Just a Clot, or Not? Metastatic Osteosarcoma Initially Presenting as Refractory DVT.

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Introduction

- Osteosarcoma is a rare and highly malignant tumor with an estimated incidence of 3 cases/million population/year (0.2% of all malignant tumors).
- Osteosarcoma typically presents in the first or second decades of life and primarily affects the long bones.
- Initial presentation of extremity pain followed by soft-tissue swelling is very similar to that of deep venous thrombosis (DVT).

Case Presentation

- A 29-year old African American male with a history of hypertension was diagnosed with DVT at an outside facility after presenting with left leg pain and swelling. Lower extremity ultrasound revealed a non-obstructive left popliteal vein thrombosis, and he was started on warfarin therapy.
- One month after initial diagnosis of DVT, he presented to the ED with similar symptoms of left leg pain and swelling. A repeat ultrasound revealed no expansion of the original clot and he was discharged with continued warfarin therapy and compression stockings.
- Two months after initial diagnosis he presented with persistent left leg pain and worsening swelling despite compliance with this regimen.
- On physical exam, he was noted to have non-pitting edema with tenderness on palpation of the left lower extremity from the knee down. The leg was without erythema or skin breakdown. He had 0/5 strength of his left foot, absent sensation of the left lateral foot, and absent Achilles reflex on the left. Distal pulses were diminished, but found on doppler.
- A CT angiogram, obtained to rule out pulmonary embolism, revealed multiple bilateral pulmonary lesions of varying sizes, consistent with metastatic disease.

Hospital Course

- Interventional Radiology performed a CT-guided biopsy of a left lingular lung mass, which was positive for metastatic osteosarcoma. (Image 4 and 5)
- Plain films of the left leg revealed a mass of the posterior proximal tibia causing periosteal elevation. (Image 1)
- A CT scan of his brain, which was done because of headache, revealed a 6 centimeter supratralamic brain mass with adjacent edema. (Image 3)
- Neurosurgery declined to intervene given the size and location of the brain mass, and poor prognosis.
- Hematology-Oncology initiated two cycles of palliative chemotherapy, without change in the size of his brain mass on follow-up MRI.
- The patient passed away two months after diagnosis of osteosarcoma due to complications and progression of his disease.

Discussion

- Venous thromboembolism is unlikely in a healthy young adult without risk factors, such as recent surgery or major trauma.
- Malignancies are well known to create procoagulant states which can lead to a DVT. Additionally, tumors can cause thrombosis by external compression of vessels or by direct vascular invasion.
- DVT is a frequent complication of osteosarcoma, and can rarely be the presenting feature. 1,4
- Thrombin itself has been implicated as a contributor to both proliferation and migration of soft-tissue sarcomas.1,2 (Figure 1)
- Malignancy should be ruled out in any young patient without risk factors presenting with DVT, especially when refractory to standard treatment.

REFERENCES: