Partial Scapulectomy for Secondary Malignant Chondrosarcoma

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Background:
Osteochondromas originating closer to the axial skeleton, such as those originating from the pelvis and scapula, have increased potential for malignant degeneration into chondrosarcoma. While scapula chondrosarcomas are rare, they have shown worse prognosis than peripheral tumors. The principal treatment modality for the management of scapular chondrosarcomas remains wide surgical excision as chondrosarcomas are not sensitive to chemotherapy or radiation.

Purpose:
The primary purpose of this video overview and case presentation is to demonstrate the surgical anatomy around the supraspinatus fossa on the superior aspect of the scapula. The secondary purpose is to demonstrate our technique for management of the muscular defect of the supraspinatus as marginal excision leaves a large gap between the medial and lateral aspect of the supraspinatus remnant.

Methods:
The history, examination, and diagnostic modalities used for the diagnosis of a scapular mass are reviewed. A case of a 26 year old male with symptomatic enlarging posterior shoulder mass is presented. Imaging modalities confirmed the diagnosis of a secondary peripheral chondrosarcoma. Surgical resection of the mass en bloc involving the supraspinatus fossa and scapular spine is demonstrated through a posteriorly based trapezius splitting approach. The supraspinatus muscle is reconstructed and anchored to the remnant scapular spine through bone tunnels.

Results:
The patient remains tumor free on follow up imaging. The supraspinatus reconstruction also appears to be functioning with painless full range of motion and strength compared to the contralateral on follow up.

Conclusion:
Secondary peripheral chondrosarcoma of the superior scapula involving the supraspinatus fossa is resected through a posteriorly based approach. The supraspinatus sacrificed for satisfactory margins is reconstructed and repaired through bone tunnels.