Primary Soft Tissue Giant Cell Tumor Of Neck

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Abstract

Soft tissue giant cell tumor (GCT-ST) of low malignant potential is an uncommon neoplasm, considered as the soft tissue counterpart of giant cell tumor of bone. We report a rare case of soft tissue Giant Cell Tumour of Neck in a 61 years old female with swelling in left side of neck, spontaneous in onset. Incisional biopsy was reported as Soft Tissue Giant Cell Tumour of low malignant potential. Wide local excision of the tumour was done.

We consider that, this tumor shows characteristic histologic features and clinical behaviour that render it a specific entity, being different from fibrous histiocytoma giant cell type, and leiomyosarcoma with osteoclast-like giant cells of soft tissues.

This is exceptionally rare and we know of only five previously published cases in the head and neck.

Introduction

GCT of soft tissue was first described by Salm and Sissons in 1972[1]. Soft tissue giant cell tumor (GCT-ST) of low malignant potential is an uncommon neoplasm, considered the soft tissue counterpart of giant cell tumor of bone. The age range of patients with primary GCT of soft tissue is 1–86 years with a female predominance of 3/2 GCT-ST mainly affects young to middle-age adults and presents as a painless growing mass mainly located in the lower extremities and trunk [2,3,4,5]. The majority of these tumours are located superficially (in subcutaneous tissue) and occur in the proximal parts of the extremities.

The tumour consists of a mixture of Osteoclast- like multinucleated giant cells, histiocytes, and fibroblasts. Malignant giant cell tumour of soft tissues is probably a variant of mesenchymal fibro-histiocytic sarcoma and that its unique light microscopic appearance justifies its separation from malignant fibrous histiocytoma.

Complete excision with negative surgical margins is associated with a benign clinical course in most cases [6].

Case Report(s)

A 61 year old female was admitted to the hospital for evaluation and management of 3 months old history of painless soft tissue swelling in left side of neck. Patient denied history of trauma or any other relevant history on this area. Physical examination revealed a hard, mass of 5 x 4 cms with restricted mobility, smooth surface, deep to the left sternocleidomastoid muscle. USG of Neck was done. FNAC was done which showed soft tissue malignant tumour of low malignant potential. Routine laboratory data were within normal limits. CT scan of the neck(fig 1,2,3) was done which showed a large heterogeneously enhancing lesion measuring 4.1 x 5.4 x 6.9 cms (AP X TR X CC) seen in left posterior cervical space in the infrahyoid part of neck showing large chunky calcifications with multiple necrotic areas within.

Incisional biopsy of the lesion was done and was reported as soft tissue giant cell tumour of low malignant potential. Wide local excision was done. Intraoperatively mass was found to be infiltrating prevertebral muscles and left Internal jugular vein. The tumour was completely excised and primary closure was done after placing sump drain.

Histopathology report: Sections studied from soft tissue mass shows sheets of composed of mononuclear cells, short spindle cells and diffusely scattered osteoclastic giant cells. Tumor cells show mild to moderate nuclear atypia and few mitotic figures. Focal areas of karyorrheitic debris and few angiectatic spaces filled with haemorrhage also seen (fig 4).

Tumor extends upto the base and anterior and posterior margins are free from tumor deposits.

Discussion

Primary GCT-ST is a recently described rare neoplasm of low malignant potential. In the past, GCTST was considered a benign variant of the giant cell malignant tumor of soft tissue, as it lacks atypia and pleomorphism, even if mitotic activity and vascular invasion is frequently observed [7]. Histologically, the differential diagnosis is broad GCT-ST may be mistaken with soft tissue malignant giant cell tumor (giant-cell-rich variant of pleomorphic sarcoma), extraskeletal osteosarcoma and other osteoclast rich neoplasms (i.e. leiomyosarcoma, epithelioid sarcoma, hemangiosarcoma, some
carcinomas and melanomas).
Malignant GCT-ST is histologically characterized by sarcomatous changes such as nuclear enlargement, high nuclear to cytoplasmic ratios, coarse chromatin, irregular nuclear contours and prominent nucleoli with evident nuclear atypia, areas of haemorrhage and coagulative necrosis [7,8,9,10].
Primary GCT-ST may also be confused with benign tumours such as tenosynovial giant cell tumours and giant cell-rich forms of nodular fasciitis.
GCT-ST affects young to middle-aged adults of both sexes, most frequently involves the lower extremities and trunk and usually presents as an asymptomatic deep growing mass.
The average duration of the complaint is less than 1 year.
The infiltrative growth pattern can involve deep delicate anatomical structures such as the neurovascular bundles, sometimes making complete surgical excision. Local recurrences and rare lung metastases were reported in cases of removal with positive surgical margins.

Conclusion

We consider that this tumor shows characteristic histologic features and indolent clinical evolution that render it a specific entity, being different from malignant GCT of soft tissues, fibrous histiocytoma giant cell type, and leiomyosarcoma with osteoclast-like giant cells of soft tissues.
GCT-ST is a tumor with low malignant potential that bears many similarities to the giant cell tumor of bone and should be considered in the differential diagnosis of giant cell-rich soft tissue neoplasms. Provided that GCT-ST is completely excised with negative surgical margins, a benign prognosis is expected in most cases.

Abbreviations(s)

GCT: Giant cell tumor, ST: Soft tissue

References

Illustrations

Illustration 1

Figure 1 - Coronal section image of CT neck showing extent of tumor

Figure 2 – Sagittal section image of CT neck showing extent of tumor
Figure 3 - Transverse section image of CT neck showing extent of tumor
(Features described as in case report.)
Figure 4- Microscopic features revealing a nodular architecture with irregularly distributed multinucleated giant cells
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