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When the muscles masquerade!

Shenoy M, Ruchi R, Tuliani T, Rojas G.

Department of Internal Medicine, Wayne State University/ Detroit Medical Center, USA

ABSTRACT

A 61 year old African American gentleman presented with soreness in his thighs and shoulders and intermittent dark brown urine since two weeks. Review of systems revealed anorexia and weight loss of 20 pounds over the last two weeks. His past history was significant for hypertension, hyperlipidemia, diabetes mellitus and chronic smoking. There had been no recent change in his statin dosage. His exam revealed thigh and shoulder muscle tenderness and extensive clubbing of finger nails. His labs at admission were significant for Potassium (6.1), Phosphorus (5.2), ALT (223), AST (917), ALP (331), platelet count (681), CPK (36,317) units. His urine was positive for blood on dipstick. MRI of the upper extremities revealed extensive ischemic myositis of left shoulder and chest wall. Muscle biopsy reported the absence of inflammation and a possible neurological component. CT thorax and abdomen showed huge paratracheal mass, several lung nodules, mediastinal nodes and liver mass, suggestive of metastases. Bronchoscopy revealed non small cell lung cancer. Patient's hospital stay was complicated by superior vena cava syndrome, inpatient radiation therapy, brain metastases and outpatient chemotherapy. Thus although unique, malignancy should be considered in the differential for rhabdomyolysis, especially in the inpatient setting.

INTRODUCTION

Malignancies can present with rhabdomyolysis. The onset of this paraneoplastic feature can precede, accompany or follow the cancer diagnosis.

LEARNING OBJECTIVES:

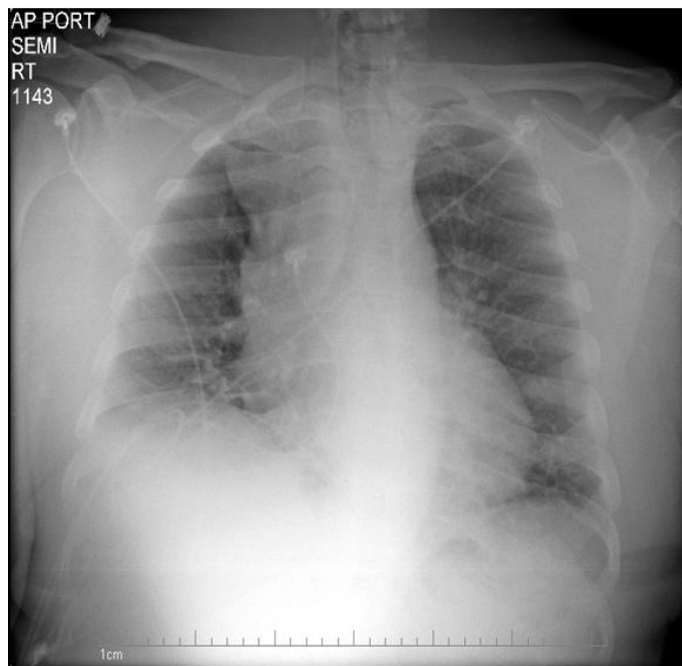
- 1) Characterize one of the lesser considered diagnoses in a case of rhabdomyolysis.
- 2) Emphasize the importance of maintaining a high level of suspicion for cancer diagnoses.

CASE:

We present the case of a 61 year old African American gentleman who presented with dull continuous soreness in his thighs and shoulders and intermittent dark brown urine since two weeks. A detailed review of systems was conducted and the only positive findings were anorexia and weight loss of 20 pounds over the last two weeks. His past history was significant for hypertension, hyperlipidemia, diabetes mellitus II and chronic smoking. There had been no recent change in his statin dosage. His exam revealed thigh and shoulder muscle tenderness and extensive clubbing of finger nails. His labs at admission were significant for Potassium (6.1), Phosphorus (5.2), ALT (223), AST (917), ALP (331), platelet count (681), CPK (36,317) units. His urine was positive for blood on dipstick.

Chest Xray revealed large right-sided mediastinal mass with elevation of right hemi-diaphragm. (Figure 1)

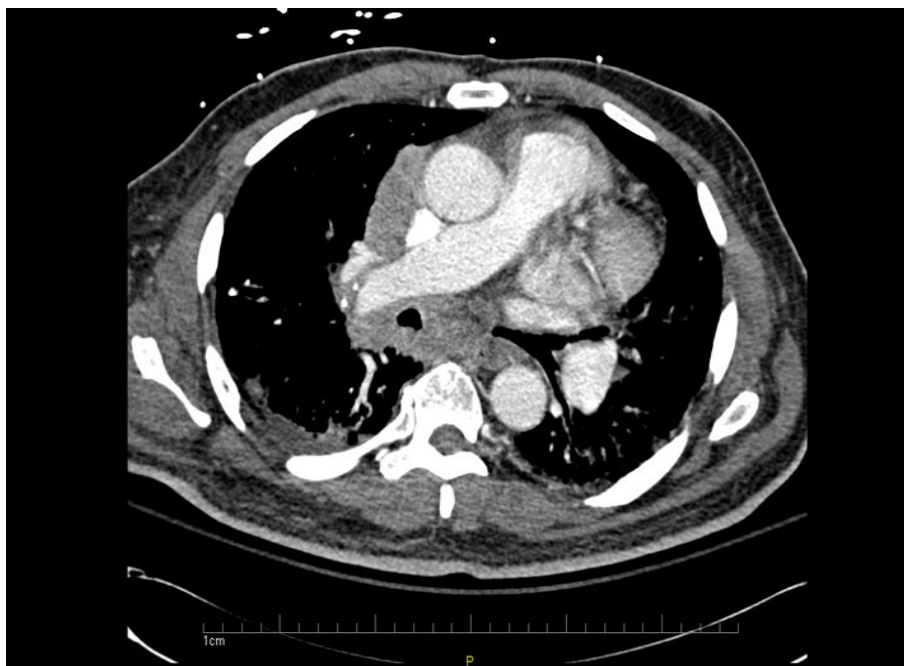
Figure 1



MRI of the upper extremities revealed extensive ischemic myositis of left shoulder and chest wall. Muscle biopsy reported the absence of inflammation and a possible neurological component.

CT thorax and abdomen showed huge paratracheal mass, several lung nodules, mediastinal nodes and liver mass, suggestive of metastases. (Figure 2)

Figure 2



Bronchoscopy revealed non small cell lung cancer. Patient's hospital stay was later complicated by superior vena cava syndrome, inpatient radiation therapy, brain metastases and outpatient chemotherapy.

DISCUSSION:

Paraneoplastic syndromes comprise of clinical and biochemical disturbances associated with malignancies but not directly related to invasion by the primary tumor or its metastases. Rhabdomyolysis is basically the breakdown of muscle fibers, typically resulting from trauma, infections, medications, toxins, prolonged immobilization, extreme physical activity, hypothyroidism, electrolyte disturbances etc. Myopathy presents as muscle weakness due to similar etiologies. The exact mechanism of their coexistence remains incompletely understood, but may be related to the expression of common autoantigens between cancer tissue and muscle tissue.¹

Lung cancer is the 2nd most prevalent cancer amongst both men and women in the United States, with 222520 new cases in 2010.² However clinical practice guidelines issued by the American College of Chest Physicians in 2007 recommended against routine screening for lung cancer because of a lack of evidence of benefit.³ In this setting, it becomes all the more important to maintain a high level of suspicion. The red flags in this case were weight loss, chronic smoking, clubbing, thrombocytosis and acute muscle breakdown in the absence of typical triggers. Similar bizarre manifestations have been reported with lymphoma, gastric cancer, lung cancer, breast cancer, pheochromocytomas etc. Thus although unique, malignancy should be considered in the differential for rhabdomyolysis, especially in the inpatient setting.

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