Dilemmas in Diagnosing Soft Tissue Tumors: A Case Report

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Case Description

A 64-year-old female patient presented to the emergency department with right arm pain and swelling that had progressively worsened over the past 1.5 months. She complained of intermittent throbbing and severe pain over a discrete lump in the distal right upper arm. She denied weakness, numbness, warmth or trauma to the affected area. She also reported fatigue and a 10 lb weight loss over the past month. She was a smoker with a 25+ pack year history with COPD on 2.5-3L oxygen at baseline with worsening shortness of breath over the past few days. She denied recent illness, fevers, chills, cough or sputum production.

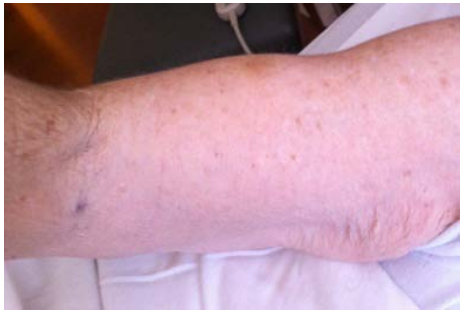

Fig 1. Gross image of patient's right arm

Physical examination revealed a thin woman in some distress due to pain. Vital signs were stable and normal on 3L O2. Lung exam revealed diminished breath sounds throughout. A 4x3x3cm firm mass was present in the right brachialis muscle area that was mobile, non-erythematous, and tender to palpation (see Fig. 1). The remainder of the exam was unremarkable. Pertinent laboratory findings included serum sodium, 132 mmol/L; corrected calcium, 9.6 mg/dL; ESR, 43 mm/hr; CRP, 12 mg/L; and a normal white cell count. CT showed a hypodense intramuscular mass within the brachialis muscle with faint peripheral enhancement (see Fig. 2). MRI revealed the mass to be 4x2.5x2cm (see Figs. 3-4). A presumptive diagnosis of a soft tissue sarcoma was made.

Plans were arranged for definitive biopsy and treatment to be performed at a tertiary center. However, a previous CXR from a few weeks prior to admission revealed minimal blunting of the right costophrenic angle. As sarcomas most commonly metastasize to the lung[1], a chest CT was obtained which revealed bulky adenopathy and a 5.0x3.1cm right hilar mass consistent with bronchogenic carcinoma. Fine needle aspiration of the brachialis muscle mass revealed metastatic non-small cell lung carcinoma. Subsequent imaging revealed additional metastases to the brain. The patient began systemic chemotherapy with carboplatin and pemetrexed and whole brain radiation; she was discharged with plans to follow up with an outpatient center for remaining chemotherapy.

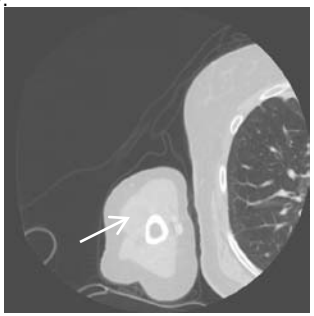

Fig 2. CT upper extremity with contrast depicting hypodense intramuscular mass

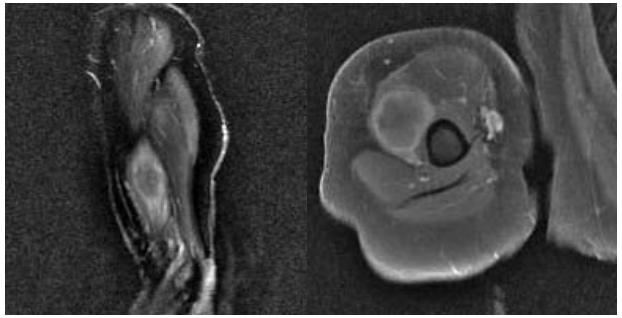

Fig 3. MRI humerus FSE IR sagittal view

Fig 4. MRI humerus T1 axial view

Discussion

Primary lung cancer presenting as a skeletal muscle metastasis is a rare phenomenon despite muscular mass accounting for approximately 50% of total body weight. It is hypothesized that the inhospitable environment of muscular mass with its contractile actions and acidic pH due to the accumulation of lactic acid contribute to its low occurrence. The true incidence of muscle metastasis from carcinomas of any origin is unknown, but it is believed to be as low as 0.8% from a series of autopsies.[2-4] This case illustrates the potential for delays in diagnosis and treatment given the limitations in radiologic imaging modalities in differentiating soft tissue tumors. The diagnostic biopsy for a suspected soft tissue sarcoma is ideally performed by the surgeon planning the definitive resection so that adequate tissue is obtained that does not compromise therapy.[1] In situations where referral to tertiary centers is necessary to obtain the diagnostic biopsy, coordination of care can be difficult and time-consuming. However, remembering rare presentations of more common pathologies such as lung cancer may lead to earlier diagnosis and more accurate treatment.

References

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