

Pleomorphic Lipoma: A Rare Presentation

Kafil Akhtar^a, Mohd Rafey^b, Rana K Sherwani^a

^aProfessor, ^bResident, Department of Pathology, Jawaharlal Nehru Medical College, A.M.U., Aligarh, U.P., India

Corresponding Author:

Kafil Akhtar, Professor, Department of Pathology, Jawaharlal Nehru Medical College, A.M.U., Aligarh, U.P., India

Abstract

Pleomorphic lipoma is a rare benign tumor mainly located in the upper trunk and back of the neck in elderly males. It is rarely seen in the head and neck region. Differential diagnosis of the tumor is neurofibroma, well-differentiated liposarcoma, dermatofibrosarcoma protuberans and solitary fibrous tumour. We report a case of pleomorphic lipoma in a 60-year-old male who presented with gingival enlargement since 5 months. The lesion was slowly progressive, 3x4 cm in size, painless, hard in consistency and was mobile on the underlying tissues. Wide local excision of the mass was performed. Microscopically, it showed mature adipocytes, spindle cells and rare "floret-like" cells with absence of lipoblasts and mitoses. No recurrence was seen after 6 months of follow-up.

KEYWORDS: Adipose tissue, Pleomorphic lipoma, Immunohistochemistry, Spindle cell

INTRODUCTION

Pleomorphic lipoma or giant-cell lipoma is subcutaneous tumor affecting predominantly elderly and middle-aged men.¹ 90% of the males are in the age group of 45-65 years.² The neck, shoulder region and back are the sites of predilection.¹ Pleomorphic lipoma and spindle cell lipoma represent a continuum of benign tumors composed of an intricate mixture of mature fibrous tissue, adipose tissue and myxoid tissue interspersed with cellular foci. The lesion is characterised by the presence of a variety of giant cells and especially the 'floret' giant-cells, named because of the arrangement of their nuclei in the cell. The pleomorphism of the lesion can be mistaken as liposarcoma.³

The pleomorphic lipoma is a benign superficial lesion of subcutaneous tissue which must be sharply differentiated from sarcomas. Some of the liposarcomas seem to have originated within a pre-existing pleomorphic lipomas.⁴ Pleomorphic lipoma is an entity which is classified as pseudosarcomatous lesions of soft tissue.³ We intend to present this rare case in order to minimize radical surgeries in such deceptive benign lesions.

CASE SUMMARY

A 60-year-old male presented in the surgical clinic with gingival enlargement since 5 months. The lesion was slowly progressive, 3x4 cm in size, painless, hard in consistency and was mobile on the underlying tissues. Fine-needle aspiration biopsy of the lesion showed presence of scattered atypical spindle cells with oval to elongated nuclei and minimal wispy

cytoplasm with scattered multinucleated giant cells, suggestive of spindle cell neoplasm (Fig.1).

Wide local excision of the mass was performed. Grossly the mass was 3.5x 3.0 cm in size, well-circumscribed, yellow, firm in consistency and devoid of necrosis (Fig. 2).

Light microscopic examination revealed a spindle cell proliferation with hyperchromatic oval nuclei in a focal myxoid matrix and delicate branching capillaries. Scattered giant cells containing pleomorphic, multilobated, and hyperchromatic nuclei and occasional atypical cells with vacuolated cytoplasm and scalloped nuclear margins were also noted (Fig. 3).

Immunoperoxidase staining with cytokeratin was negative in the spindle cells and pleomorphic cells. The S100 stain was positive in the nuclei and cytoplasmic vacuoles of atypical cells and CD34 positivity was seen in the spindle cells (Fig. 4).

A final diagnosis of pleomorphic lipoma was made. As the lesion was well circumscribed and has a benign course, so no adjuvant therapy was administered. No recurrence was seen after 6 months of follow-up.

DISCUSSION

Pleomorphic lipoma is a benign tumour typically occurring in the neck or back of elderly males.¹ It is usually dermal or beneath mucous membranes and consists of spindle cells, floret giant cells and ropey collagen.² Grossly the tumor is usually 3-5 cm in size, well circumscribed, yellow-gray-white and firmer than classic lipoma.

The diagnostic criteria of pleomorphic lipoma are as follows: Must be located in subcutis or dermis of posterior neck, upper back and shoulders. If located in other sites, it is atypical lipomatous tumor. Variable amount of adult fat is present in 10-90% of the lesion. Hyperchromatic enlarged nuclei is seen, which may form semicircle of nuclei (floret cells) with no lipoblasts. Bundles of dense ropey collagen with foci of myxoid stroma may be evident. Vessels may be prominent, arborizing and thick walled. CD34 is strongly positive.⁵

Spindle cell/pleomorphic lipomas are found in the age group of 20 to 85 years (median: 42 years). 70% of the reported patients are females. Most lesions present as a soft and slowly enlarging cutaneous nodule, usually measuring less than 2.5 cm.⁶ Histologically, some of the lesions are dermal which differ from the usual spindle cell/pleomorphic lipoma in being unencapsulated with poorly defined infiltrative margins; although the cytomorphic findings like ropey collagen and mast cells were seen as in usual subcutaneous lesions. Also dermal spindle cell/pleomorphic lipomas are distinctive in their apparent female predilection and wider anatomical distribution than subcutaneous lesions.^{6,7}

Differential diagnosis of pleomorphic lipoma includes neurofibroma, which may have floret cells and are S-100 positive; well differentiated liposarcoma which have deep location with more lipoblasts, variable thick collagen, variable floret giant cells and are CD34 negative; dermatofibrosarcoma protuberans which is also CD34

positive and solitary fibrous tumour which is both CD34 and bcl-2 positive.

Kusum Kapila et al in their study reviewed 51 benign lipomatous tumours, out of which only one turned out to be atypical lipoma.⁸ Ultrastructurally it is reported that both the spindle cells and pleomorphic multinucleated cells that characterize these tumors are prelipoblastic mesenchymal cells.⁹ Molecular/cytogenetics of pleomorphic lipoma shows 16q or 13q abnormalities in 70% cases and are frequently hypodiploid.⁶ Treatment and prognosis is usually wide excision with only rare incidence of local recurrence and metastases.

REFERENCES

1. World Health Organization Classification of Tumours, Tumours of Soft Tissues and Bone, IARC Press 2012: pp231-241.
2. French CA, Mentzel T, Kutzner H, Fletcher CD. Intradermal spindle cell/pleomorphic lipoma: a distinct subset. *Am J Dermatopathol* 2010; 22(6):496-502.
3. Azzopardi JG, Iocco J, Salm R. Pleomorphic lipoma: a tumour simulating liposarcoma. *Histopathol* 2013; 7(4):511-523.
4. Perrotti V, Rubini C, Fioroni M, Iezzi G. Pleomorphic lipoma of the oral cavity. Report of a case. *Minerva Stomatol* 2012; 55(5):321-325.
5. Shmookler BM, Enzinger FM. Pleomorphic lipoma: a benign tumor simulating liposarcoma: A clinicopathologic analysis of 48 cases. *Cancer*. 2011; 47:126-133.
6. Mandahl N, Mertens F, Willén H, Rydholm A, Brosjö O, Mitelman FJ. A new cytogenetic subgroup in lipomas: loss of chromosome 16 material in spindle cell and pleomorphic lipomas. *Cancer Res Clin Oncol* 2014; 120:707-711.
7. Aravind P and Sandhaya I. Pleomorphic lipoma: A cytological diagnostic dilemma. *J Clin Diagn Res* 2011; 5(2): 355-356.
8. Kapila K, Ghosal N, Gill SS, Verma K. Cytomorphology of lipomatous tumours of soft tissue. *Acta Cytol* 2013; 47:555-562.
9. Pitt MA, Roberts IS, Curry A. Spindle cell and pleomorphic lipoma: an ultrastructural study. *Ultrastruct Pathol* 2005; 19:475-480.

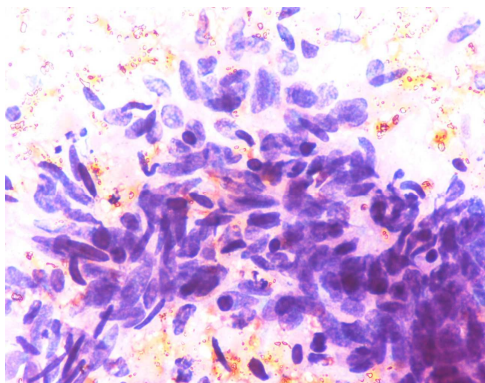


Figure 1: Fine-needle aspiration biopsy showed presence of scattered atypical spindle cells with oval to elongated nuclei and minimal wispy cytoplasm with scattered multinucleated giant cells, suggestive of spindle cell neoplasm. Hematoxylin & Eosin x 40 X.

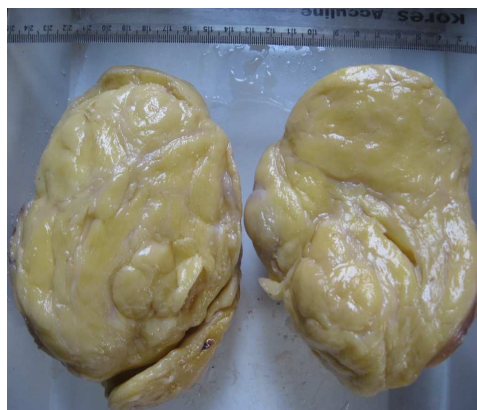


Figure 2: Grossly the mass was 3.5x 3.0 cm in size, well-circumscribed, yellow, firm in consistency and devoid of necrosis.

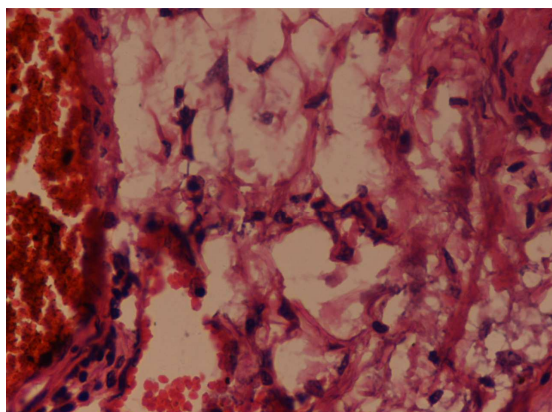


Figure 3: Histomorphology revealed a spindle cell proliferation with hyperchromatic oval nuclei with scattered giant cells containing pleomorphic, multilobated, and hyperchromatic nuclei and occasional atypical cells with vacuolated cytoplasm and scalloped nuclear margins. Hematoxylin & Eosin x 40 X.

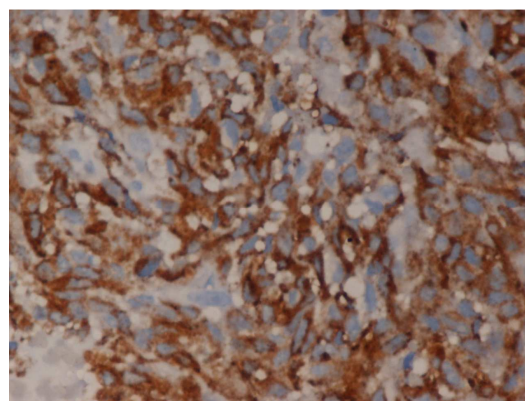


Figure 4: Immunoperoxidase staining with CD34 showed strong positivity in the spindle cells. IHC CD34 x 40X.