Fat Embolism Syndrome After Polytrauma

A 49 year old Male patient, suffered a road traffic accident on 20th April. He was transferred to Jaslok Hospital & Research Centre on 22nd April 2004. He was conscious but had bilateral fractures of the shaft of the femur; pelvic fracture at five sites, dislocated right hip joint and undisplaced fracture of left radius. From the history and clinical examination there was no evidence of head, chest or abdominal injuries.

On 23rd April patient became stuporous without lateralising signs. He developed progressive hypoxia requiring mechanical ventilatory support. X-ray chest showed faint fluffy opacity in right hilum and CT brain was essentially normal ruling out any primary injury to brain parenchyma. At this stage inspection of the bulbar, palpebral conjunctiva [Fig. 1] and axilla revealed petechial hemorrhage. Hemoglobin dropped down marginally from 10.2 to 9.6 g/dl and platelet counts reduced from 1.2 Lac to 58,000/cum. Fundus examination was normal and urine for fat globules was negative. All other biochemical investigations were normal. Based on the conjunctival patechial hemorrhages a clinical diagnosis of fat embolism syndrome was made.

Fat embolism occurs in upto 95% of patient with multiple long bone or pelvic fractures but clinically manifests as a syndrome only in 5 to 8 % patients. In this clinical setting, petechial hemorrhages in conjunctiva and axilla, clinch the diagnosis of fat embolism syndrome, but are seen in only 50-60% patients. Progressive hypoxia and altered consciousness are prominent clinical manifestations. Mild thrombocytopenia and anemia is also known. The treatment is essentially supportive and role of steroid is controversial.

This emphasizes the need for a deliberate search for the petechial hemorrhages on conjunctiva in patient with polytrauma, particularly when fundus examination and urine are negative for fat globules. This leads to the clinical diagnosis of fat embolism syndrome. This syndrome resolves by itself and has excellent prognosis [90% survival] with timely availability of appropriate supportive care.

AM Clerk*, JD Sunavala**, SM Katrak***, SS Kothari****
*Intensivist; **Consultant Intensivist and HOD; ***Consultant Neurologist; ****Consultant Orthopedic Surgeon, Department of Critical Care Medicine, Jaslok Hospital and Research Centre, Mumbai.
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Fig. 1 : Conjunctival petechial hemorrhage.