A Rare Case of Acute Compartment Syndrome of Leg Without Fracture

[1]AB M Izzuddin; [2]MN M Hilmi; [1]MSK Lynn Azura
[1]Department of Orthopaedic, Hospital Ampang, [2]Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia

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INTRODUCTION:

Acute compartment syndrome (ACS) is one of the main orthopaedic emergencies that requires urgent fasciotomy. Delay in treatment due to late diagnosis may lead to irreversible complications. Several studies showed that fractures are the most common cause of ACS, accounting for about 69–75% of cases. Leg acute compartment syndrome has been reported in 2-9% of tibial fractures. However, with absence of bony fracture, one must suspect risk of compartment syndrome especially in early presentation of swollen limb post trauma.

We report an unusual trauma case of an acute compartment syndrome of leg without fracture originating from bleeding of deep artery of leg.

REPORT:

A 25-year-old man sustained a motor vehicle accident and presented to the emergency department for severe pain and swelling over his left calf. The plain radiograph revealed intact tibia and fibula. The pain and swelling worsens despite adequate analgesia. He complained of increasing numbness over lateral part of leg and foot as well. The diagnosis of acute compartment syndrome was made clinically.

Patient went for emergency 2-incision fasciotomy of left leg to release all 4 compartments. A large blood clot was removed from medial incision and muscles were bulging. The wound was left open to allow relief of osteofascial compartment pressure.

Post operation, the swelling and numbness improved however, there was continuous oozing of blood from medial incision coinciding with significant hemoglobin drop. Patient went for a wound exploration surgery, and it revealed multilevel vertical tears of his posterior tibial artery. Direct arterial repair was done. He was discharged well after fasciotomy wound closure was done.

Figure 1

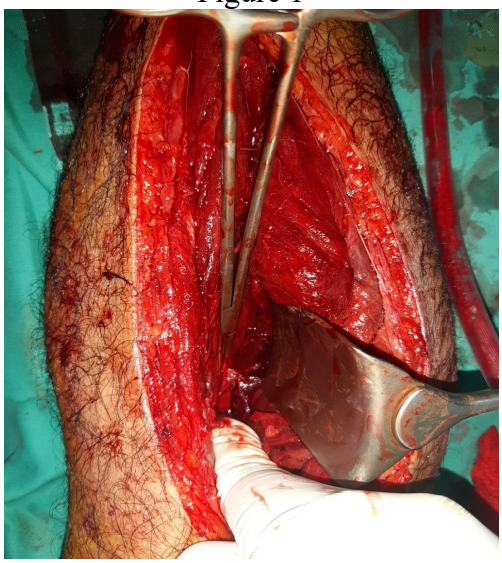

Figure 1: Intraoperative picture of multilevel vertical tear of posterior tibial artery with contusion of surrounding muscle.

CONCLUSION:

Compartment syndrome without a fracture in high impact trauma should raise a high suspicion of vascular injury or crush injury. Emergency fasciotomy should be conducted with exploration for vascular repair to control active bleeding predisposing to increase compartment pressure and continued blood loss. CT angiography should be done if available to identify source of vascular injury to help in exploration and repair intraoperatively

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