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Case Report

Subcutaneous Thoracic Liposarcoma: A Case Report.

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Abstract

Well-differentiated liposarcoma (WDLPS) is one of the most common soft tissue sarcomas.Thoracic site is uncommon, accounting for 1% of all cases.[1]

Keywords : Liposarcoma; Subcutaneous Tissue; Thorax .

INTRODUCTION

Atypical lipomatous tumor/well-differentiated liposarcoma (ALT/WDLPS), synonyms of the same disease entity, indicate a locally, aggressive mesenchymal neoplasm composed entirely or partially of an adipocytic proliferation showing at least focal nuclear atypia in both adipocytes and stromals cells. It occurs most frequently in the deep soft tissues of the proximal extremities (thighs and buttocks) and trunk (back and shoulders).

The retroperitoneum and paratesticular area are also common sites.

Unusual sites include the head and neck region, mediastinum, distal extremities, skin, and dermis [2].

These lesions occur mainly in adults, with higher incidence in the fourth and fifth decades of life.

Well-differentiated liposarcoma usually appears as a painless mass, arising in deep sites such as the retroperitoneum, where it can reach large sizes without giving symptoms.

Macroscopic

Usually consists of a large, well-circumscribed, lobulated mass.

Variable consistencies are present, from firm to soft, depending on the proportion of fibrous and/or myxoid tissue components.

Larger retroperitoneal tumors appear more heterogeneous, often containing foci of hemorrhage or fat necrosis.

Histopathology

Well-differentiated liposarcoma can be divided morphologically into three main subtypes: adipocytic (lipoma-like), sclerosing, and inflammatory [3].

The presence of more than one morphologic pattern in the same lesion is common, particularly in retroperitoneal tumors.

Well-differentiated lipoma-like liposarcoma is composed of mature adipocytes in which, unlike benign lipoma, there is moderate variability in cell size, nuclear atypia in adipose cells and/or stromal cells.

A variable number of lipoblasts (from many to none) can be found. It is important to note that the presence of lipoblasts is not necessary for a diagnosis of liposarcoma. Nuclear positivity for MDM2 and/or CDK4 is present in the majority of cases.[4]

In lipoma-like WDLPS, MDM2 and CDK4 expression may prove difficult to assess, therefore the FISH method may be a valid alternative.[5]

Diagnostic criteria

ALT/WDLPS lipoma-like: adipocyte size change associated with nuclear atypia in stromal and/or adipocyte cells; Sclerosing

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ALT/WDLPS: bizarre, hyperchromatic stromal cells in a fibrillary sclerotic fundus; Inflammatory ALT/WDLPS: atypical stromal cells scattered in a chronic inflammatory background; lipoblasts are not required for diagnosis. It's complementary the nuclear expression of MDM2 and/or CDK4 or evidence of amplification of the MDM2 and/or CDK4 gene.

Prognosis

ALT/WDLPS shows no tendency to metastasize if surgical resection is complete.

The most important prognostic factor, therefore, is the anatomical location.

Tumors that occur in deep anatomical sites such as the retroperitoneum, spermatic cord, or mediastinum are prone to recurrence, and where dedifferentiation is shown, the potential for disease progression is greater.

Overall, 10-20 year mortality rates range is 0% for liposarcomas of the extremities to over 80% for those arising in the retroperitoneum. The median time to death is 6-11 years.

OUR CLINICAL CASE

Clinical history: Older male with a mass formed in the subcutaneous region of right thorax.

Macroscopic

Oval neoformation of cm 11 x 10 x 7.

This neoformation, apparently well circumscribed and of firm consistency, showed a grey-yellowish color on the cut.

Separately a similar neoformation measuring 9 x 5 x 3 cm.

These findings suggested a first diagnostic orientation towards soft tissue tumors, arising in an unusual location such as the subcutaneous tissue of the chest wall.

Material and methods

The material, after correct fixation in 10% neutral buffered formalin, was reduced and the parts judged to be most significant were embedded in paraffin for the subsequent preparation of blocks from which to obtain, according to our procedure, 3 µ thick slices to be colored with routine hematoxylin-eosin.

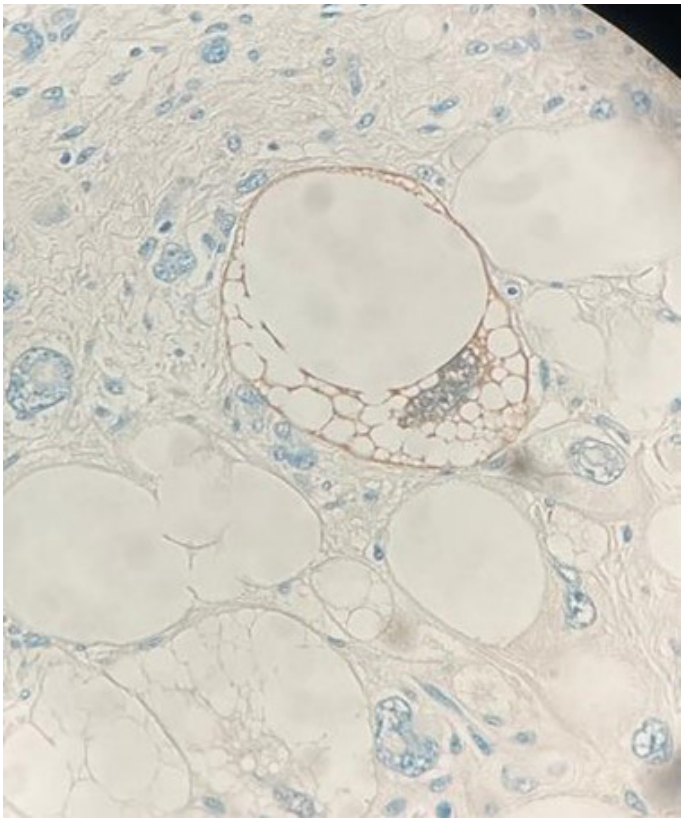
The most representative sample, after observation under the microscope, was selected and sent for further blank sections with a thickness of 3 µ for immunohistochemical investigations.

We used CD34, P16, S100, MDM2, Actin ML (clone 1A4), Desmin and Actin MS (clone HHF35) and KI67 for the proliferative index.

Microscopic

A proliferation of adipocyte cells with wide variability in shape and size, which frequently showed an altered nucleus/cytoplasmic relationship, with polymorphic, hyperchromatic, multilobed often indented nuclei and large cytoplasm, often containing multiple vacuoles wich appear to compress the nuclei, characterizing themselves as a lipoblasts. (**fig 1**)

Figure 1. Lipoblast



The interposed collagenous stroma was dense, hyalinotic, with presence of lympho-monocytic elements, sometimes in follicular-like structures.
Absents areas of tumor necrosis or hemorrhage. (**figs. 2-3-4**)
Immunohistochemical investigations have documented positivity for CD 34 (**fig. 5**) and P16 (**fig. 6**) [6] and focal positivity for S100 and MDM2 (**fig.7**). [6]

Figure 2. HAEMATOXYLIN-EOSIN

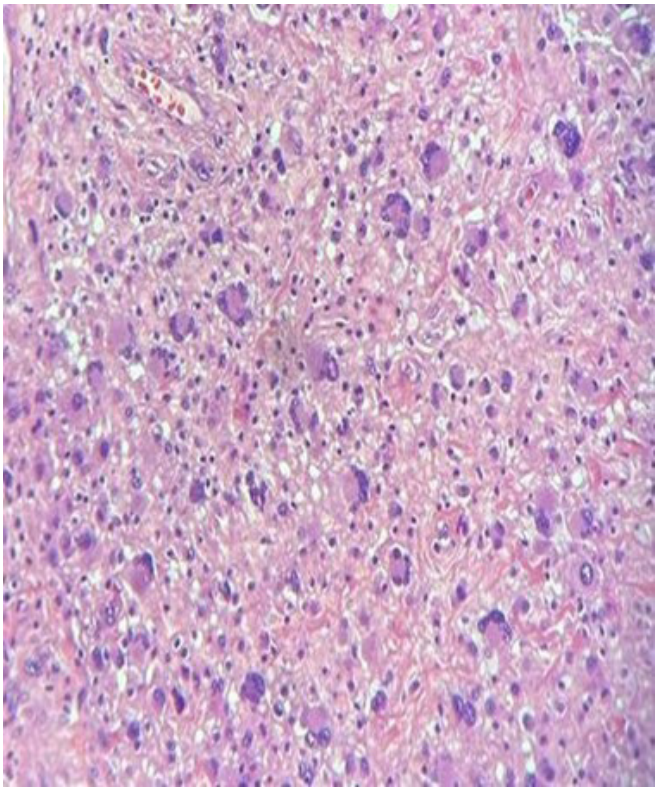


Figure 3. HAEMATOXYLIN-EOSIN

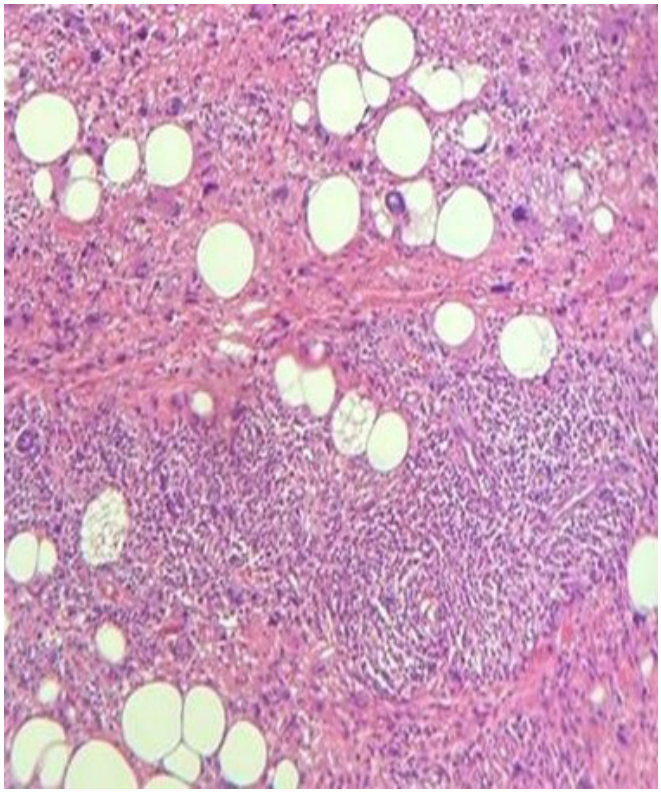


Figure 4. HAEMATOXYLIN-EOSIN

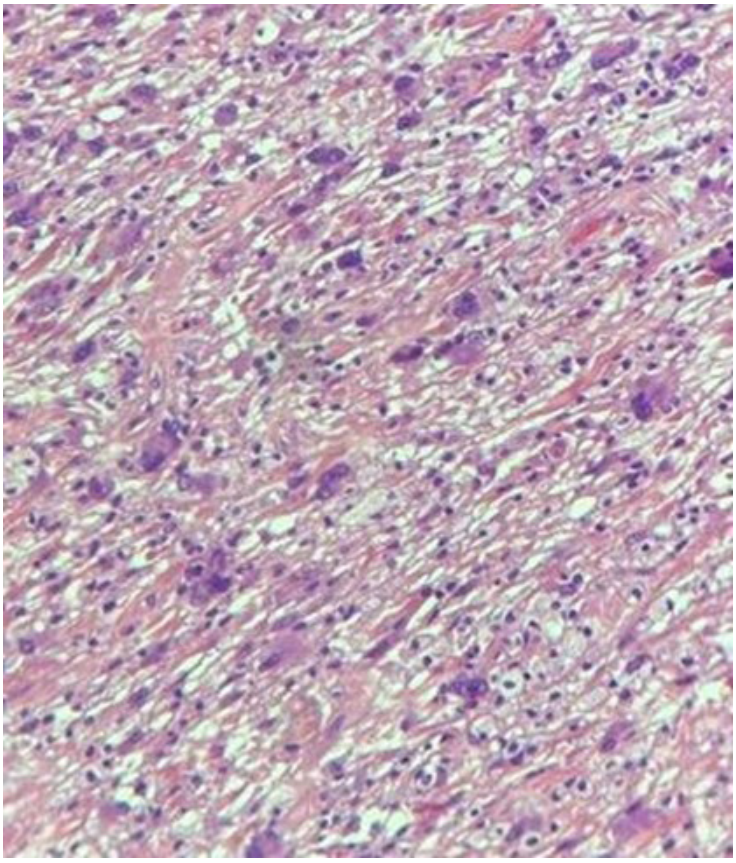


Figure 5. CD34

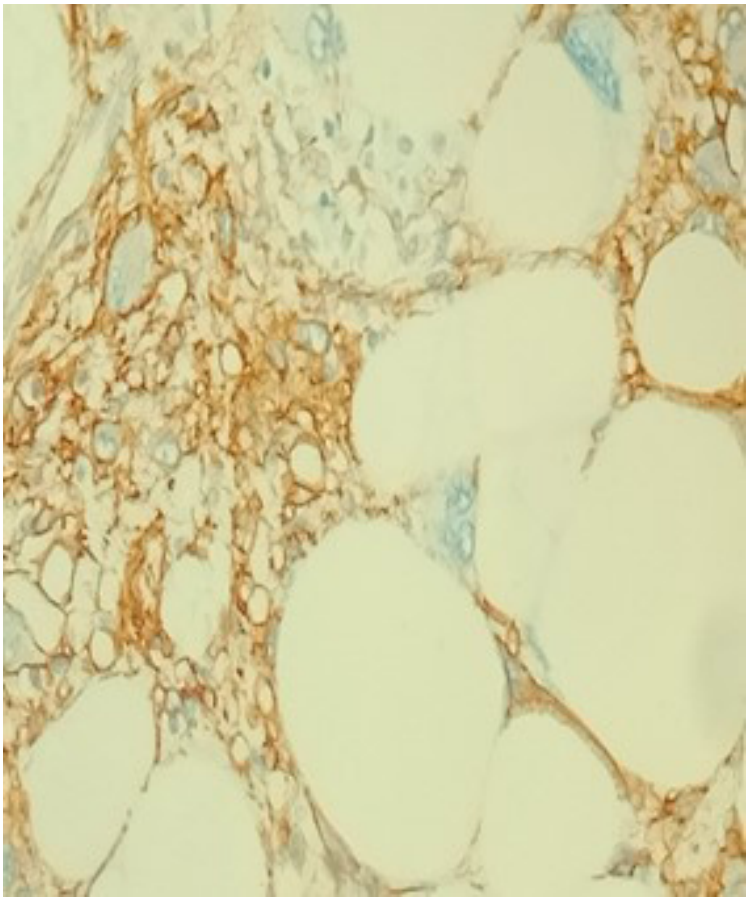


Figure 6. P16

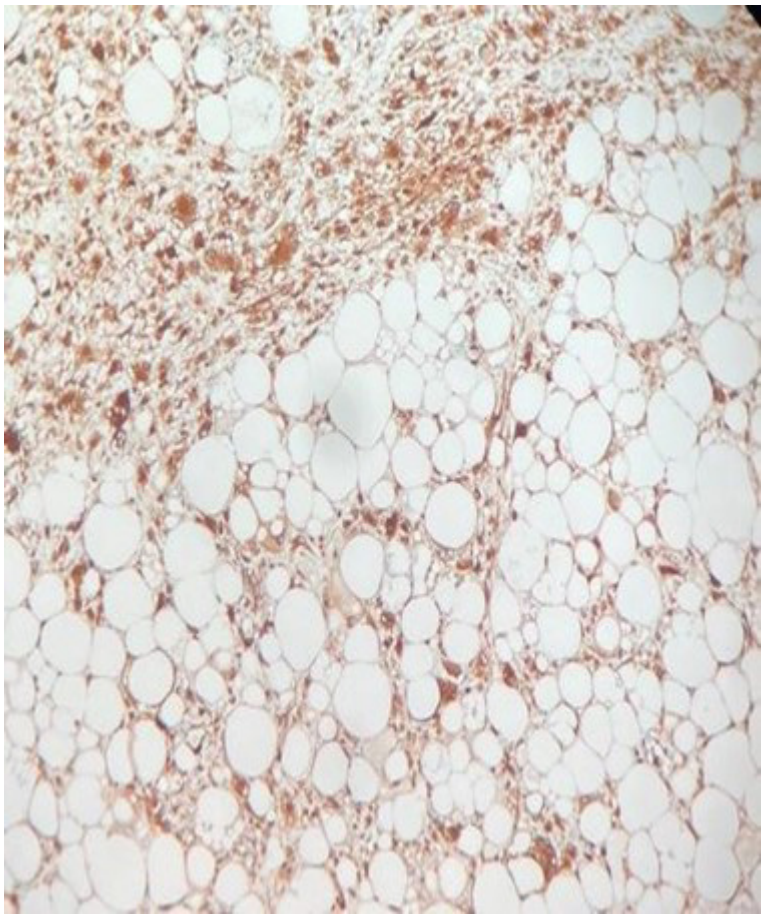
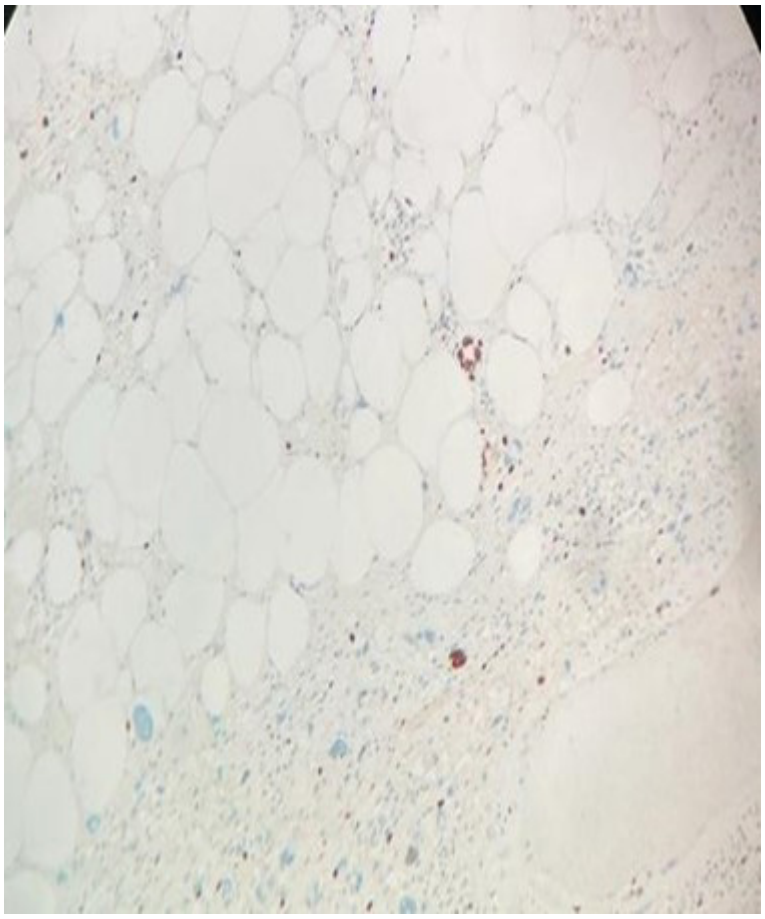


Figure 7. MDM2



The immunostainings for Actin ML (clone 1A4), desmin and Actin MS (clone HHF35) were negative. Ki67 showed a very-low proliferative index (1-3 mitoses to 10 HPF).
The surgical resection margins were involved by the neoplasm. The morphological and immunohistochemical findings gave evidence for a well-differentiated liposarcoma/atypical lipomatous tumor arising in an unusual location.

DISCUSSION

Well-differentiated liposarcoma is one of the most common soft tissue sarcomas, however thoracic site is infrequent, as dermal localization, accounting for 1% of all cases.[1-2]
In our case, in addition to the unusual location such as the subcutis of the chest wall, some areas with greater aspects of pleomorphism represented a question in the differential diagnosis, since these lesions are rarely found.
The differential diagnosis was oriented between a well-differentiated liposarcoma and a pleomorphic liposarcoma; the low proliferative index (KI-67), the absence of adipose necrosis or haemorrhagic areas, the immunohistochemical staining of MDM2, which resulted positive (fig.7) was decisive for a correct diagnosis of well-differentiated liposarcoma; staining for MDM2 and CDK4 is characteristically negative in pleomorphic liposarcoma. [7]
Finally, the communication of complete or incomplete surgical excision of the lesion is essential; the latter condition exposes to the high risk of relapses but at the same time allows the patient to be educated on the need for close follow-up.

Availability Of Data

Data supporting the findings of this study are available from the corresponding author upon request.

Conflict Of Interest

The authors declare that there is no conflict of interest with respect to the publication of this study.

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