

## Cerebral Fat Embolism Syndrome

Goh Yokeswaran; Tan HP, Satriya SHA

<sup>1</sup> Orthopedic Department, Hospital Tengku Ampuan Rahimah, Jalan Langat, Klang, Selangor.

### INTRODUCTION:

Cerebral fat embolism (CFE) is an uncommon type of fat embolism syndrome (FES) caused by embolization of fat particles into multiple organs, mainly the brain. It typically occurs within 24–72 hours after initial trigger such as trauma with multiples long bone fractures. The diagnosis of FES is based on clinical and imaging findings (Gurd's criteria), but requires exclusion of alternative diagnoses. Prompt recognition of FES is important to initiate early supportive treatment.

### REPORT:

A 22 year-old gentleman presented to Emergency Department with alleged motor vehicle accident, sustained an open fracture right proximal tibia and closed fracture distal third right femur. He was initially conscious and alert, but noted reduced consciousness (E3M4V5) 36 hours post trauma. Urgent CT brain shows well defined hypodensities in body of caudate nuclei bilaterally, correspond with features of cerebral FES.

### RESULT:

Patient proceeded with emergency wound debridement and external fixation over right tibia and interlocking nail of right femur on same setting under general anaesthesia.

Post-operatively, patient was admitted to ICU for close monitoring, in view of difficult extubation and poor GCS recovery. Repeated CT brain doesn't show any worsening changes.

One week later, he was able to wean off oxygen supplement completely, and was discharged home with wheelchair ambulation.

Subsequent follow up in outpatient clinic, noted patient's GCS full, and there was no other complications.



### CONCLUSION:

Although there is no specific treatment for FES, prompt recognition is important because it can avoid unnecessary interventions and clarify prognosis. Patients with severe FES can become critically ill, but even comatose patients with respiratory failure may recover favorably. Prophylactic measures, such as early fractures fixation and certain intra-operative techniques, may help decrease the incidence and severity of FES. Particularly in this case, patient recovered well in view of early surgical intervention even though initially doesn't full fill Gurd's criteria.

### REFERENCE:

- I. Mark D Miller, Stephen R Thompson; Miller Review of Orthopaedic 8<sup>th</sup> edition 2019
- II. Vinay Kumar, Abul Abbas, Jon Aster; Robbins and Contran Pathologic Basic of Disease 10<sup>th</sup> edition , 2020