
CASE REPORT**Acute compartment syndrome due to delayed tourniquet release in distal forearm osteosynthesis: A case report**

T. M. Ridzuan¹, I. M. A. Ramdhan¹, I. P. Faris^{1*}

¹Department of Orthopaedics, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak

Abstract

Compartment syndrome is a known complication in trauma. Commonly it occurs immediately after trauma and involves lower limbs especially in tibial fractures. However, it can also happen after internal fixation and less commonly in upper limb fractures post-surgery. This is a case of compartment syndrome of the forearm developed after open reduction and plating of distal shaft of radius and ulna secondary to hematoma collection. The use of tourniquet intra-operatively that was deflated after skin closure masked the bleeding from small arteries. Fasciotomy performed and plate was left in situ without subsequent major complication.

Keywords: Compartment Syndrome, Forearm Fractures, Plating Radius Ulna, Tourniquet

Introduction

Acute compartment syndrome is a limb threatening surgical emergency that can be caused by accumulation of blood and transudates within a closed compartment. The risk of developing this condition is less than 1% in patients with distal radius fractures and about 4-5% in those with tibial diaphyseal fractures [1]. Compartment syndrome following internal fixation of upper limb is not common, and carries a significant risk if not identified early. Rodgers *et al.*, reported a case of compartment syndrome following chronic monteggia surgical fixation [2]. Though rarely seen, compartment syndrome after open reduction and internal fixation is a devastating condition that needs to be diagnosed early to limit or prevent further damage. We report a case of acute compartment syndrome that developed after open reduction and plating in distal forearm fractures. In our case torniquet was used and was only deflated after skin closure.

Case Report

A 15-year-old teenager sustained injury to his left forearm after a fall. On examination, his distal left forearm was deformed. The swelling was not tense and neurovascular assessment was non-remarkable. The radiograph of the forearm showed fracture of distal one-third radius and ulna (Fig. 1). The fracture was temporarily held with cast and surgery was done 3 days later.

Under general anesthesia, open reduction and plating of radius and ulna were performed using modified Henry and posterior approach, respectively. Both fractures were reduced and stabilized with dynamic compression plate (Fig. 1). Fascia was left unrepaired. Subcutaneous layer was sutured followed by the skin. No surgical drain inserted. Total tourniquet time was 2 hours 10 minutes and was deflated after wound closure.

Six hours after surgery patient complained of pain and tightness over dressing site at the surgical wound. Thus, the bandage was reapplied but