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**IMAGING IN INTENSIVE CARE MEDICINE**

# Cerebral fat embolism after intraosseous infusion

Faten May[1,2*], Jérôme Hodel[3,4], Armand Mekontso Dessap[1,2,5] and Keyvan Razazi[1,2,5]



Intensive Care MedIntensive Care MedIntensive Care MedA 75-year-old male with hypertension, type 2 diabetes mellitus and a past medical history of transient ischemic attack was admitted to an out-of-hospital military emergency center in a low-income country for fever and abdominal pain. Antibiotics, analgesic drugs and fluid resuscitation were infused by intraosseous access in the left proximal tibia. The patient developed vasoplegic shock and acute respiratory failure requiring vasopressor therapy and mechanical ventilation. He was briefly hospitalized in a local intensive care unit before the transfer to our unit in France, 2 days after. Several prostatic abscesses were diagnosed and septic shock resolved after source control by transrectal drainage. The patient had a delayed awakening and confusion despite discontinuation of sedation. No petechial rash was found and echocardiography results were normal. The computed tomography scan showed discrete frontal microbleeds. Magnetic resonance imaging showed multiple bilateral low-intensity infracentimetric lesions on susceptibility-weighted imaging (SWI), distributed in supra- and subtentorial cerebellar white matter and suggesting cerebral fat embolism (Fig. 1a). Importantly, only a few of these lesions could be seen on the fluid-attenuated inversion recovery (FLAIR) sequence (Fig. 1b). The neurological impairment recovered slowly. Five months later, only a slight attention deficit persisted, but SWI abnormalities remained on control MRI. Cerebral fat embolism is a classical complication of intraosseous access, and the recent SWI is a key sequence in MRI for its diagnosis.

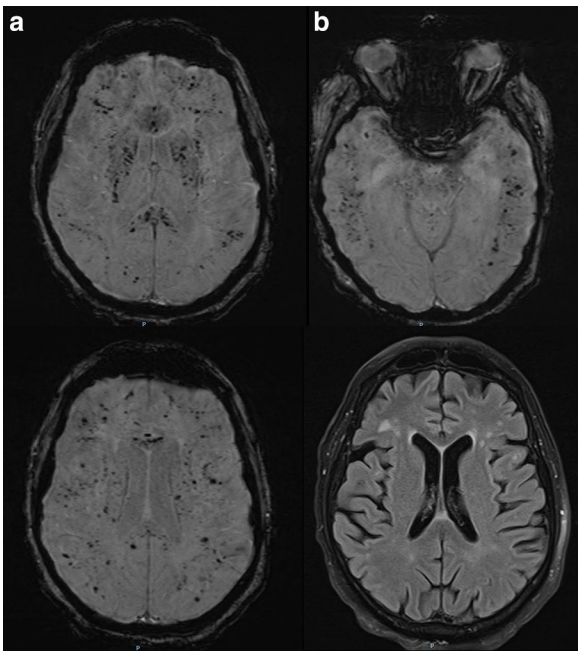


**Fig. 1** **a** SWI sequence of MRI showing multiple focal lesions in the periventricular, centrum semiovale, deep, and subcortical white matter. **b** Flair sequence MRI showing a few high-intensity lesions localized in periventricular white matter of bilateral frontal regions

*Correspondence: mayfaten68@gmail.com
[1] DHU A-TVB, Service de Réanimation Médicale, AP-HP, Hôpitaux Universitaires Henri Mondor, 94010 Créteil, France
Full author information is available at the end of the article

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**Author details**
[1] DHU A-TVB, Service de Réanimation Médicale, AP-HP, Hôpitaux Universitaires Henri Mondor, 94010 Créteil, France. [2] Faculté de Médecine de Créteil, IMRB, GRC CARMAS, Université Paris Est Créteil, 94010 Créteil, France. [3] Département de Neuroradiologie, AP-HP, Hôpitaux Universitaires Henri Mondor, Créteil, France. [4] Faculté de Médecine, Université Paris Est, Créteil, France. [5] INSERM, Unité U955 (Institut Mondor de Recherche Biomédicale), Créteil, France.

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