Pleomorphic Lipoma: A Definite Histopathological Entity

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Abstract. Pleomorphic lipomas are rare benign tumours that can resemble a variety of malignant tissue tumour on histological examination. We describe a case of pleomorphic lipoma arising on the posterior aspect of the neck of a 70-year-old man, successfully treated by surgical excision. A review of the literature is presented, summarizing the principal clinical and morphological characteristics of this rare tumor.

Lipomas are considered the most common benign soft tissue neoplasm of the head and neck (1,2). There are many variants of lipomas, which are differentiated based on the amount and type of mesenchymal elements present. One such variant is pleomorphic lipoma. This is a rare, benign, pseudosarcomatous, soft tissue neoplasm, which typically occurs in males (4:1) between the ages of 50 and 70 years (3,4). Its typical location is in the sub-cutis of the neck and shoulder. Currently there are fewer than 150 cases reported in the world literature (5). We report on a rare case of pleomorphic lipoma.

Materials and Methods

A 70-year-old man presented in our Department with a 6-year history of a mass on the posterior aspect of the neck, gradually increasing in size. Clinically the lesion appeared as an isolated, mobile, non-tender subcutaneous mass measuring 5 x 3 cm transversally oriented situated at C7 level. There was no sign of cervical adenopathy. Moreover, there was no history of a previous trauma at this site.

The excisional biopsy specimen was fixed in 10% buffered-formalin and paraffin-embedded. Sections of 5-Ì were stained with haematoxylin-eosin, haematoxylin-van Gieson and PAS-haematoxylin. Other sections were stained with immunohistochemical procedure, using avidin-biotin peroxidase complex (ABC) and antibodies specific for CD34 and S100 (all the reagents were from Dako, Carpinteria, CA, USA).

The patient was treated with surgery and is disease-free at 36 months of follow-up.

Results

Intra-operatively the mass appeared capsulated and well circumscribed. Light microscopic examination revealed a completely excised pleomorphic lipoma based on the presence of mature fat cells, collagen fibers and "floclet-like" multinucleated giant cells (Figure 1). The immunohistochemical analysis revealed that more than 80% of neoplastic cells were positive for CD34 and S100, while cytokeratin was completely negative (data not shown).

The light microscopy and immunohistochemical findings were diagnostic for a pleomorphic lipoma.

Discussion

We describe, here, a rare case of pleomorphic lipoma of the neck in an adult male (70-year-old). The diagnosis of this rare lesion is difficult and should be considered in every growing mass of the head and neck region (3). In our case it
was based on the pathological examination of the tissue sample guided by immunohistological methods and on the clinical history of the patient.

Pleomorphic lipoma was first described in the early 80s and, in recent years, it has been shown that spindle cell lipoma and pleomorphic lipoma are regarded as a single clinical, histological, immunohistochemical and cytogenetic entity in the spectrum of benign lipogenic neoplasms (1-4). Differential diagnosis between spindle cell lipoma/pleomorphic lipoma, well-differentiated liposarcoma and atypical lipomas relies on clinical and histopathological examination. Pleomorphic lipoma typically arises in the sub-cutis of the neck and the shoulder as a progressively enlarging mass. The average period necessary for diagnosis is 3.3 years. There are still less than 150 cases of pleomorphic lipoma reported in the literature (5).

Fine-needle aspiration has been reported as being effective in evaluating subcutaneous lesion especially in the head and neck region (5). However, pleomorphic lipoma can masquerade as a malignancy on fine-needle aspiration, therefore histological confirmation should be obtained prior to definitive therapy (6,7). In our experience, we do not usually perform FNA because of the possibility of false-negative results. We routinely evaluate subcutaneous masses by US. Atypical results or difficult interpretation of US are subsequently evaluated by MRI and eventually by excisional biopsy. In the case presented, we decided to directly perform histological examination of the mass, due to clinical presentation.

Figure 1. Section through the tumour showing loosely-textured fibrous stroma containing pleomorphic hyperchromatic cells, chronic inflammatory cells including occasional mast cells, and characteristic multinucleated floret-like giant cells with multiple peripherally placed nuclei. Haematoxylin and eosin; original magnification X 40.
Surgical treatment of pleomorphic lipoma involves complete surgical excision with clear margins, as simple enucleation is inadequate and is associated with a high recurrence rate. In the case presented, the patient is disease-free at 36 months of follow-up, thus confirming the reported excellent cure rates for this tumor (8).

In conclusion, pleomorphic lipoma is a rare benign, pseudosarcomatous soft tissue neoplasm typically occurring in the sub-cutis of the neck and shoulder, that can resemble a variety of malignant soft tissue tumors. Therefore, careful examination of the clinical setting, as well as of the histopathological characteristics of this kind of tumors is essential for a correct diagnosis and to avoid unnecessary and often disfiguring surgery.

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References


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