

Original Article

Spindle Cell Lipoma: A Case Report and Review

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Submitted: 27-9-2023

Accepted: 9-10-2023

Abstract

Introduction: Lipoma is a relatively rare soft tissue tumor in the oral and maxillofacial region, with various subtypes. One of these subtypes, spindle cell lipoma (SCL), accounts for about 1.5% of all lipoma cases. These tumors are characterized by frequent 13q14 deletions, involving the RB1 gene locus, leading to the loss of nuclear RB1 protein expression in neoplastic cells.

Case report: The reported case is a 40-year-old male patient who presented with a mass in the left buccal mucosa. Intraoral examination revealed a well-circumscribed mass covered by normal mucosa. An excisional biopsy was performed and revealed variable amounts of mature adipocytes, bland spindle cells, ropey collagen and mast cells. Based on these observations, the diagnosis of SCL was established.

Discussion: Spindle cell lipoma (SCL) was first described in 1975; it primarily affects adult males in their forties to fifties. Histologically, SCL consists of spindle cells in a collagenous stroma with adipose tissue and often contains mast cells. The main differential diagnoses include classic lipoma, neurofibroma and well-differentiated liposarcoma. The preferred treatment of choice is local surgical excision.

Conclusion: Although SCL is a rare form of lipoma, it should be considered in the differential diagnosis of submucosal lesions in this area.

Keywords: spindle cell lipoma, lipoma case report, spindle cell lesions.

I. INTRODUCTION

Lipoma, a frequently encountered mesenchymal soft tissue tumor with various histopathological subtypes, is relatively uncommon in the oral and maxillofacial region. Among these subtypes is spindle cell

lipoma (SCL), it constitutes approximately 1.5% of all reported lipoma cases.¹ Pleomorphic lipoma (PL) lies on a morphological spectrum with SCL and is characterized by pleomorphic spindle cells and multinucleated floret-like giant cells.²

SCL is an infrequent and histologically unique form of lipoma, first identified by Enzinger and Harvey in 1975. Typically, it presents as a solitary, well-defined subcutaneous lesion in the posterior neck, shoulders and back of older males. Seldomly, SCL can be found in the oral cavity and only 35 well-documented cases were published between 1984 and 2012 in the oral region. In the head and neck region, SCL may occur in the major salivary glands and oral cavity. In the latter, the most common sites are the lips, buccal mucosa, palate, tongue and floor of the mouth.³

These tumors are characterized by the frequent occurrence of 13q14 deletions. This deletion involves the RB1 locus and is associated with the loss of nuclear RB1 protein expression in neoplastic cells immunohistochemically.⁴

Local surgical excision is the treatment of choice. In a study conducted in 2014, a total of 8 cases were analyzed, and all patients were subjected to clinical follow-up. The mean duration of follow-up was 50.8 months, ranging from 11 to 18 months. Interestingly, none of the patients experienced local recurrence, and as of the last follow-up, all individuals were alive with no signs of the disease.⁵

Histologically, SCL shows variable amounts of mature adipocytes, bland spindle cells and ropey collagen. Mast cells are common.³ In the other end of the spectrum, PL is characterized by the presence of pleomorphic spindle cells and multinucleated floret-like giant cells. Occasional lipoblasts can be present in a significant subset of cases.²

This report presents a case of SCL localized to the buccal mucosa in a 40-year-old male and the clinical and histopathological findings of this case are presented.

II. CASE REPORT

A 40-year-old male presented to the Oral and Maxillofacial Surgery department, Cairo University complaining of a swelling in the left buccal mucosa that had been present for

one month. There was no prior occurrence of the lesion. He exhibited good oral hygiene but had a medical condition of high blood cholesterol.

Extraoral examination revealed palpable left submandibular lymph nodes. Intraorally, a smooth surfaced swelling was evident, covered by intact normal colored mucosa, affecting the left buccal mucosa, measuring 2 x 3 x 1cm (Fig. 1).



Figure 1: A well-circumscribed mass covered by normal colored mucosa in the left buccal mucosa

An excisional biopsy was performed under local anaesthesia and sent to the Oral and Maxillofacial Pathology department for histopathological analysis. The mass obtained was yellowish in colour with regular surface texture and soft consistency, with a solid and fatty cut section and measuring 2 x 3 x 1cm (Fig. 2).

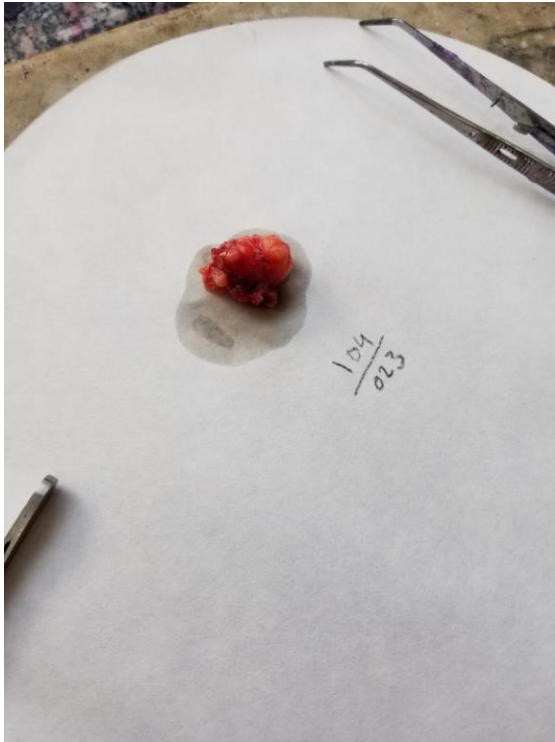


Figure 2: The gross specimen shows a yellowish mass with a smooth surface texture and solid cut section

Histopathological examination revealed lobules of mature fat cells separated by dense fibrous connective tissue septa with dilated blood vessels (Fig. 3a). Mature adipocytes, bland spindle cells and ropey collagen bundles were seen in a fibromyxoid stroma (Fig. 3b). Mast cells were also evident (Fig. 4).

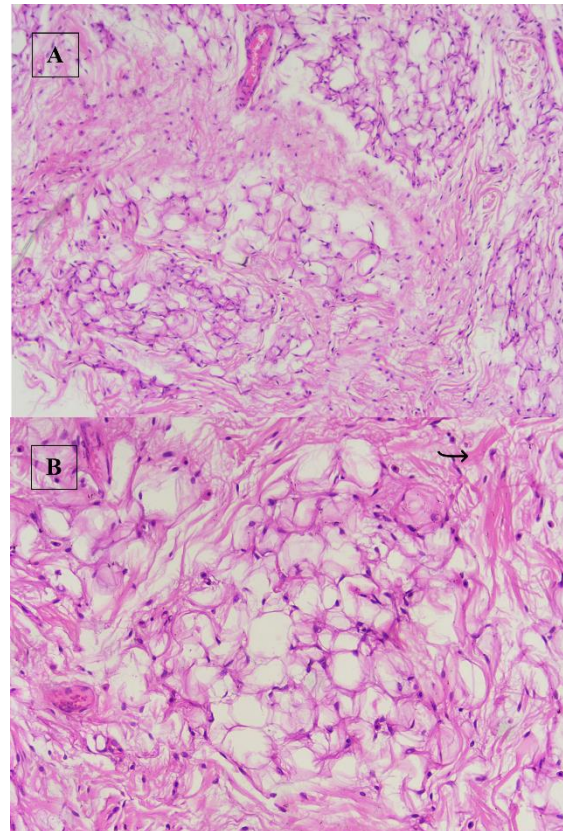


Figure 3: (a) Proliferation of bland spindle cells admixed with mature adipocytes in a collagenous stroma (H&E, x100) (b) Ropey collagen is shown (black arrow) (H&E, x200)

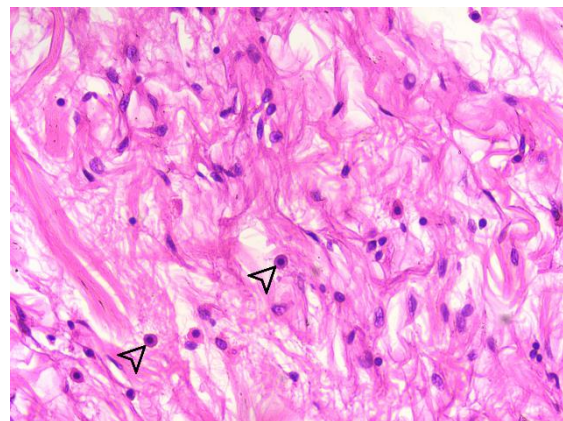


Figure 4: Numerous mast cells is shown (arrowhead) (H&E, x400)

No lipoblastic activity was found. The diagnosis of SCL was therefore established.

III. DISCUSSION

SCL was first described by Enzinger and Harvey in 1975, however, the initial report of its occurrence in the oral cavity was documented by McDaniel *et al.* in 1984. Intraoral SCL shows a predilection for adult males, mostly in their forties to fifties.⁶ The age of presentation was consistent with the common age of occurrence of SCL as the presented case was in his fourth decade of life. The prevalence of buccal mucosa involvement in SCL is reported in most of the documented cases,⁶ which aligns with the observations from the presented case.

Histologically, SCL exhibits bland spindle cells, surrounded by a stroma that shows ropey collagen fiber bundles. In association with the spindle cells, variable amounts of adipose tissue is present. Furthermore, the occurrence of mast cells within SCL is a frequent finding.⁷ These findings came in line with the histopathological features present in our case.

The histological differential diagnosis of SCL relies on the predominant features present in each lesion. It usually includes classic lipoma, neurofibroma and solitary fibrous tumor (SFT), as well as, well-differentiated liposarcoma/atypical lipomatous tumor (WDLs/ALT).⁷ Neurofibromas frequently occur in the buccal mucosa and they typically feature a fusiform component with nuclei that appear wavy, a feature not seen in the spindle cells of SCL. Mast cells are commonly found in both types of tumors.³

SFT is a rare type of tumor found in the oral tissues, with its primary location typically being the buccal mucosa. It is characterized by the proliferation of spindle cells in a variably vascular and collagenized stroma. The spindle cells often form whorls around small capillaries in a storiform pattern in hypercellular areas. In contrast, SCL does not prominently show prominent vascularization and mature fat cells are always

present. Nevertheless, SFT may occasionally contain entrapped fat cells, and both types of tumors can include mast cells. Cellularity can vary between SCL and SFT, but overall, SCL tends to exhibit lower cellularity. Additionally, the nature of collagen in these tumors can differ, with the distinct "ropey" collagen bundles being a unique feature of SCL.⁸

WDLs/ALT is the most frequently encountered type of liposarcoma, but it can pose challenges when differentiating it from benign lipomatous tumors. WDLs/ALT may not exhibit lipoblasts, a distinguishing feature commonly associated with liposarcomas, and conversely, even benign lipomatous tumors like SCL might display scattered lipoblasts. The most reliable histological characteristic for diagnosing WDLs/ALT is the presence of enlarged hyperchromatic nuclei. Atypical spindle cell lipomatous tumors also share a close resemblance to WDLs/ALT. However, to distinguish between the two, atypical spindle cell lipomatous tumors exhibit a lack of immunohistochemical expression for MDM2 and CDK4, whereas these markers are positive in WDLs/ALT.⁹

The treatment of choice is local surgical excision. The prognosis is usually good with rare recurrence. The SCL is not usually encapsulated.¹⁰ Nevertheless, this case revealed an encapsulated mass of fat, which was easily separated and removed from the surrounding tissue.

IV. CONCLUSION

In conclusion, SCL represents a symptomless, benign soft-tissue tumor, which is a rare form of lipoma. These growths usually develop slowly and typically do not cause any symptoms. In cases where the tumor is encapsulated and can be readily separated from nearby tissues, surgical removal is the preferred treatment option. Although the recurrence of this variant is infrequent, it is essential to maintain long-term follow-up.

Conflict of Interest:

The authors declare no conflict of interest.

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics:

This study protocol was approved by the ethical committee of the Faculty of Dentistry-Cairo University.

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