Case Report

Malignant chondroblastoma of extraskeletal origin

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Abstract

Chondroblastoma is a rare benign neoplasm of cartilaginous origin. It typically arises in the epiphysis of a long bone. They occur mostly in the second decade of life and is more common in males. Extraskeletal origin of chondroblastoma is a rarity and virulent behavior by its local aggressive nature or metastasis is reported in very few cases. We hereby, present a case of chondroblastoma in the left popliteal fossa first of its kind in a 62-year-old female, primary tumor extraskeletal in origin which turned locally aggressive and eventually metastasized to lungs. The patient is now on palliative therapy.

Key words: Chondroblastoma, extraskeletal, locally aggressive, lung metastasis

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Introduction

Chondroblastoma of extraskeletal origin is a rare entity. Only four cases have been reported so far. It could develop in any age, nonetheless, it is prevalent in children and young adolescent between the age of 10 and 20 years, and it occurs more frequently in the male than the female.[1] The patients generally present with pains and edema, and if pathologic fractures are developed, severe symptoms may be present.[1] Occasionally, chondroblastoma invades the articular cavity, and although very rare, it may take invasive courses such as metastasis.[2] Such metastatic lesions are developed after surgical resection. In many cases, it metastasized to the lungs. Here, we report a case of chondroblastoma arising from the soft tissue of popliteal fossa in a 62-year-old female which had eventually metastasized to lungs after a surgical intervention.

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Case Report

A 62-year-old female presented with chief complaints of swelling in the left popliteal region since 6 months which progressed rapidly since 1 month after a local quack performed incision and drainage of the swelling. No other constitutional symptoms. On examination, a lobulated swelling of size 6 cm × 5 cm on the posterolateral aspect of the knee joint irregular in shape with smooth surface, well-defined margins, firm in consistency, skin not pinchable, and nonmovable. Tenderness present on deep palpation with the local rise of temperature. Lymphadenitis probably of tuberculous origin was suspected. X-ray revealed no bony involvement. X-ray chest was normal. Magnetic resonance imaging revealed large lobulated 5.5 cm × 3.7 cm × 6.6 cm soft tissue mass along posterolateral aspect of the left knee not infiltrating the bone [Figure 1]. Bone scan revealed increased blood pooling and delayed abnormal tracer uptake from same region representing neoplastic lesion. Incisional biopsy was performed. Intraoperatively, the

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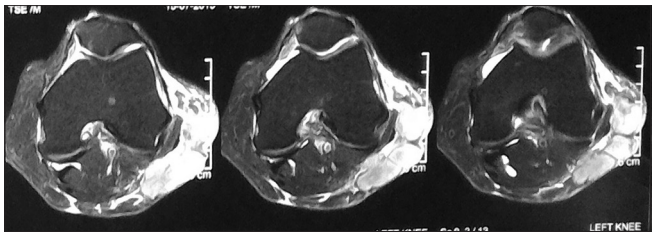

Figure 1: Magnetic resonance imaging axial cuts (without contrast) revealed large lobulated soft tissue mass along posterolateral aspect of the left knee with no bony involvement

swelling was in the intermuscular plane and found to be lobulated with focal areas of necrosis. Microscopy revealed fragmented cellular tumor with the lobular arrangement and focal chondromyxoid background. There were round to polygonal cells vacuolated cytoplasm convoluted nucleus with prominent chicken network type of calcification around the individual cells with focal areas of nuclear pleomorphism and mitotic figures. The lesion also contained multiple osteoclastic types of giant cells giving the impression of diagnosis to be chondroblastoma [Figure 2]. To rule out metastasis, computed tomography (CT) chest was done which revealed multiple random soft tissue nodules in both lungs signifying pulmonary metastasis. The oncologist confirmed the patient to be in the fourth stage hence was suggested for palliative radiotherapy. Chest X-ray taken after 1 month showed multiple opacities in the lung field which were not seen in the initial X-ray signifying the rapid and enormous progression of metastasis.

Discussion

Chondroblastoma is a rare epiphyseal benign bone tumor, constituting < 1% of bone tumors. Although chondroblastoma affects people of all ages, the age of predilection is in the second decade. Only a few cases in elderly patients having been published.[3] Males are affected more often than females, the ratio being approximately 1.7:1.2[4] In our case, the patient was a 62-year elderly female which is an uncommon event.

The extraskeletal presentation is most unusual. According to Granados *et al*.[5] There are only three reports of the histological findings of primary extraskeletal chondroblastoma. They reviewed three cases from the literature and described an additional case of their own. Thus, the current case most likely represents 5th histologically confirmed primary extraskeletal chondroblastoma. The diagnosis of a primary soft tissue chondroblastoma was reached after consultation with two institutions and was based on the histological pattern. The three key diagnostic parameters are the presence of chondroblasts which are round or polygonal cells with well-defined cytoplasm and eccentric nucleus, osteoclast-like

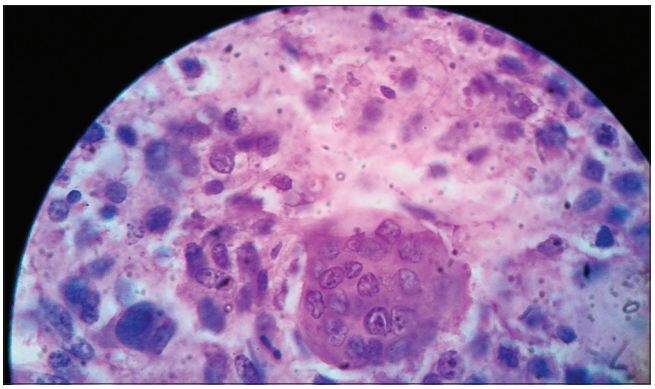

Figure 2: Histology showing chondroblasts which are round or polygonal cells with well-defined cytoplasm and eccentric nucleus, osteoclast-like giant cells, and chondromyxoid stroma surrounding neoplastic cells

giant cells, and chondromyxoid stroma surrounding neoplastic cells. All these findings were evident in our case. Furthermore, noted "chicken-wire" pattern calcification around the cells which is an important finding but not seen in all histological sections. The differential diagnosis should be made with a variety of reactive and neoplastic soft tissue lesions forming bone and cartilage and containing giant cells.[5]

Most chondroblastomas are benign. Described variant behaviors include aggressiveness, metastasis, sarcomatous change, and affliction of multiple bones. Most of the reported aggressive chondroblastomas are recurrent and are aggressive on recurrence. Significant iatrogenic factors contributing to the aggressiveness include breaching of the cortex and accidental spillage at the time of curettage resulting in implantation of tumor tissue in soft tissues.[6] In our case, the patient, at first, went to a quack who performed incision and drainage of the swelling which might have resulted in spillage and would have contributed to the aggressiveness of the tumor and ultimately leading to metastasis to the lung.

The number of patients with documented metastases is <1% of all reported cases of chondroblastoma in the world literature. The risk of metastases developing in chondroblastoma is clearly low and probably much <1% of all of these tumors. The common feature of all these cases is that the metastases developed if there had been a previous local recurrence of the primary tumor. The treatment of the metastases has varied. In some cases, the multiplicity of the lesions led to a lack of treatment and was followed by death. In other cases, thoracotomy has produced apparent long-term cures, while in other cases the lesions have remained static following simple biopsy.[4] In our case by the time the patient presented to us, there was lung metastasis beyond the stage of resection. Hence, palliative therapy was recommended to the patient.

To conclude, this case has been a unique and uncommon event of chondroblastoma in the elderly female with primary being extraskeletal in origin. Our case report emphasizes regarding the local aggressiveness and metastatic potential of the tumor. Hence, a tumor in unusual location needs a good histopathological evaluation with the differential diagnosis in the mind of the concerned tissue before proceeding to any intervention. The patient should be evaluated with CT chest if there is a local recurrence of this tumor for any possible lung metastasis for early intervention if feasible.

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Conflicts of interest

There are no conflicts of interest.

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