

Spindle cell lipoma of peri-parotid soft tissues. Report of a case and histogenetic considerations

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Abstract

Spindle cell lipoma (SCL) is a rare benign tumor which occurs most commonly in the posterior neck, shoulder and back. We report a rare case of SCL arising in peri-parotid soft tissues in a 66 year-old man. This is an unusual site for such a relatively rare lesion. The histological examination of the lesion showed the typical morphological features of SCL. Only four cases of SCL of the parotid region have been reported to date. Our case emphasizes the possibility that SCL may occur in the peri-parotid soft tissue and awareness of this possibility is crucial for pathologists to avoid confusion with others primary tumors of the parotid gland in which mature adipose tissue may be a metaplastic tumor component.

Keywords: Spindle cell lipoma (SCL), soft tissue mass, parotid gland, histology, immunohistochemistry

Introduction

Spindle cell lipoma (SCL), first described by Enzinger and Harvey in 1975, is a benign soft tissue tumor typically occurs in the posterior neck and upper trunk (back and shoulder), with a male predominance [1]. Less frequently SCL may involve the face, forehead, scalp, buccal-perioral area and upper arm, and only rarely it may arise in unexpected sites, including oral cavity [2,3], larynx [4], tongue [5] and lower extremities [1]. To the best of our knowledge, only four cases of SCL of the parotid region have been reported so far: three cases were located in the peri-parotid soft tissues [6-8] and only one case within the parotid parenchyma [9]. Clinically, SCL presents as an asymptomatic, often long-standing, oval or discoid superficial mass; grossly, unlike classic lipoma, it has a yellowish to grayish-white colour, depending on the relative extension of the fatty and spindle cell components; histologically, it is composed of two main components, mature fat and bland-looking spindle cells, which may be present in varying proportions.

We herein report a rare case of SCL arising as a nodular mass in right peri-parotid soft tissues of a 66 year-old man. This is an unusual site for this benign neoplasm, with only four cases previously reported [6-9].

Materials and methods

The surgical specimen was submitted for histological examination in neutral-buffered 10% formalin, dehydrated using standard techniques, embedded in paraffin, cut to 5 µm, and stained with hematoxylin and eosin as previously described [10-12]. Immunohistochemical analyses were performed using the standard streptavidin-biotin labeling technique (LSAB kit-Dako, Glostrup, Denmark) as previously described [10-12]. The following antibodies were tested: CD34, CD10 and S-100 protein (all from DakoCytomation, Glostrup, Denmark). Negative controls for the staining were slides stained with omission of the primary antibody.

Case presentation

A 66-year-old man presented to the Otolaryngology-Head and Neck Surgery Clinic at the University of Catania with a short history of a right-sided, painless, cheek/parotid mass. Physical examination revealed a 3.5 cm soft mass, most consistent with a fatty lesion. Ultrasonography examination showed a well-circumscribed, diffuse hyperechoic mass with multiple linear or band-shaped hypoechoic areas. The neck showed no other masses or lymphadenopathy. Clinical diagnostic considerations

included a peri-parotid soft tissue lesion versus a primary tumor of the parotid gland. The mass was surgically excised with a thin rim of surrounding parotid tissue. After three months of clinical follow-up, no local recurrence was observed. Grossly, a well-circumscribed and capsulated lipomatous mass was seen (**Figure 1A**). The cut section revealed a lipomatous lesion, soft in consistency and yellowish in colour. Histological examination (Haematoxylin and Eosin staining) showed a lipomatous tumor surrounded by a relatively thick fibrous capsule, with a peripheral, thin rim of parotid gland parenchyma (**Figure 1B**). Tumor was mainly composed of mature adipocytes (**Figure 2A**) with scattered fibro-myxoid areas in which were

set bland-looking, short spindle-shaped cells intermingling with ropey collagen fibers (**Figure 2B**). Mast cells were also frequently encountered. Lipoblasts, nuclear pleomorphism or necroses were absent. Immunohistochemical analyses as expected, the spindle cells were stained with CD34 (**Figure 3**) and CD10, while mature adipocytes were decorated by S-100 protein (data not shown).

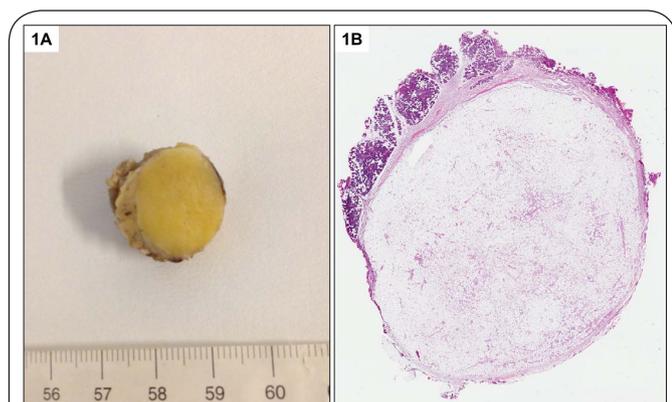


Figure 1. (A). Gross appearance of tumor, showing a lipomatous nodule with a thin rim of parotid gland (haematoxylin and eosin staining; original magnification x40). (B). Histological low magnification showing an encapsulated lipomatous tumor with a peripheral rim of parotid gland (haematoxylin and eosin staining; original magnification x40).

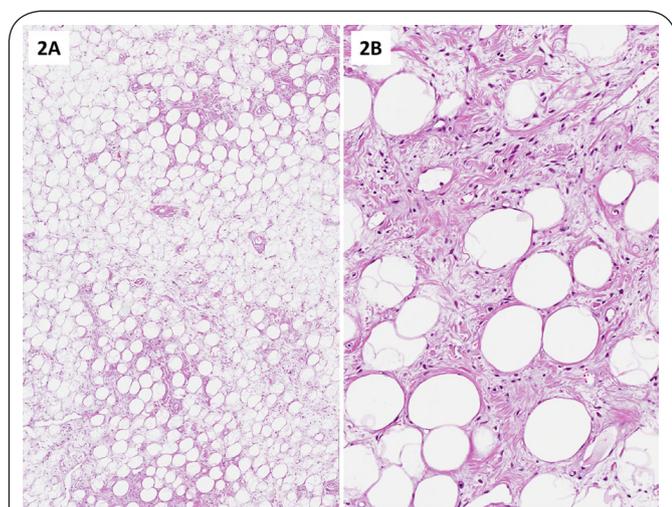


Figure 2. (A). Higher magnification of the tumor showing uniform, mature adipocytes with interspersed fibrotic areas (haematoxylin and eosin staining; original magnification x80). (B). Some tumor areas were composed of bland-looking short spindle cells with interspersed ropey collagen fibers (haematoxylin and eosin staining; original magnification x200).

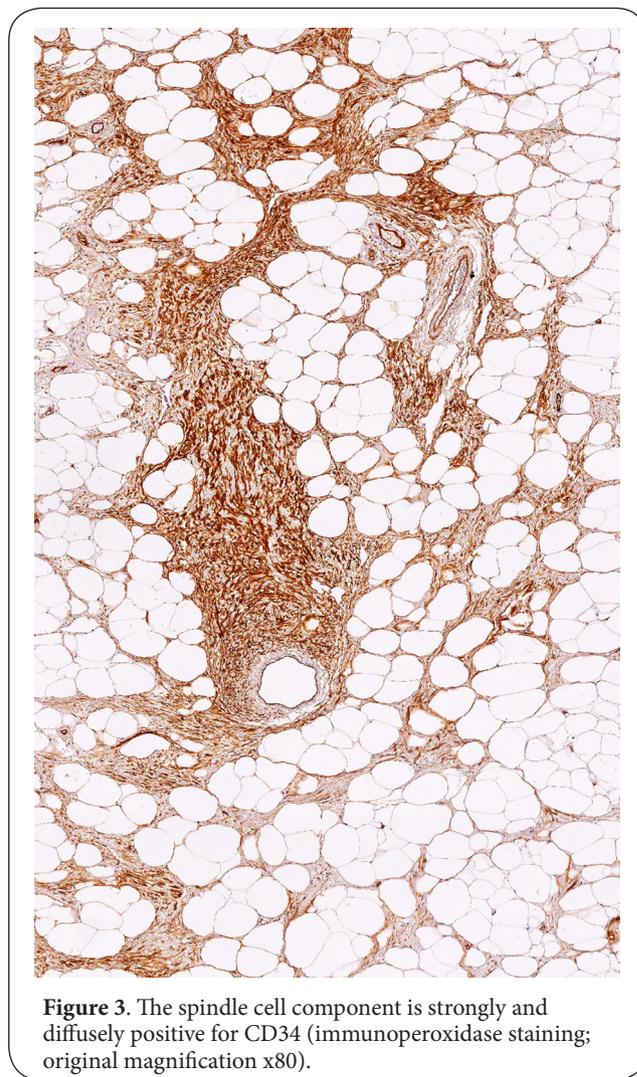


Figure 3. The spindle cell component is strongly and diffusely positive for CD34 (immunoperoxidase staining; original magnification x80).

Discussion

We herein report a rare case of SCL arising from soft tissues adjacent to parotid gland. Our case emphasizes the possibility that SCL may rarely occur in the peri-parotid soft tissues, raising pre-operative differential diagnostic problems with a primary parotid gland tumor. Histological examination is mandatory in achieving the correct diagnosis. In this regard, it is crucial to establish if tumor is located outside of the parotid gland, or if it arises within it. Infact, the intra-gland tumor location poses diagnostic problems with an epithelial

tumor exhibiting extensive lipomatous metaplasia, such as lipomatous pleomorphic adenoma or lipoadenoma [13]. In our case, the lipomatous tumor, with the typical morphological and immunohistochemical features of SCL, was well separated from the surrounding normal parotid parenchyma by a thick fibrous capsule, and it was considered as primarily arising from the peri-parotid gland soft tissues. Accordingly, both lipomatous pleomorphic adenoma or lipoadenoma were easily ruled out on the basis of the tumor site and absence of any epithelial/myoepithelial intra-tumoral component [14,15]. Among lipomatous tumors, a differential diagnosis was made with conventional lipoma, lipoma-like well-differentiated liposarcoma, and spindle cell liposarcoma. The former is composed exclusively of mature adipocytes, while spindle cell component and ropey collagen fibers are usually lacking [13]. Unlike our case, well-differentiated lipoma-like liposarcoma contains adipocytes with hyperchromatic and atypical nuclei, and atypical stromal cells in the fibrous septa, intersecting the adipocytic component [16]. Spindle cell liposarcoma, a distinctive clinico-pathological entity occurring in soft tissues [13], is easily distinguishable from SCL for the presence, even if only focally, of lipoblasts with cytological features which closely resemble the differentiation of human embryonic fat [17,18].

Conclusion

The case herein presented is rare in that it confirms that SCL may occur in an unusual site, namely peri-parotid soft tissues. Awareness by pathologist of this possibility is crucial to avoid confusion with other benign or malignant tumors of the parotid gland, assuring correct treatment and prognostic information.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Authors' contributions	FFA	GM	PC	FRL	GM
Research concept and design	✓	✓	--	--	✓
Collection and/or assembly of data	✓	✓	✓	✓	✓
Data analysis and interpretation	✓	✓	✓	✓	✓
Writing the article	✓	✓	--	--	✓
Critical revision of the article	✓	✓	✓	✓	✓
Final approval of article	--	--	--	--	--
Statistical analysis	--	--	--	--	--

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