

# Spindle cell lipoma of the oral cavity

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K. Tosios, S. I. Papanicolaou, N. Kapranos, N. Papadogeorgakis: Spindle cell lipoma of the oral cavity. *Int. J. Oral Maxillofac. Surg.* 1995; 24: 363-364.  
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**Abstract.** A case of intraoral spindle cell lipoma in the left cheek of a 55-year-old man is reported.

**Key words:** spindle cell lipoma; lipoma.

Accepted for publication 8 June 1995

Spindle cell lipoma is an uncommon and histologically distinct variant of lipoma that was first recognized as a separate entity by ENZINGER & HARVEY<sup>5</sup>. The most significant feature of this innocuous lesion is its ability to simulate a liposarcoma, especially the myxoid variant<sup>1,5,7</sup>. Histologically, spindle cell lipoma is characterized by replacement of mature fat cells by spindle cells that are closely associated

with a mucoid matrix and collagen bundles<sup>6,7</sup>. The tumor typically occurs in the posterior neck, upper back, or shoulder region of elderly men<sup>6,7</sup>.

Five cases of spindle cell lipoma have been reported in the oral cavity, two affecting the anterior floor of the mouth, two the tongue, and one the hard palate<sup>4,8-10</sup>. A case reported to occur in the cheek<sup>2</sup> is not included, as it was not specifically stated that the tumor oc-

curred in the mouth. A spindle cell lipoma in the cheek of a 55-year-old man is reported.

## Case report

A 55-year-old man was examined for a large painless mass in the left cheek that had been enlarging for "many years". No history of trauma or inflammation of the area could be recalled. Intraoral examination showed a

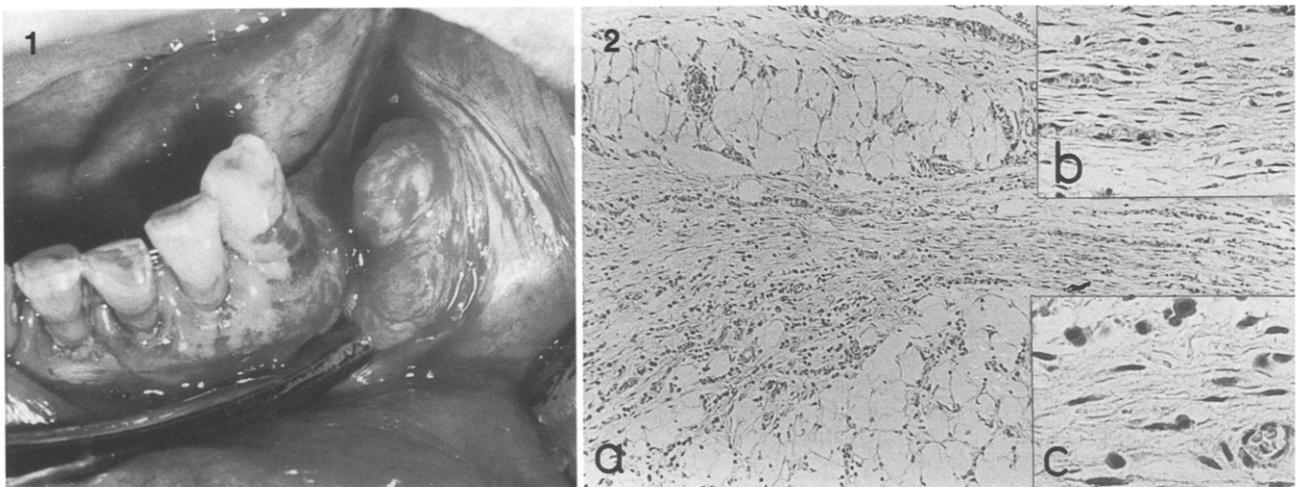


Fig. 1. Intraoral photograph of spindle cell lipoma in left cheek after incision of overlying mucosa.

Fig. 2. a) Mature lipocytes intermingled with cellular myxomatous fascicles (HE  $\times 100$ ); b) spindle cells arranged in parallel rows (HE  $\times 250$ ); c) spindle cells with fusiform nuclei, and round-shaped mast cells (HE  $\times 400$ ).

Table 1. Clinical features and follow-up data of reported intraoral spindle cell lipomas

Author(s)	Age (years)	Sex	Location	Size (mm)	Duration	Follow-up
MCDANIEL et al. <sup>10</sup>	33	F	Anterior floor of mouth	10	2 years	-
	52	M	Tongue	-	-	-
CHRISTOPOULOS et al. <sup>4</sup>	58	M	Hard palate	20×20×10	-	2 years NER
LEVY & GODING <sup>8</sup>	74	F	Anterior floor of mouth	45×35	1 year	-
LOMBARDI & ODELL <sup>9</sup>	68	F	Dorsum of tongue	15×13×10	-	-
Present case	52	M	Cheek	40×20×12	"years"	2 years NER

NER=no evidence of recurrence.

40×20×12 mm bilobular and circumscribed tumor, covered by intact oral mucosa of normal color (Fig. 1). An excisional biopsy was carried out based on a clinical diagnosis of lipoma. The lesion was superficially located and noninfiltrating. Postoperative healing was uneventful and 2 years after surgery the patient was free of recurrence.

Formalin-fixed and paraffin-embedded tissue sections were stained with hematoxylin and eosin, Alcian blue (pH 2.5) with and without hyaluronidase predigestion, and toluidine blue (pH 7.0). Immunostaining was performed with the avidin-biotin-peroxidase complex (ABC) method. The antibodies used were polyclonal anti-S-100 protein (diluted 1:500, Dako, Copenhagen, Denmark), monoclonal antivimentin (1:3, Enzo Diagnostics, New York, NY, USA), polyclonal antifactor VIII-associated antigen (1:3, Enzo), and monoclonal antimyosin-specific actin HHHF35 (1:3, Enzo). Sections stained for factor-VIII were treated with phosphate-buffered 0.1% trypsin (Sigma T-8235, St Louis, MO, USA) for 30 min at 37°C before addition of the primary antibody.

Microscopic examination showed a non-encapsulated mass, composed of varying proportions of mature lipocytes and cellular myxomatous fascicles with spindle-shaped cells (Fig. 2a). The spindle cells were uniform, small, and chiefly arranged in parallel rows (Fig. 2b). They had a single fusiform nucleus with a dense chromatin pattern and ill-defined cytoplasm (Fig. 2c). Numerous mast cells with metachromatic granules were interspersed among them. Immunohistochemical staining with antivimentin demonstrated intracytoplasmic reactivity in many spindle cells, but S-100 protein, factor-VIII, and HHHF35 were negative.

The interstitial connective tissue stroma stained blue with Alcian blue (pH 2.5) and was digested by testicular hyaluronidase. Many collagen fibers were randomly oriented throughout the lesion, while some areas were fibrotic or hyalinized with focal calcifications. Vascularity was locally prominent; focal hemorrhages and scattered lymphocytes were also seen. There was no evidence of malignancy or fat necrosis. The diagnosis was "spindle cell lipoma".

## Discussion

Spindle cell lipomas account for approximately 1.5% of all adipocytic tu-

mors and 1/60th of the incidence of ordinary lipomas<sup>7</sup>. Although the buccal mucosa is frequently involved by lipomas, no case of spindle cell lipoma has been previously reported in this region. The relevant clinical information of the intraoral cases is summarized in Table 1.

The relative proportions of lipocytes and spindle cells in the present case varied markedly in different tumor sections, as is reported to occur both within the same lesion as well as among different ones<sup>1,6,7</sup>. In most spindle cell lipomas, both elements are present in almost equal proportions; in some cases, spindle cell proliferation is localized and the tumor resembles an ordinary lipoma, while in others it is widespread, obscuring its lipomatous nature. The presence of numerous mast cells is a constant feature of the lesion<sup>1,7,10</sup>.

Immunohistochemically, spindle cells do not react with antibodies to S-100 protein and factor VIII, excluding a nerve-sheath or endothelial differentiation, respectively<sup>2,7,9</sup>. Negative immunostaining is also reported for the myeloid/histiocyte antigen MAC-38<sup>2</sup>, collagen type IV, and laminin<sup>2</sup>. Positive reaction with antivimentin is expected as this is a common mesenchymal-cell antigen, while lack of reaction for desmin and actin could preclude a myocytic differentiation of the tumor cells<sup>9</sup>.

It is suggested that spindle cells are analogous to the nonlipoblastic stellate mesenchymal cells of the primitive fat lobules<sup>3</sup>, which have lost their ability to differentiate to lipocytes but are capable of collagen synthesis<sup>2</sup>. The presence of mature lipocytes and fibroblastic cells in spindle cell lipoma probably reflects the potential of tumor cells to differentiate to both fat-storing and collagen-producing cells<sup>1,9</sup>.

The differential diagnosis from liposarcoma is based on the superficial location, the well-defined tumor mass, the uniformity and association of the

spindle cells with mature and regular collagen fibers, and the absence of lipoblasts or mitotic figures<sup>6</sup>.

Spindle cell lipoma is not encapsulated<sup>6,7</sup> and sometimes infiltrates adjacent muscles<sup>1</sup>. Recurrence is extremely rare, and recurrent lesions should not be mistaken for liposarcomas<sup>7</sup>.

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