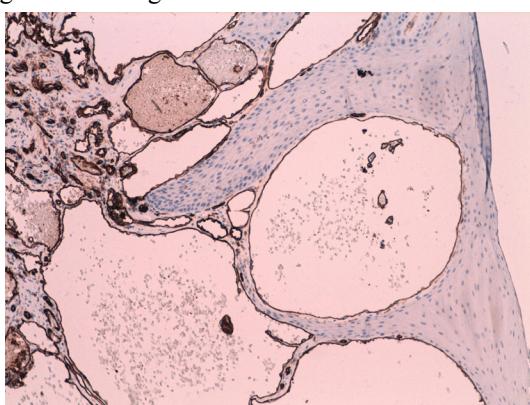


**Figure 2 – Panoramic view of the resected specimen. Note the prominent thickening of the mucosa overlying the proliferation of dilated vascular channels. Also, note hyperkeratosis (HE stain, ×10).**



**Figure 3 – High power detail of the vascular channels showing thrombi formation (HE stain, ×200).**

In short, we made 6-μm sections of the paraffin blocks and stained them in the Autostainer PlusLink (Dako, Denmark). Antigen demasking was obtained with the Target retrieval solution and the work system was EnVision, also manufactured by Dako. The antigens we used were CD31 (clone JC70A, Dako), CD34 (clone QBEnd10, Dako) and LYVE-1 (lymphatic vessel endothelial hyaluronan receptor, Reliatech), pre-diluted. The slides were counterstained with Hematoxylin. The tumor was positive for CD34 and CD31 (Figure 4), but negative for the lymphatic marker LYVE-1. Definitive diagnosis was angiokeratoma.



**Figure 4 – Immunohistochemistry for CD31, confirming the vascular nature of the lesion. LYVE-1 was negative (immunohistochemistry for CD31, ×200).**

After diagnosis, the patient underwent further examinations and no lesions were found elsewhere in her skin or mucous membranes. The case was considered a solitary angiokeratoma affecting the tongue. In the last follow-up consultation, three months after resection, the patient remained disease free and asymptomatic.

## Discussion

Solitary angiokeratomas have been described in the oral cavity, mainly the tongue and also the tonsillar pillar. This lesion seems rather infrequent, with only five cases reported to date in adults (Table 1) [1, 4–7].

**Table 1 – Summary of the clinical features of the reported cases**

Reference	Age [years]	Sex	Location	Clinical features	Therapy
[1]	54	F	Ventral tongue		Resection
[4]	82	M	Buccal mucosa		Resection
[5]	16	F	Tongue		Laser diode
[6]	45	F	Lateral tongue	Solitary	Resection
[7]	68	M	Tonsillar pillar		Resection
Present case	61	F	Tip of tongue		Resection

M: Male; F: Female.

Oral involvement is sometimes found in systemic forms and also in localized ones, with associated lesions in the serotum or elsewhere [2] and also as part of the localized congenital forms known as angiokeratoma circumscriptum [8, 9].

Clinically these lesions are usually considered hemangiomas or angiomas and they show no distinguishing features with these more frequent oral lesions. However, some cases can mimic malignant melanoma, especially when vessels are thrombosed, and only histopathological analysis can achieve diagnosis, based on the classical changes in the epidermis overlying the vascular channels.

The main differential diagnosis of angiokeratoma is lymphangioma circumscriptum. This is a true tumor of the lymphatic channels, rather than a malformative process. Until recently, the lack of reliable immunohistochemical markers to distinguish between lymphatic and vascular endothelium obliged pathologists to establish this differential diagnosis based on pure morphological criteria (mainly the prominent hyperkeratosis associated with angiokeratoma and usually lacking in lymphangioma). However, this situation has changed after the introduction of immunohistochemical markers for lymphatic endothelium, like LYVE-1, which we have performed in our case. Negativity of the tumor for LYVE-1 confirms diagnosis of angiokeratoma, excluding lymphangioma and we consider a panel of immunohistochemistry should be performed in this kind of lesions.

As for pathogenesis, these solitary lesions have been related to trauma, high venous pressure or vascular malformation [1]. A recent review by Ranjan N et al.

[10] has proposed a clinical classification for oral angiokeratomas. The surgeon facing this diagnosis must know that it is advisable to perform a thorough examination of the skin and mucous membranes to discard further lesions elsewhere and also remember the possible association with systemic diseases in widespread cases. Fabry's disease and fucosidosis can be suspected on histopathological grounds by the presence of swollen endothelial cells with a vacuolated cytoplasm in addition to the histology of angiokeratoma.

The only clinical problems these lesions can cause are bleeding, discomfort or cosmetic changes. However, most cases were asymptomatic. Therapy has usually been surgical excision in most of the published cases, mainly to discard alternative diagnosis. A recent report has employed diode laser in a 16-year-old woman [5]. No recurrences have been described.

## Conclusions

Oral angiokeratomas of the oral cavity are rare tumors. Although they can appear as isolated lesions, their presence should prompt further investigations to discard systemic disease.

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