

## Fat Embolism Syndrome Post Nailing: Isolated Open Tibia Fracture

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### INTRODUCTION

Fat embolism syndrome (FES) is a well-known life-threatening condition that usually develop after long bone fractures in Orthopaedic.

### CASE STUDY:

A 29 years old, Bangladeshi male was involved in a road traffic accident. He sustained an open Gustillo 1A comminuted fracture midshaft left tibia. He underwent wound debridement and intramedullary nailing over the left tibia on the same day of admission.

The next day, he was complaining of dyspnoea and tachypneic. His SPO<sub>2</sub> level was drop to 91% under room air. He was given oxygen support of 60% venturimask.

Chest X-ray showed groundglass appearance. CT Pulmonary Angiography showed diffused ground glass opacities and foci consolidations in both lungs with septal thickening, may represent pulmonary fat embolism. He was then able to wean down to room air and discharged home well

### DISCUSSION:

Fat embolism syndrome is one of the most overlooked causes of dyspnoea. It is a potential life-threatening complication of Orthopedic reaming procedures during interlocking nail. It has been questioned because of the possible harmful systemic effects of intramedullary reaming. The consequences can vary from FES, ARDS to multi organ failure. Reaming of medullary canal has been shown to cause substantial elevations in intramedullary pressures, inducing marrow fragment embolization into venous circulation that has been regarded as a cause of FES and ARDS. Duwelius et al reported, the peak showers of emboli were, during canal with awl, second peak during early passes of reamer and during insertion of nail. Effort such as different reamer designs (such as Reamer Irrigator Aspirator), venting during nailing and unreamed nailing technique have been used to minimize intramedullary pressure changes.

### CONCLUSION:

FES can occur during nailing in a stable patient with isolated open tibial fracture. Anyone treating patients who present with a long bone fracture and sudden respiratory impairment should keep in mind possibility of FES.

### REFERENCES:

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2. Kallina C, Probe RA. Paradoxical fat embolism after intramedullary rodding. *J Orthop Trauma*. 2001;
3. Duwelis PJ, Huckfeldt R. The effects of femoral intramedullary reaming on pulmonary function in a sheep lung model. *J Bone Joint Surg (Am)* 1997;



Figure 1: Left Tibia Xray upon arrival



Figure 2: Xray Post Nailing



Figure 3: CXR Upon admission



Figure 4: CXR Post Operative



Figure 5: CECTPA: Shows Lung Infiltration