

## **Concomitant fat embolism syndrome and pulmonary embolism in a patient with patent foramen ovale**

### **ABSTRACT**

We present a rare case of a patient with concurrent fat embolism and pulmonary embolism, in a closed femur fracture with patent foramen ovale (PFO). A 24-year-old man was involved in a motor vehicle accident with a closed left midshaft femur fracture. He developed fat embolism syndrome (FES) on day 3 of admission, and plating was performed. The D-dimer concentration was also high, which raised the suspicion of pulmonary artery embolism. Computed tomography pulmonary angiography (CTPA) revealed right inferior lobar pulmonary artery embolism and FES. A transthoracic echocardiogram (TEE) was performed, which showed a PFO. The presence of a PFO in patients with pulmonary embolism increases the risk of systemic embolism. Therefore, we recommend the routine echocardiogram for patients with pulmonary embolism to exclude any cardiac defect in causing right-to-left shunts, which predisposes the patient to paradoxical embolism.

**Keyword:** Fat embolism syndrome; Patent foramen ovale; Ground glass; Concomitant; Pulmonary embolism; Filling defect