

Compartment Syndrome or Deep vein thrombosis: How should we treat the tender “fat leg”?

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Abstract

Introduction: A patient presented with a painful calf following minor trauma to his leg. We emphasise the importance of clinical signs and radiological imaging prior to initiating treatment in the acutely painful leg.

Discussion: The patient was treated empirically with anticoagulation in the A&E department and an outpatient Doppler ultrasound performed 48 hours later, as no out-of-hours facility was available. In the meantime, the patient developed increasingly painful and oedematous limb with common peroneal nerve palsy. He underwent an emergency fasciotomy and has recovered well postoperatively with full mobility.

Conclusion: Diagnosis in a tender, swollen limb especially following minor trauma can be challenging. It can be tempting to treat them as venous thrombosis. However the mechanism of insult, patient fitness and clinical signs prove valuable. We feel a Doppler ultrasound is the minimum investigation that should be available to the emergency physician at all times, to avoid such clinical incidents.

INTRODUCTION

We describe a case of a fit 57-year-old man who was admitted with a tender, swollen leg. There was a history of trivial trauma sustained when he twisted his ankle whilst getting down from his truck, a week before. We discuss the consequences of initiation of treatment without relevant investigation. The sequence of events that followed relate to the difficulty in deciding upon the appropriate management when faced with an unclear diagnosis.

Aim: The aim of this report is to highlight the importance of clinical judgement and to use appropriate, yet simple investigations to support the diagnosis.

CASE REPORT

A middle aged gentleman aged 57 was seen in the A&E with a 2 week history of painful left calf following trivial trauma. A diagnosis of deep vein thrombosis was made. He was empirically started on low molecular weight heparin and discharged with plans for an outpatient ultrasound as there was no facility for a Doppler ultrasound out-of-hours. At 48hrs the oedema had spread to mid-thigh and the pain was worse. Doppler ultrasound showed patent femoral and

popliteal veins, both of which demonstrated good blood flow and responded well to direct compression, however there was a poor response to calf compression. The following day the patient developed numbness over the leg and an orthopaedic consult was sought. On examination he was found to have soft anterior and anterolateral compartments & a tense posterior compartment. Passive extension of the toes was painful and the foot was well perfused. A repeat ultrasound showed a large haematoma in the posterior compartment displacing the medial head of the gastrocnemius (fig 1).

Figure 1



He underwent an emergency fasciotomy and evacuation of the haematoma. Intraoperatively, the compartment pressures in the anterior and lateral compartment were normal.

DISCUSSION

An acutely painful, swollen leg especially following trivial trauma should always be viewed with suspicion. In the above scenario, the patient was anticoagulated based on a presumptive diagnosis. Although, it is difficult to visualise the calf veins in the acutely oedematous phase, an ultrasound scan would have revealed a haematoma, which would have

precluded use of heparin. Minor trauma may result in a small gastrocnemius tear₁ which can easily be missed. This may present as a delayed compartment syndrome₃.

CONCLUSION

We recommend scanning the full length of the limb prior to initiation of treatment. Although, we appreciate that the deep veins may sometimes be difficult to visualise in an oedematous limb, a Doppler ultrasound will show a haematoma. Early orthopaedic consult, especially if the history suggests trauma to the limb is advised to prevent any adverse outcome. Frequent clinical assessment is mandatory to diagnose early neurological deterioration, as this may alter the prognosis quite substantially.

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