



IJCRR

Section: Healthcare

ISI Impact Factor
(2019-20): 1.628

IC Value (2019): 90.81

SJIF (2020) = 7.893



Copyright@IJCRR

Double Trouble Post-Femoral Fracture – A Rare Case Report

Haniza Sahdi¹, Mohamad Zaki Mohd Amin², Denis Dian Lee³, Cassandra Ting⁴

¹Senior medical lecturer, Department of Orthopaedics, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Sarawak, Malaysia; ²Professor, Department of Orthopaedics, Faculty of Medicine and Health Sciences, University Malaysia Sarawak (UNIMAS), Kota Samarahan, Sarawak, Malaysia; ³Orthopaedic Surgeon, Hospital Putrajaya, Jalan Pg, Presint 7, Wilayah Persekutuan Putrajaya, Malaysia; ⁴Medical Officer, Sarawak General Hospital, Jalan Hospital, 93586 Kuching, Sarawak, Malaysia.

ABSTRACT

Fat embolism syndrome (FES) and acute compartment syndrome (ACS) are common long bone fracture complications that have been discussed extensively. Nevertheless, the simultaneous manifestation of FES and ACS after a single long bone fracture has never been reported. FES results from the extensive inflammatory response to fat emboli in the systemic microcirculation. The diagnosis is made with a set of specific clinical criteria. Treatment of FES is supportive. ACS ensues when a closed Osseo-fascial compartmental pressure exceeds the capillary perfusion pressure, leading to microvascular compromise. Fasciotomy is the only proven mode of treatment. We present a case of an 18 year-old-gentleman with closed traumatic femoral fracture, who then developed tense swelling of the ipsilateral thigh, Type I respiratory failure and axillary petechiae. A diagnosis of concurrent fat embolism syndrome and acute compartment syndrome of the thigh was made. High index of suspicion is essential for prompt diagnosis of concurrent FES and compartment syndrome as multiple complications that arise can be overlooked by unsuspecting practitioners who may be sidetracked by the multitude of presentations.

Key Words: Compartment syndrome, Fat embolism, Femur, Fracture

INTRODUCTION

Compartment syndrome and fat embolism syndrome following a long bone fracture are nothing new in orthopaedic practice. Early detection and prompt treatment would be dealt out as the Damage Control Orthopaedics (DCO) doctrine dictate. However, the occurrence of both FES and ACS in a single fractured long bone is exceedingly rare.

Fat embolism syndrome (FES) is a manifestation of the extensive inflammatory response to systemic fat emboli within the microcirculation, resulting in respiratory, neurological, cutaneous and retinal presentations. FES remains a challenge as there is no consensus on the ultimate diagnostic criteria. The mainstay of FES treatment is supportive. According to Mubarak and Owen,¹ acute compartment syndrome of the extremities is an orthopaedic emergency arising from an increase in pressure within a closed Osseo-fascial compartment that exceeds the capillary perfusion pressure, causing microvascular compromise. Fasciotomy is definitive of treatment for ACS.²

This case is presented for its uniqueness and complexity of the concomitant complications. To date, no literature is available regarding FES and ACS coexisting together in a patient following a single long bone fracture. A high index of suspicion may lead to preventable mortality and morbidity.

CASE REPORT

An 18-year-old-man with no significant underlying medical illness presented to the emergency room with a closed fracture of the left femur following a road traffic accident (Figure 1). There was no evidence of chest, intra-abdominal, pelvic or other injuries. Vital signs were stable. The corresponding haemoglobin level and platelet count was 15 g/dL and $270 \times 10^3/\mu\text{l}$. At presentation, the left thigh compartment was soft without ecchymosis or erythema. Distal pulses and perfusion of the affected limb were good. High tibial skeletal traction was applied while awaiting definitive fracture fixation. Throughout admission, the thigh circumference increased gradually without a neurovascular deficit. He did not experience disproportionate pain.

Corresponding Author:

Haniza Sahdi, Department of Orthopaedics, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Jalan Datuk Mohammad Musa, 94300 Kota Samarahan, Sarawak, Malaysia; Tel: +6082581000; Fax: +6082665152; Email: hnizas@hotmail.com

ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 16.10.2020

Revised: 12.11.2020

Accepted: 14.12.2020

Published: 23.02.2021