Myxoid Liposarcoma with Cartilagenous Differentiation

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ABSTRACT

Myxoid liposarcoma (MLPS) is an adipocytic tumour and second commonest among the types of liposarcoma. It exhibits a wide histological spectrum. It is important to be aware of this diversity of morphology in this tumour to prevent a wrong diagnosis. Heterologous differentiation in myxoid liposarcoma is reported; however, this is rare.

To date, seven cases of MLPS with cartilaginous differentiation have been reported. Only five of these were further confirmed by cytogenetic analysis. We are reporting the 8th case of MLPS with cartilaginous differentiation.

A 66-year female presented with posterior left thigh mass. Excision was done. Microscopic examination showed sheets of bland spindle cells containing round to oval nuclei and fine, delicate chicken-wire vessels. The firm blue appearing areas, which accounted for about 20% of the tumor volume, were characterised by mature hyaline cartilage. The final diagnosis was MLPS, showing prominent cartilaginous differentiation. Anterior and lateral margins were involved. Tumour was very close to the rest of the resection margins. FNCLCC grade was 1. Provisional pathological stage, as per staging system of the Union for International Cancer Control for extremity, was pt2.

Patient was examined by oncologists. Wide local excision is in plan as two margins were involved by the tumour, while rest of the margins were very close to tumour.

Key Words: Liposarcoma, Myxoid, Cartilaginous differentiation.

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INTRODUCTION

Liposarcoma is one of the most common sarcomas of adults. On the basis of microscopic features, it is classified as well differentiated/de-differentiated liposarcoma, myxoid liposarcoma (MLPS), and pleomorphic liposarcoma. MLPS makes up more than half of all reported liposarcomas. Recently, round cell differentiated pattern has been included in MLPS. Majority of patients present in middle age. Out of all liposarcomas, MLPSs occur in adolescents and young adults. It shows predilection for thigh. Grossly, it shows gelatinous surface and exhibits multinodularity. Diagnosis of MLPS is primarily based on the characteristic histology. It is well documented in literature that MLPS exhibits a broad histopathological spectrum. Majority of the cases exhibit classic morphology, i.e., well-demarcated lobulated tumours containing even distribution of relatively bland appearing fusiform cells and lipoblasts in abundant myxoid stroma.

Diversity of histologic patterns in MLPS can lead to misdiagnosis. Fritchie et al. described various microscopic appearances in 46 cases of MLPS. They identified variety of patterns, including chondroid metaplasia in 4% of their total cases.

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A 66-year female presented with left thigh posterior aspect mass. Plain MRI thigh revealed a large, well defined, ovoid, heterogeneously enhancing mass lesion in subcutaneous tissue at posterolateral aspect of left thigh, causing marked anteromedial displacement of left biceps femoris muscle. It measured 9.3 x 4.7 x 2.4 cm. Ultrasound-guided biopsy from left thigh was reported as myxoid spindle cell neoplasm, favour MLPS. Excision was done. The specimen received was an ovoid, heterogeneous, leiomyomatous and osseous differentiation in MLPS have been described in literature. Till date, five cases of MLPS with cartilaginous differentiation have been reported. If prior case reports of Enzinger and Winslow and Evans are taken into account, then the total number of cases reach seven. However, they initially described it as a metaplastic phenomenon. Distribution of cartilaginous areas can be distinct from typical myxoid areas or there can be gradual transition between both patterns. Siebert et al. discussed that cartilaginous areas can be misinterpreted as various other soft tissue tumours. Mature cartilage is rarely reported in MLPSs. Cytogenetic evaluation of the conventional histology and the cartilaginous area can be used to support the diagnosis. Only few cases of heterologous components have been reported so far and often without molecular studies. Concept of "de-differentiated" MLPS is also still controversial. Distinct translocation t(12; 16) (q11; p11) occurred consistently throughout various reported studies and many reports showed it in more than 90% of the MLPSs.

In literature, the quantity of round cell component, tumour necrosis and p53 over expression are well documented prognostic factors. Importance of round cell component as a prognostic factor was first identified by Enzinger and Winslow, which was further confirmed in follow-up studies. Microscopic details of cartilaginous areas were described in only a small number of cases. So far, cartilage has not been classified as benign or malignant. Ossification along with cartilage formation has also been observed in one study and this phenomenon was designated as enchondral ossification rather than as osteosarcomatous differentiation. Authors of various previous case reports have speculated that progenitor cells might have resulted in generation of cartilaginous areas were described in only a small number of cases. However, recent studies have shown that progenitor cells might have resulted in generation of cartilaginous areas which are considered as a metaplastic phenomenon. Distinct translocation t(12; 16) (q11; p11) occurred consistently throughout various reported studies and many reports showed it in more than 90% of the MLPSs.

DISCUSSION

MLPS presents after 40th decade. It characteristically appears as a nodular swelling on thigh. Histologically, most of the tumours contain monomorphic spindle cells and lipoblasts with minimal atypia. In the background, abundant myxoid stroma is present. Chicken-wire capillary vasculature is characteristic of this tumour. Cells with cytoplasmic vacuolations with eccentric appearing nuclei are also seen. Few cases with discrete cartilaginous, leiomyomatous and osseous differentiation in MLPS have been described in literature. Till date, five cases of MLPS with cartilaginous differentiation have been reported. If prior case reports of Enzinger and Winslow and Evans are taken into account, then the total number of cases reach seven. However, they initially described it as a metaplastic phenomenon. Distribution of cartilaginous areas can be distinct from typical myxoid areas or there can be gradual transition between both patterns. Siebert et al. discussed that cartilaginous areas can be misinterpreted as various other soft tissue tumours. Mature cartilage is rarely reported in MLPSs. Cytogenetic evaluation of the conventional histology and the cartilaginous area can be used to support the diagnosis. Only few cases of heterologous components have been reported so far and often without molecular studies. Concept of "de-differentiated" MLPS is also still controversial. Distinct translocation t(12; 16) (q11; p11) occurred consistently throughout various reported studies and many reports showed it in more than 90% of the MLPSs.

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CONFLICT OF INTEREST:
No conflict of interest was reported.

AUTHORS’ CONTRIBUTION:
HT: Conception of idea, draft writing.
TS: Finalised the draft, critical review.
IS: Worked on idea, finalised the draft.

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