Characteristic imaging findings in pulmonary fat embolism syndrome (FES)

Sidney Ching Liang Ong, Viknesh Balasingam

DESCRIPTION

A 21-year-old male presented to the hospital following a road accident. He was riding a motorcycle when he flung into a roadside drain. On arrival, his Glasgow Coma Scale was 15/15 and vital signs were stable. On examination, there was tenderness and deformity of the left thigh. The diagnosis of closed comminuted fractures of the left femur was confirmed following plain radiography. Chest radiograph was normal. (B) Chest radiograph on day 3 of admission showed bilateral diffuse air space opacities. (A) Chest radiograph on admission was normal. (B) Chest radiograph on day 3 of admission showed bilateral diffuse air space opacities.

Fat embolism syndrome (FES) should be suspected if there are acute pulmonary, cerebral or cutaneous symptoms 12–72 hours following traumatic skeletal injuries.

Two widely accepted pathophysiologies of FES are mechanical obstruction and biochemical reaction.

Findings on chest radiography are indistinguishable from acute respiratory distress syndrome due to other causes. Appropriate history and absence of cardiogenic pulmonary oedema will aid in the diagnosis.

CT scan would show multiple areas of consolidation, ground-glass opacities and small nodules.

Learning points

- Fat embolism syndrome (FES) should be suspected if there are acute pulmonary, cerebral or cutaneous symptoms 12–72 hours following traumatic skeletal injuries.
- Two widely accepted pathophysiologies of FES are mechanical obstruction and biochemical reaction.
- Findings on chest radiography are indistinguishable from acute respiratory distress syndrome due to other causes. Appropriate history and absence of cardiogenic pulmonary oedema will aid in the diagnosis.
- CT scan would show multiple areas of consolidation, ground-glass opacities and small nodules.

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Correspondence to
Dr Sidney Ching Liang Ong, sidney_ong@yahoo.co.uk

Radiology Department, Clinical Campus, International Medical University, Seremban, Negeri Sembilan, Malaysia

Department of Diagnostic Imaging, Hospital Tuanku Ja’afar, Seremban, Negeri Sembilan, Malaysia

References

Consist of patchy or diffuse opacities in both lungs.\(^2\)\(^3\) Interstitial and nodular opacities may also be observed.\(^2\) History of long bone fractures along with absence of cardiogenic pulmonary oedema will aid in the diagnosis.\(^3\)

CT scan shows multiple areas of consolidation, ground-glass opacities and small (2–10 mm) nodules. These are predominantly seen in the upper lobes, whereas gravity-dependent opacities are predominantly seen in the lower lobes.\(^2\) The nodules may represent inflamed intrapulmonary lymph nodes. Intravascular filling defects are less often described.

Treatment is largely supportive. This involves fluid resuscitation, oxygenation or mechanical ventilation. Symptoms are often transient with good prognosis (mortality < 1.2%). Complete recovery is expected with adequate supportive care.\(^1\)

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**REFERENCES**