

Fat Embolism Syndrome - A Case Report

Dr Bharath¹, Dr TVSP Murthy², Dr Likhitha³

Abstract: *Clinical syndrome of neurologic ,respiratory, dermatological abnormalities that occur within 48-72 hours after trauma. It is a physiological response of fat within the systemic circulation. Fat embolism syndrome is a clinical diagnosis, mostly associated with long bone and pelvic fractures.*

Keywords: long bone fracture, fat embolism syndrome (FES)

1. Introduction

Fat embolism syndrome (FES) is a rare clinical syndrome that can complicate a wide variety of clinical conditions, particularly those where fat is manipulated. Almost all cases of FES are due to long bone and pelvic fractures (bone marrow contains a high content of fat). However, some cases are associated with trauma in the absence of orthopedic fractures and rare cases are nontrauma-related.

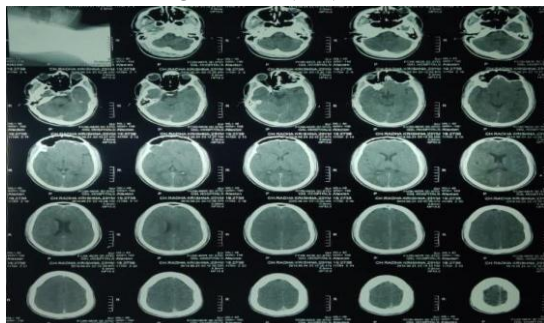
2. Case Report

A 23 year old male alleged to have sustained injury due to collision of bike with an auto , he complains of pain , swelling, and deformity in the left thigh since fall. No h/o head injury, vomiting , LOC, ear and nose bleed.

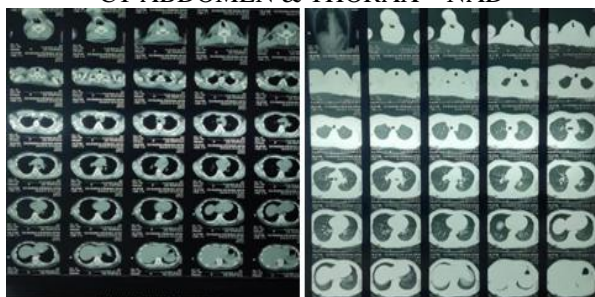
Investigations

- Hb: 13.4.
- BGT: B positive.
- Virals: HIV, HBsAg, HCV:NR.
- RFT: WNL.
- Serum electrolytes :WNL.
- USG abdomen :NAD.
- ECG:WNL

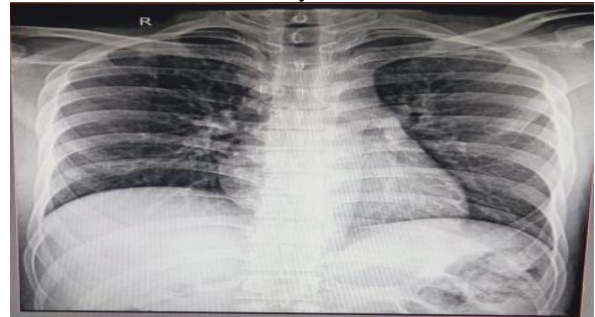
CT BRAIN –NAD



CT ABDOMEN & THORAX – NAD



Chest X ray AP view



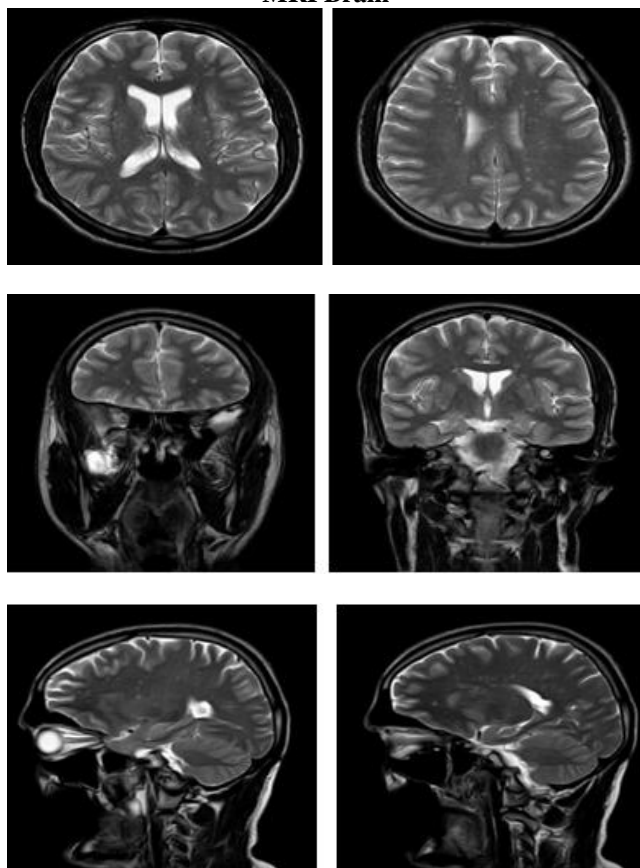
X-RAY of left thigh



Patient posted for elective fixation of fracture under regional anaesthesia. Closed reduction and internal fixation with intramedullary interlocking was done patient shifted to icu with stable vitals.

GENERAL EXAMINATION	GCS	VITALS	INVESTIGATIONS	TREATMENT
POD 2 IRRITABLE URINE OUTPUT DECREASED	13/15	BP:120/80 PR:78BPM SPO2:98%@RA RS:24 BPM	Hb:9.7 Ser calcium:7.9 Ser electrolytes:WNL	INJ ENOXAPARIN 0.6ML BD Inj mannitol 100ml tid Inj citicoline 4ml Inj cerebrolysin 10 ml Inj methylprednisolone 1 gm iv bd
POD 3 IRRITABLE HICCUPS PRESENT	14/15	BP:130/80 PR:80BPM SPO2 :98% RR:20BPM	Urea:57 Creatinine:1.1 Ser electrolytes :WNL	TAB LIOFEN 10 MG OD CST
POD4 IRRITABLE ACTIVE TOE MOVEMENTS PRESENT	14/15	BP:140/80 PR:83 SPO2:98@RA RR:18Bpm	Hb:9.6,Urea:48 Creatinine:0.8 Ser electrolytes:WNL	INJ ENOXAPARIN STOPPED INJ SOLUMEDROL OD
POD 5 COMFORTABLE URINE OUTPUT NORMAL	15/15	BP:120/80 PR:75BPM SPO2 :98@RA RR:16BPM		CST Nepafenac eye drops

MRI Brain



- MRI report:punctate hyperintense foci on T2 images showing restricted diffusion in the periventricular and deep white matter of bilateral fronto parietal regions
- Findings suggestive of cerebral fat embolism.

Post OP X-ray



Diagnostic criteria: Gurds criteria most commonly used.

Other indexes are: Schonfeld index, Lindeque index

Management: Supportive management

Adequate ventilation and oxygenation, Adequate hydration, Antibiotics, Nutrition, Corticosteroids, Heparin

Prognosis

Prognosis of FES is generally favourable

- Good supportive care during patient recovery can decrease mortality rate to less than 10%
- Dermatological, neurological and respiratory manifestations generally resolve without consequences.
- In patients with high index of suspicion of FES a combination of clinical criteria and MRI brain will enable early diagnosis and accurate diagnosis of FES

References

[1] Mellor A, Soni N. Fat embolism. Anaesthesia 2001; 56:145.
[2] Akhtar S. Fat embolism. Anesthesiol Clin 2009; 27:533.