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Painful calf swelling: Think beyond deep vein thrombosis

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Introduction: The differential diagnosis for unilateral painful swollen limb is broad; deep vein thrombosis (DVT), calf muscle tear, ruptured popliteal cyst, cellulitis, myositis, intramuscular hematoma, compartment syndrome and superficial thrombophlebitis. It is important to rule out DVT, considering the morbidity and mortality if it is unrecognized.

Case Report: We present the case of a 4 year old Hispanic male with no past medical history, referred to our institution with left lower extremity pain and swelling after he tripped over a cord and fell one week prior to admission. On physical examination, his left midcalf was edematous, non-erythematous and tender to palpation Left lower extremity (LLE) Doppler ultrasound (US) from the outside hospital was reported as left posterior tibial DVT and the patient was started on Enoxaparin (1 mg/kg/dose SQ every 12 hours). He was transferred to our institution for anticoagulation management. Repeat LLE Doppler US at our institution did not reveal DVT. In addition, D-dimer was not elevated and his hypercoagulable work up including protein C, protein S, anti-thrombin III, Factor V Leiden and prothrombin gene mutation was negative. On follow up examination, his left calf swelling had worsened and extended into the anterior aspect of the leg. Due to the absence of DVT by repeat Doppler US and clinical suspicion of intramuscular bleeding, Enoxaparin was stopped within 24-36 hours of initiation. MRI/MRV of the affected leg confirmed the presence of a large sub-acute or chronic hematoma identified within the deep muscular compartment of the mid left calf, interposed between the gastrocnemius and soleus musculature measuring 17×26×57 mm with no evidence of DVT. Further coagulation labs showed Factor VIII level at 24% and Factor IX level at 94%, confirming a diagnosis of mild hemophilia A. Hence, Factor VIII concentrate was administered for bleeding control.

Discussion: A detailed clinical evaluation in addition to radiological evidence for DVT is warranted before initiating anticoagulation therapy, as it can aggravate non-thrombotic causes of painful calf swelling such as intramuscular bleeding. Between 10-20% of patients with hemophilia A can have an atypical initial presentation with an intramuscular bleed. Early identification and proper management of intramuscular bleeding with factor replacement is important to prevent re-bleeding, neurovascular compromise, permanent contracture and formation of pseudo-tumors. Therefore, a high index of suspicion is warranted in such cases.

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