Giant Cell Tumor of Soft Tissue: A Case Study

Rachel Schneider, Dr. Brian O'Hara

Department of Pathology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA

BACKGROUND

Giant cell tumors of soft tissue are relatively uncommon tumors. They are considered to be the soft tissue counterpart to giant cell tumors of bone. Both tumors consist of multi-nucleated giant cells evenly distributed throughout a background of epithelioid mononuclear cells, and are usually benign, but can be locally invasive. Giant cell tumors of soft tissue typically occur in patients over age 40, and show no gender or racial predilection. They present as firm, well demarcated masses, which are not connected to the underlying muscle, tendon, or bone. Giant cell tumors of soft tissue are generally small, and tend to be less than 10 centimeters. They occur most frequently in the superficial soft tissue of the lower extremities, but may also occur in the in the deep soft-tissue as well as in other locations including the upper extremities, abdomen, and pelvis.

GROSS DESCRIPTION

On gross examination, giant cell tumors of soft tissue appear as multi-nodular, well circumscribed. They range in color from red/ brown to gray and often are gritty due to calcifications.

MICROSCOPIC DESCRIPTION

Microscopically, multi-nucleated osteoclast-like giant cells are uniformly distributed throughout a background of epithelioid mononuclear cell. They have a well vascularized stroma, hemosiderin-laden macrophages, and fibrous tissue. Additionally, these tumors contain both hemorrhagic and cystic components, and may contain or be surrounded by reactive bone.

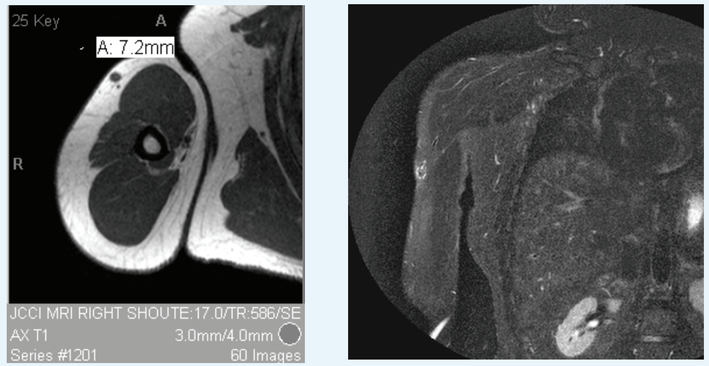
TREATMENT

The treatment for giant cell tumors of soft tissue is complete surgical excision.

CASE REPORT

A 46 year old male presented to his primary care physician with a painless mass in his right shoulder. An MRI was subsequently performed.

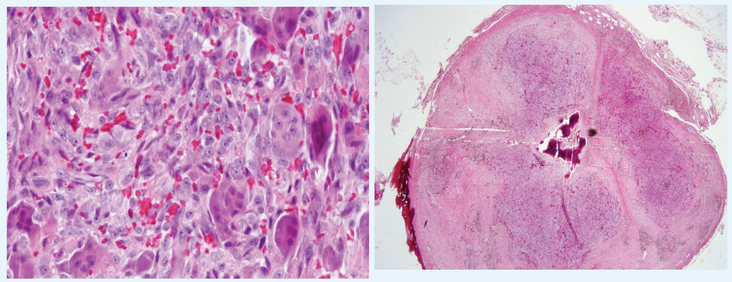
IMAGING



The MRI showed a 7mm mass in the anterior aspect of the right upper arm within the subcutaneous soft tissue. The mass was predominantly isointense to muscle with a small central hyper-intense focus on T1-weighted images.

Based on the MRI, the characteristics of the mass were still non-specific, so the mass was surgically removed.

MICROSCOPIC PATHOLOGY



MICROSCOPIC PATHOLOGY (Continued)

Pathological microscopic evaluation of the surgical specimen revealed evenly dispersed multinucleated giant cells and mononuclear cells within a circumscribed nodular mass. Additionally, hemosiderin-laden macrophages, focal metaplastic bone, scattered mitotic figures with no atypia, and minimal pleomorphism were noted. Based on a classical microscopic appearance, the diagnosis of a giant cell tumor of soft tissue was made. The patient is free of recurrences for over one year.

CONCLUSION

Giant cell tumors of soft tissue are relatively rare tumors, which most commonly occur in the superficial soft tissue of the extremities in middle aged adults. The differential diagnosis for a giant cell tumor of soft tissue includes giant cell malignant fibrous histiocytoma, plexiform fibrohistiocytic tumor, dermatofibroma, nodular fasciitis with giant cells, as well as rarer tumors such as osteoclast-like giant cell rich leiomyosarcoma, or extra-skeletal osteosarcoma. The definitive diagnosis is made by microscopic examination of the surgical specimen. Although giant cell tumors of soft tissue are usually benign, they can be locally destructive, and occasionally may recur (6.2%), most often when there is an incomplete excision. In rare cases, giant cell tumors of soft tissue can metastasize to the lungs, and there is a case report of this tumor metastasizing to the parotid gland.

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