Skeletal Muscle Metastasis Mimicking a Shoulder Effusion

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Urothelial carcinoma is a rare cause of metastatic disease appearing in skeletal muscle. We describe a rare presentation of malignancy mimicking a shoulder effusion.

A 65-year-old man presented with ongoing swelling and dysfunction of his right shoulder. He had a history of urothelial cell carcinoma treated by surgical resection 8 months previously. Two months before presentation to the rheumatology service he developed progressive swelling and dysfunction of his right shoulder (Figure 1). This was accompanied by a 30-pound weight loss, anorexia, and general weakness. He reported seeking attention 1 month previously and having 800 cc of fluid aspirated from his right shoulder. The initial 800 cc aspirate showed no bacteria growth. Returning to hospital, he was seen by the rheumatology service: an additional 800 cc of blood-tinged fluid was aspirated from the anterolateral aspect of the shoulder. Magnetic resonance imaging scan of the right shoulder (T2-weighted image) demonstrated a large cystic mass embedded in the deltoid muscle, with no involvement of the subacromial or subdeltoid bursae (Figure 1). Subsequent fine-needle aspiration of the mass demonstrated urothelial carcinoma. Broader medical investigations revealed local recurrence of urothelial carcinoma with metastatic disease in the lungs (Figure 1, arrow) and adrenal glands. Thus, the results confirmed a large cystic mass embedded in the deltoid consistent with metastatic disease.

Large volumes of fluid can be seen in subacromial bursitis and mimic soft-tissue masses in the shoulder region[1]. Haygood, *et al* reviewed cases of metastases to skeletal muscle and reported that the majority of metastases developed in the trunk muscles, particularly the paraspinals and psoas[2]. Urothelial carcinoma is a rare cause of metastatic disease to skeletal muscle, with only 1 such case reported to date in the shoulder[3].

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Figure 1. Left panel: swelling and dysfunction of the patient's right shoulder. Right panel: investigations revealed local recurrence of urothelial carcinoma with metastatic disease in the lungs (arrow).

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