

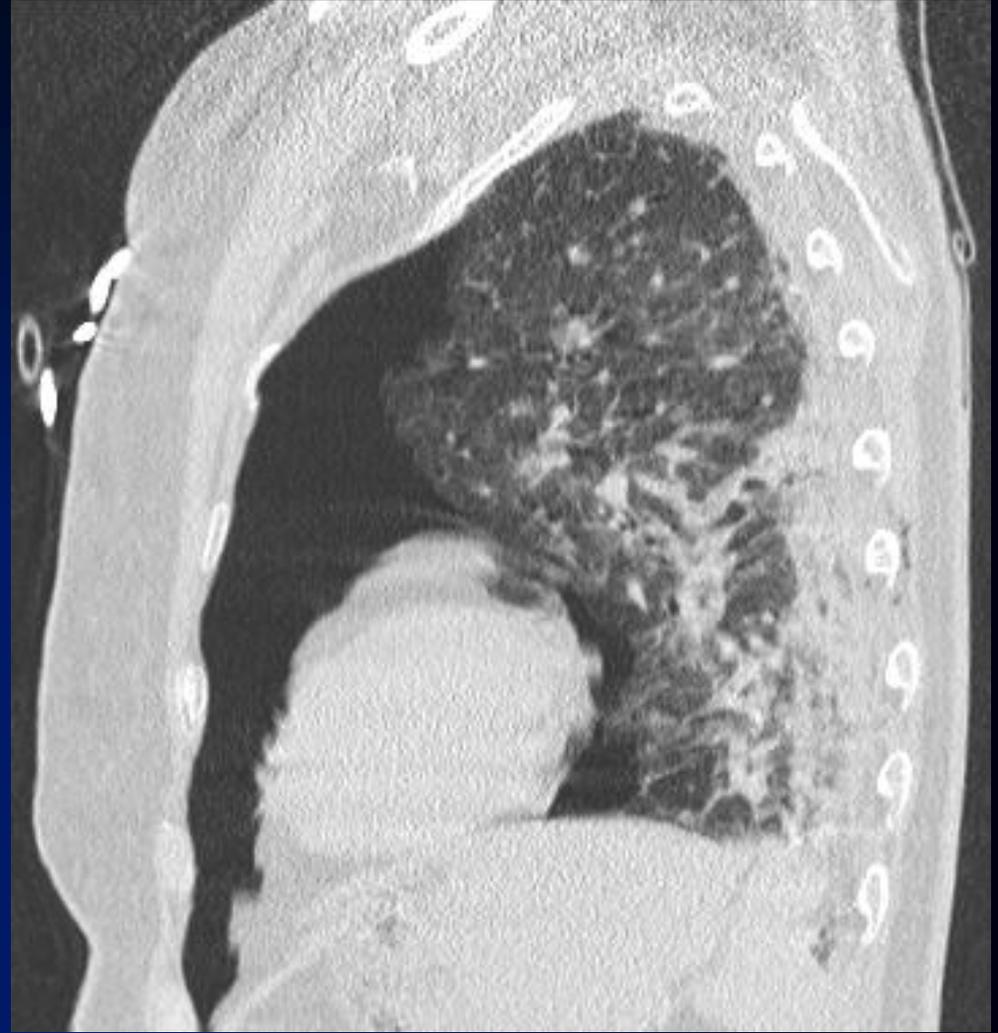
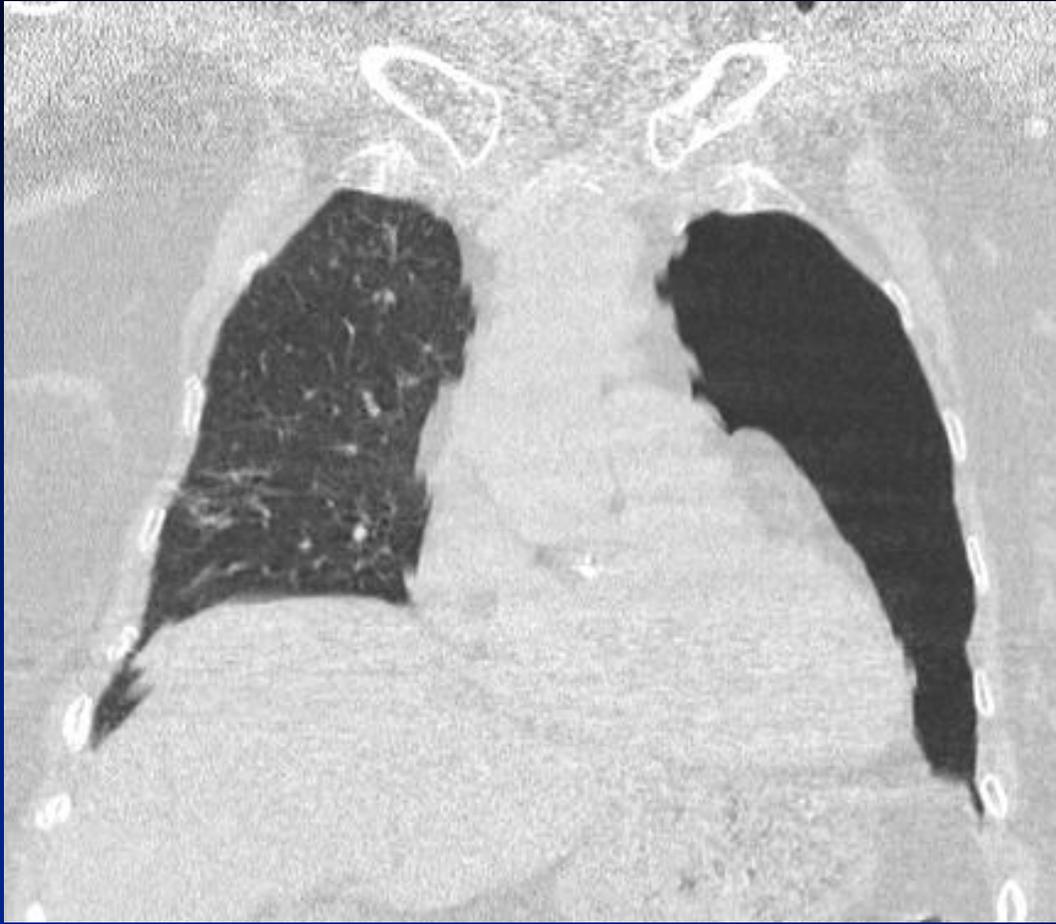
**M EL HAJJAM
P LACOMBE**

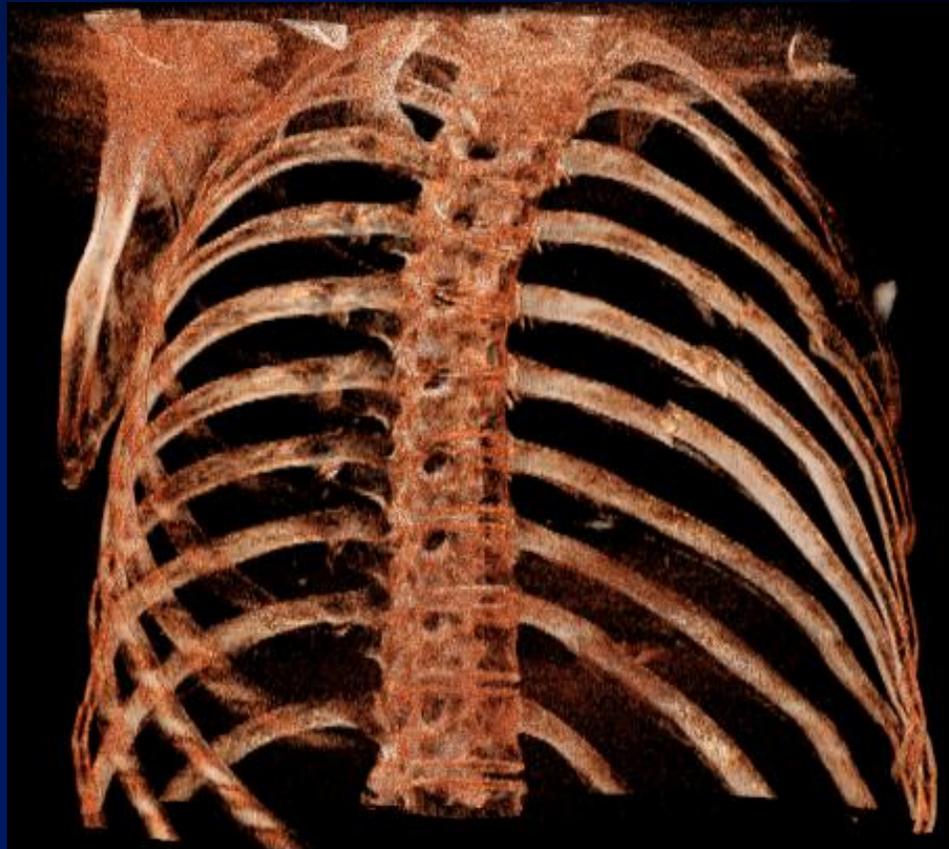
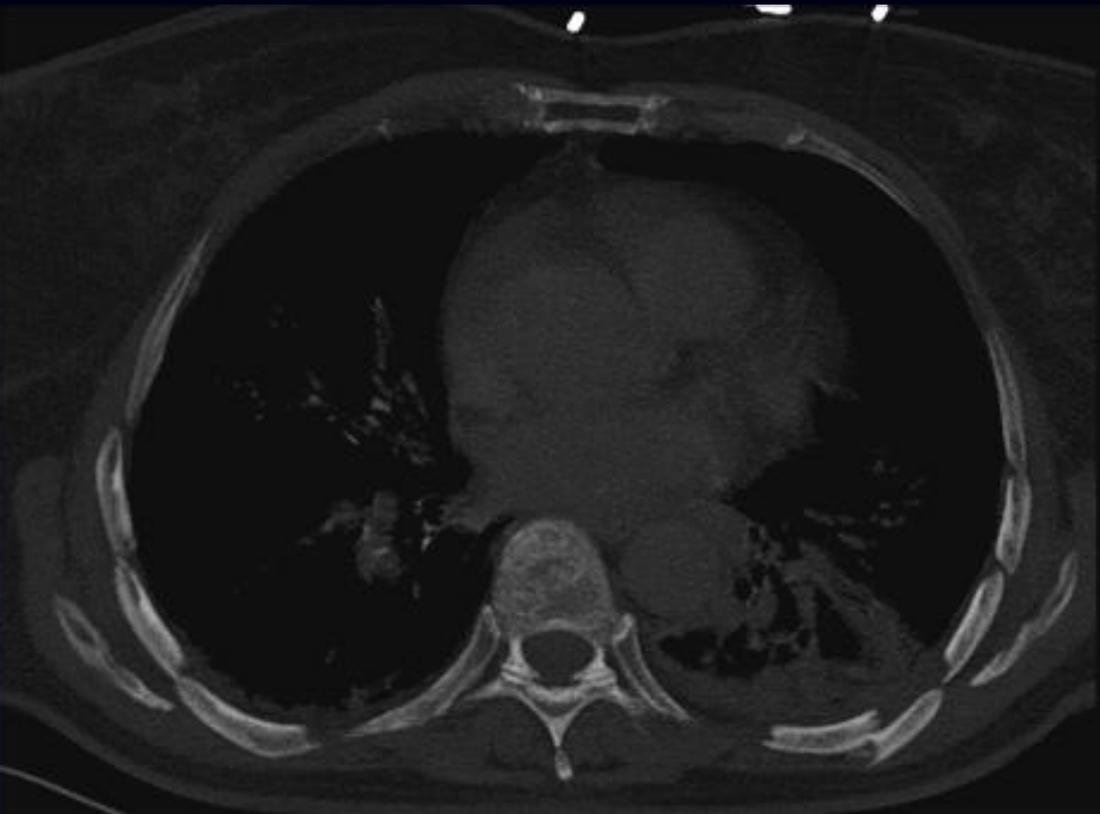
- **Patiente de 67 ans**
- **Accident de voiture**
- **Traumatisme thoracique**

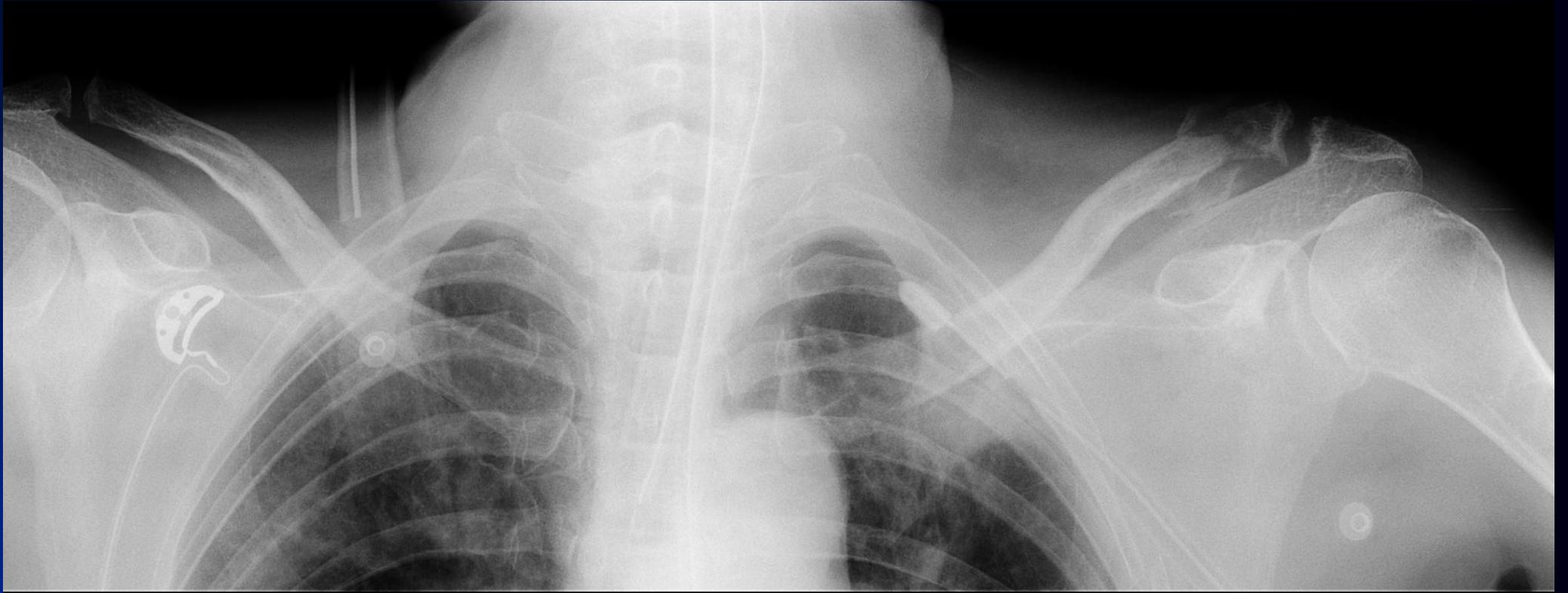


Body scanner



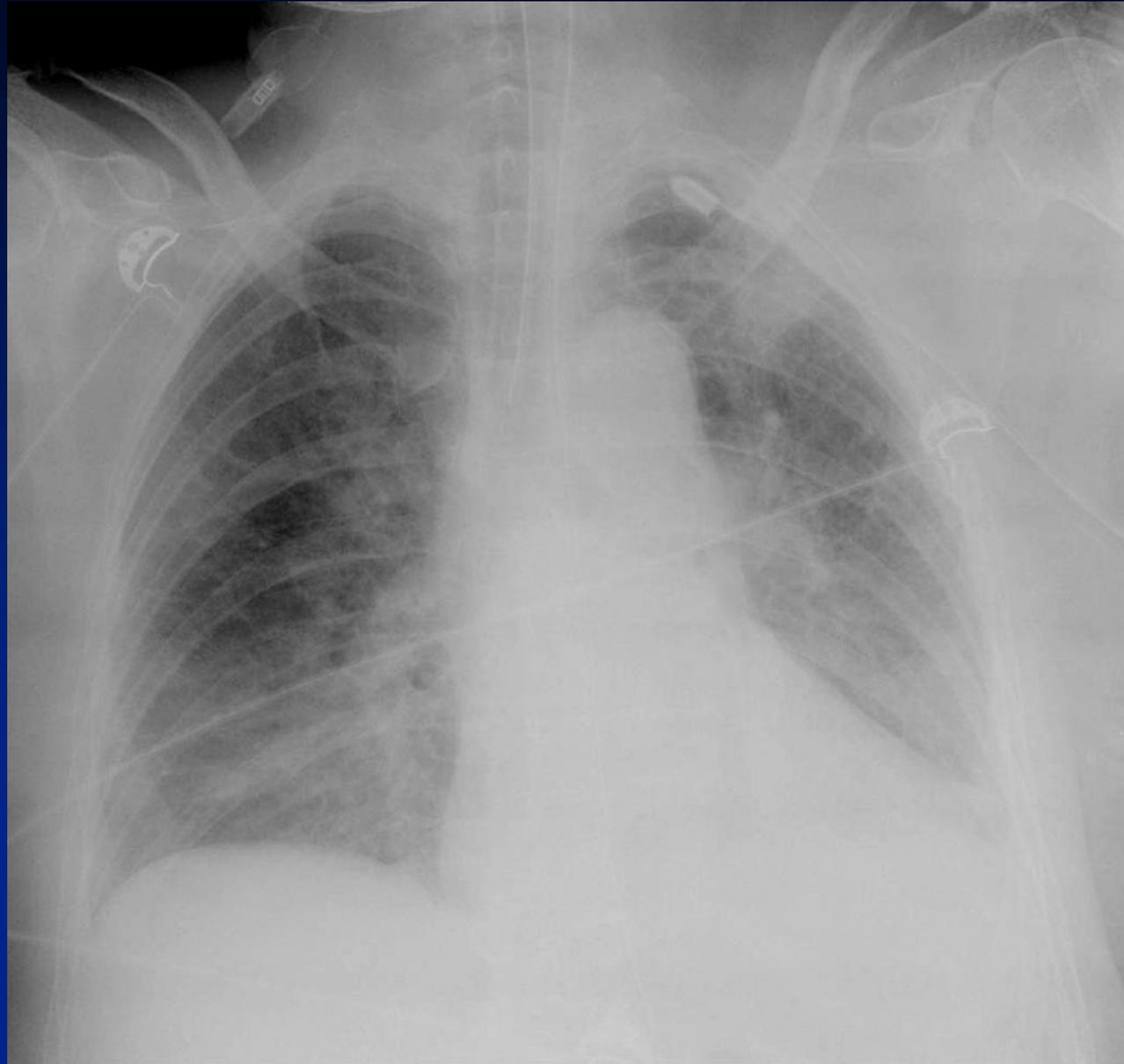






- **Fracture de la clavicule gauche**
- **Hémo-pneumothorax gauche drainé**

Contrôle après drainage thoracique

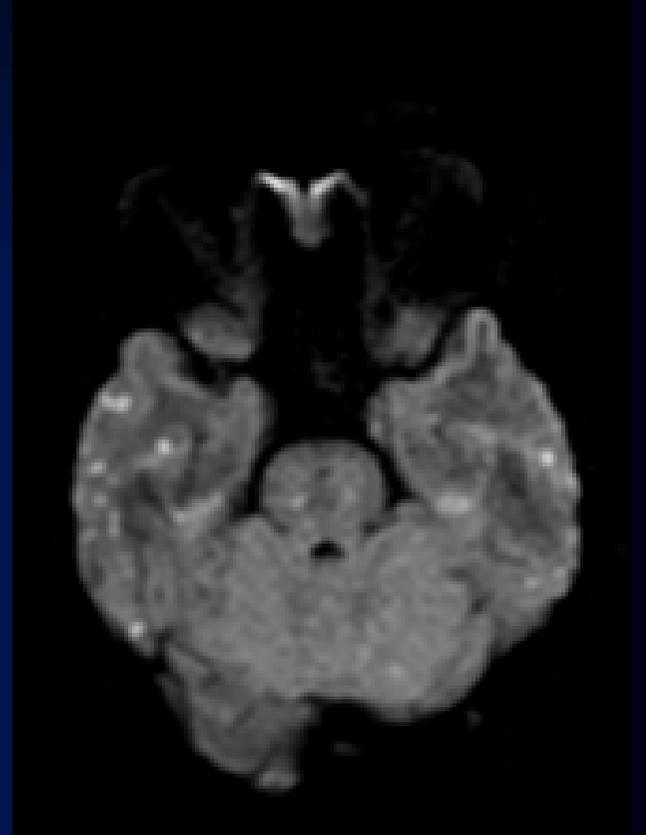
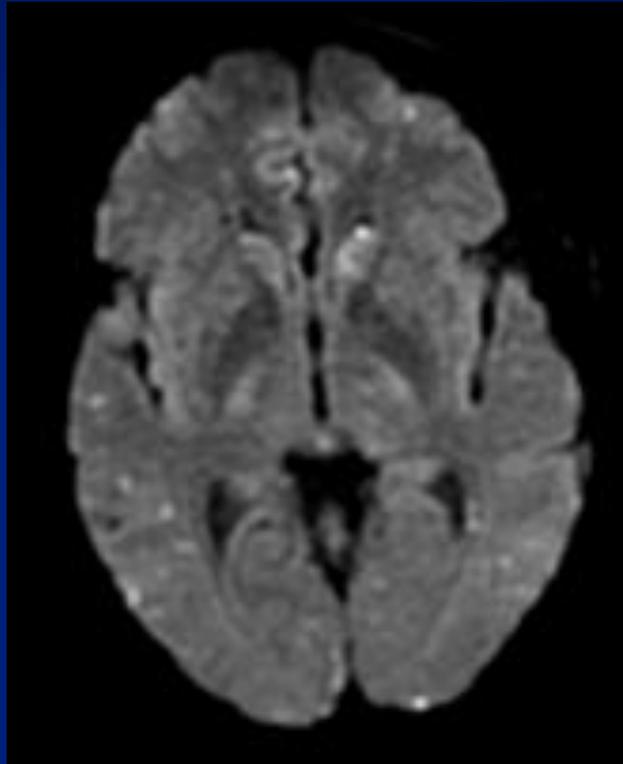
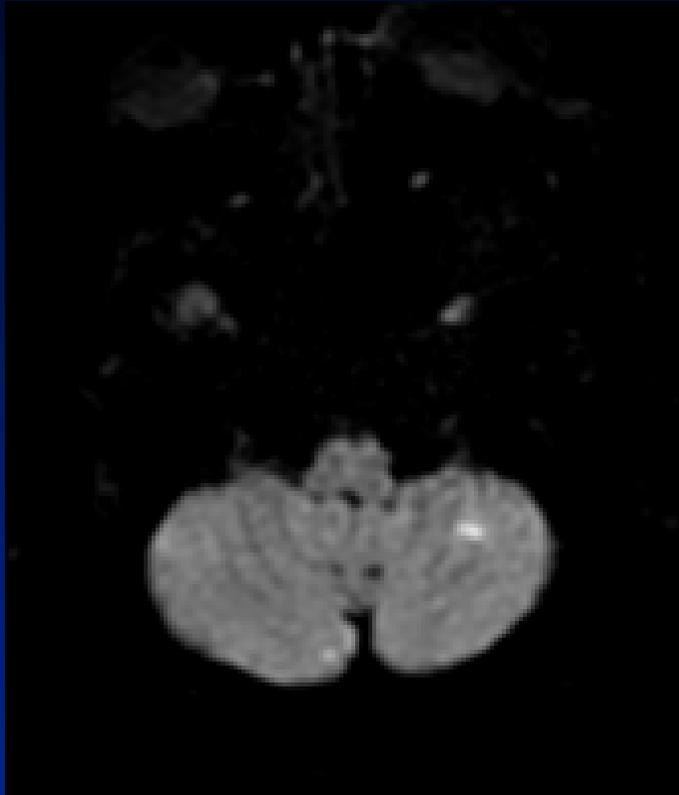


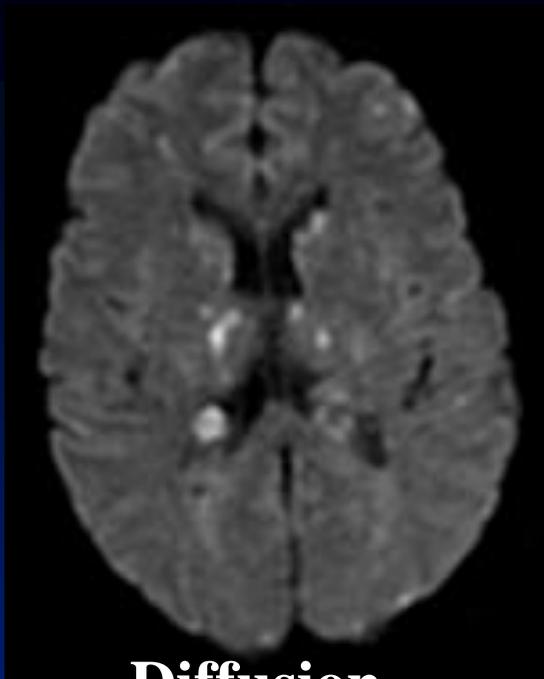
Evolution

- **Dégradation neurologique 6 heures plus tard**
- **Hypoxémie**
- **Coma GCS 3/15**

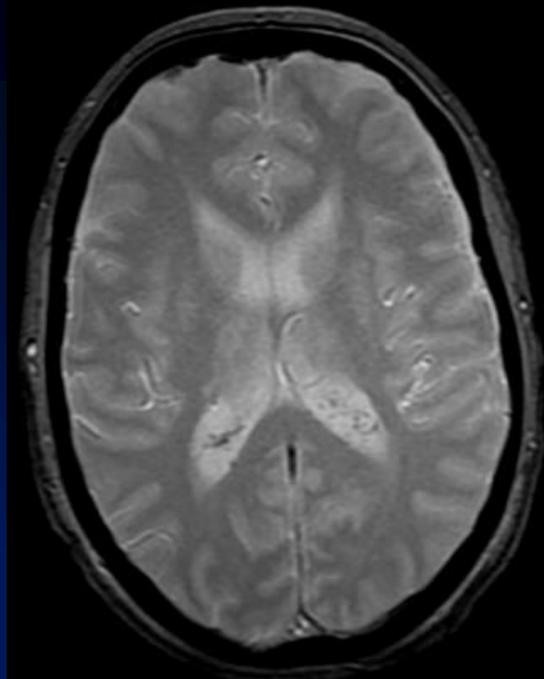
- **Fièvre : 38°4**
- **Chute du taux de plaquettes**
- **De 220 000 à 62 000/L**
- **Fond d'oeil normal**
- **ETO : Pas de PFO**

- **IRM cérébrale Diffusion**

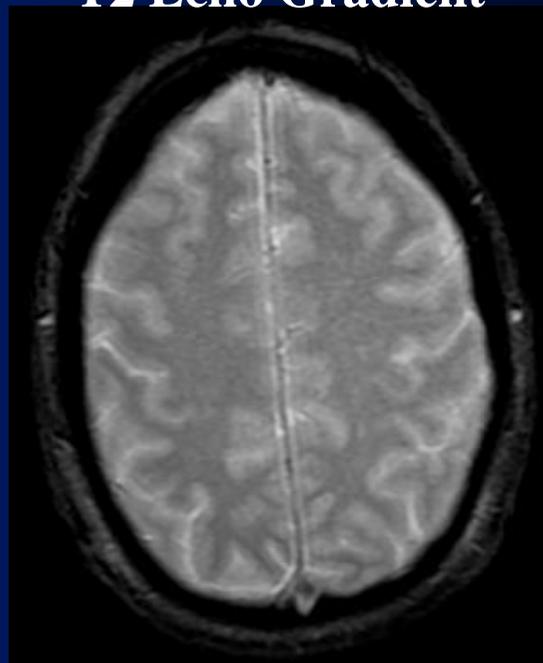
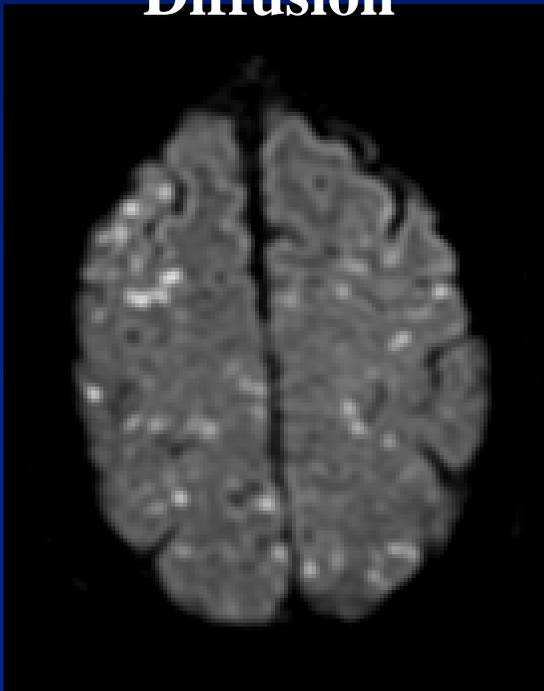




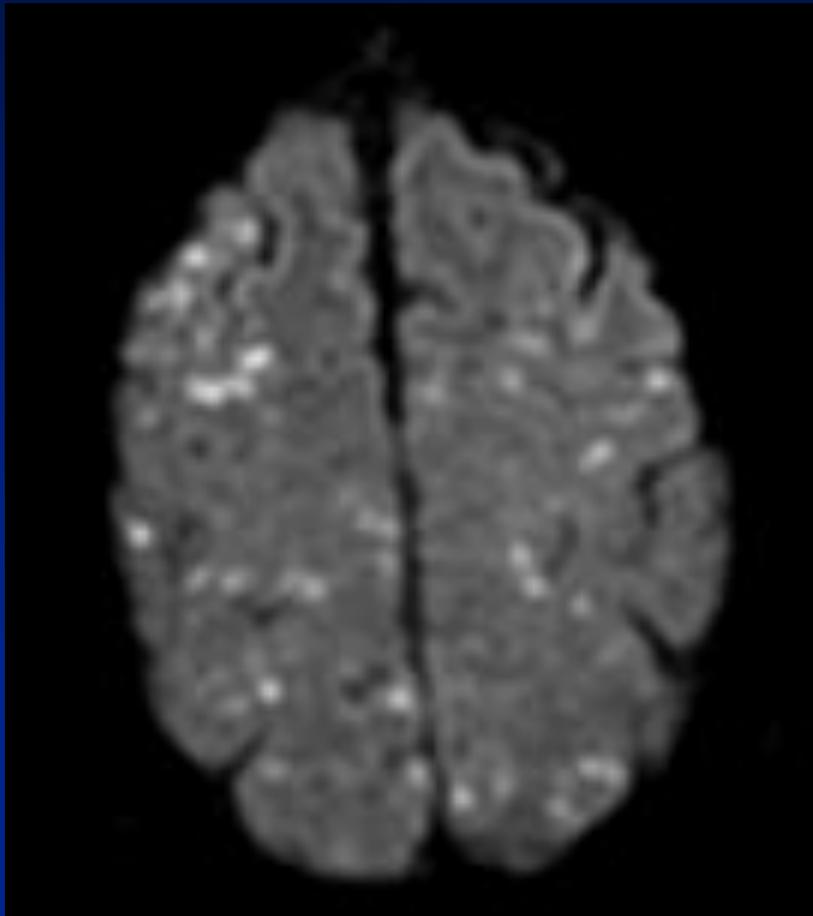
Diffusion



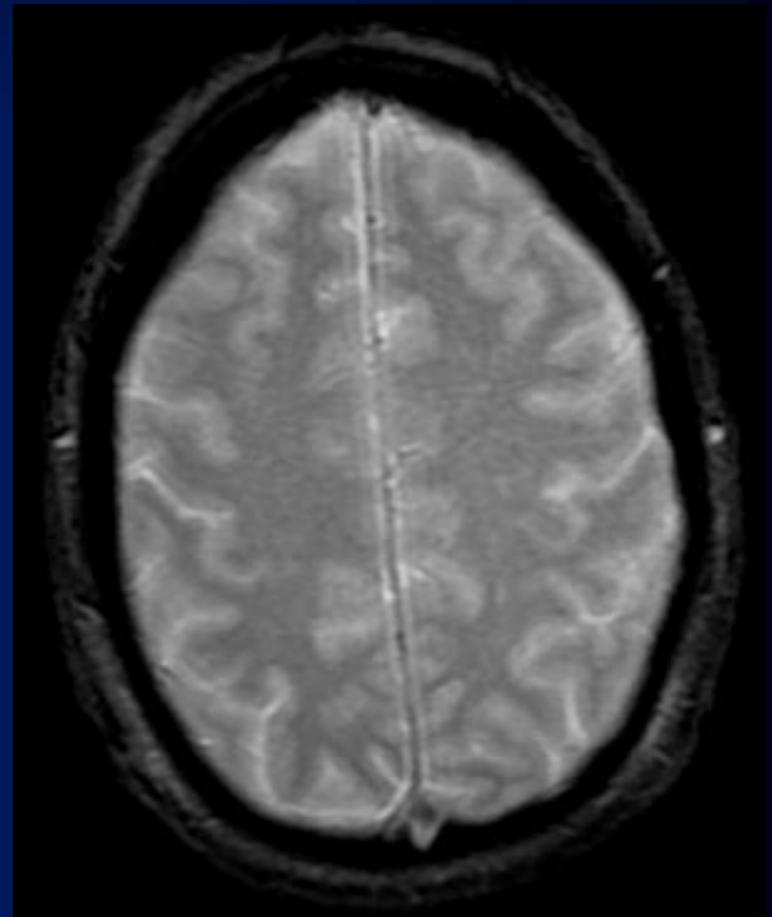
T2 Echo Gradient



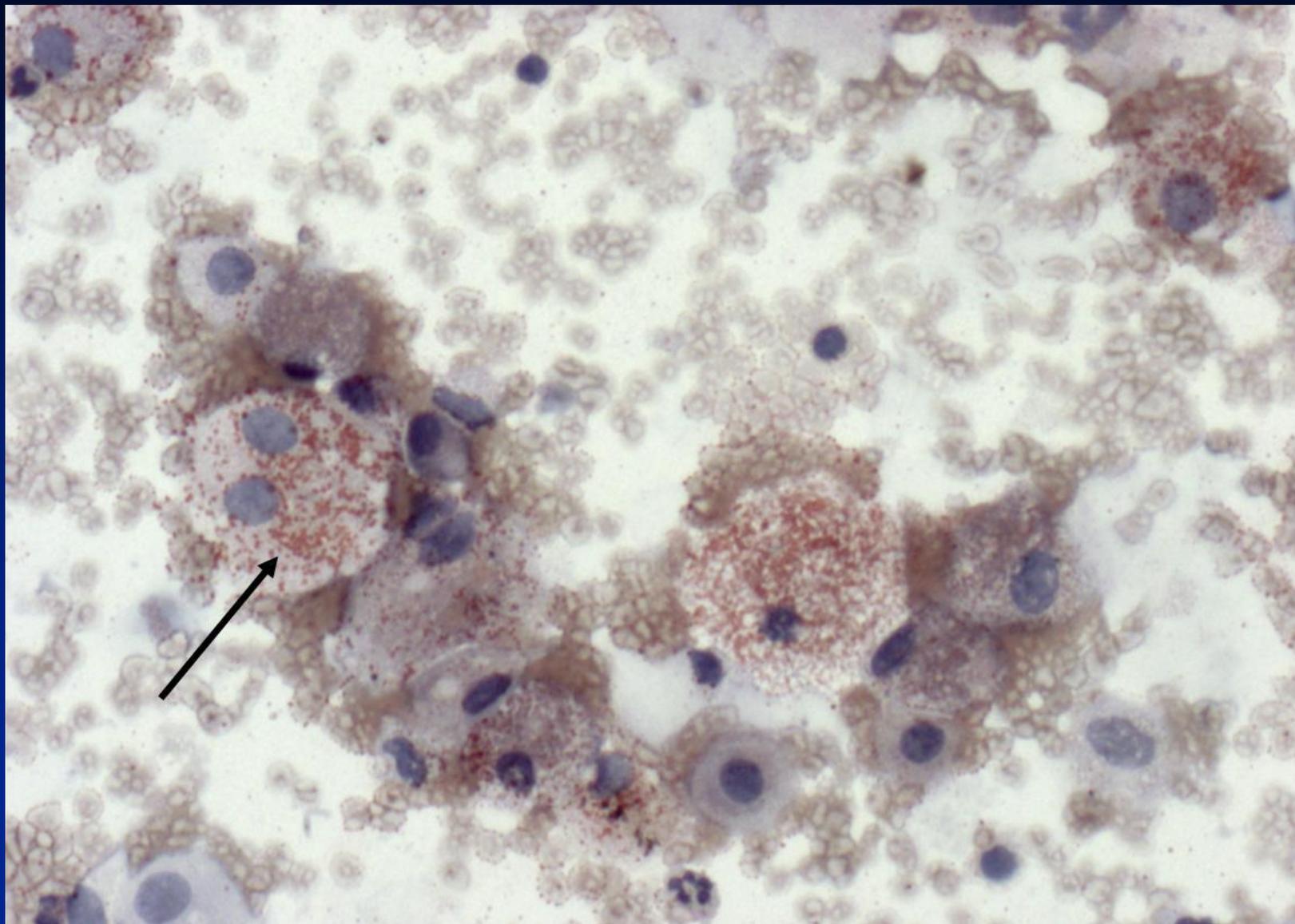
Séquence Diffusion
Multiples spots emboliques



T2 Echo Gradient
Absence de lésion axonale hémorragique



LBA : Macrophages spumeux



Diagnostic ?

Diagnostic

**Embolie cérébrale graisseuse
post-fractures costales gauches**

Discussion

Cause très rare d'embolie cérébrale graisseuse

Souvent secondaire aux fractures des os longs

Critères diagnostiques:

- Pétéchies
- Thrombocytémie
- Signes neurologiques
- Signes respiratoires (Infiltrat – hypoxémie)
- Critères LBA

The association of neurological signs confirmed by imaging, respiratory symptoms with alveolo-interstitial infiltrate and hypoxemia, thrombocytopenia and a high level of lipid-laden macrophages in BALF (7), led us to diagnose a FES. The only missing symptom was petechiae which lack in more than 40% of FES (1-3). FES is a rare complication of bone fractures and soft tissue injury, generally associated with long bone fractures (1-4) and sometime also caused by multiple fractures (2,3). In our case, FSE was related to isolated rib and clavicle fractures, a much unexpected complication (2). The absence of PFO described here, and confirmed in most published studies (8) raises the key issue of the pathophysiology of FES.

Explanations already described remain controversial and include:

- * **an infloating theory** with a high pressure of fat tissue phenomenon which lead to lipid embolism in systemic circulation via a transient PFO,
- * **a lipase theory** according to which lipid stores could be saponified before embolizing,
- * **a free fatty acid theory** for which those toxic molecules could create vasculitis,
- * **a coagulation theory** with a procoagulant state generated by the contact of bone marrow fat with platelets
- * and finally **a systemic embolization theory** by which the association of the deformability of the fat emboli with the rise in pulmonary arterial blood pressure may force the fat globules through the pulmonary capillary bed (3).
- * **In the present case, systemic embolization of bone marrow drops straight in the injured pulmonary veins seems to be a credible mechanism.**

Conclusion

FES without long bones fracture is an authentic clinical entity which has to be evoked in patients with polytrauma and soft tissue injury or multiple fractures.

This case report lays stress on an unexpected complication of rib fractures. It also re-emphasizes the value of complementary exams, such as MRI, BALF and ocular fundus examination, in typical presentation or in sudden neurological or respiratory distress without clear explanation.

Physicians have to be attentive to such complication even in the absence of a PFO.

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