Reviewer’s report

Title: Post-traumatic fulminant paradoxical fat embolism syndrome in conjunction with asymptomatic atrial septal defect. A case report and review of the literature.

Version: 1 Date: 9 September 2010

Reviewer: Sunil V Furtado

Which of the following best describes what type of case report this is?: An unexpected event in the course of observing or treating a patient

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

The authors report an interesting case of paradoxical cerebral fat embolism syndrome (CFS) across an atrial septal defect (ASD) in a patient operated by intramedullary nailing for fracture femur. The presentation and discussion point towards embolism across the ASD which may be hard to ignore even though emboli can reach the systemic circulation through pulmonary pre-capillary shunts and the pulmonary capillary bed. In a situation where a patient is intubated for surgery, changes in right atrial pressures can shunt air/fat across an ASD or for that matter even an innocuous patent foramen ovale (PFO). This has been substantiated by studies in neurosurgical patients as elucidated in this article: Patent foramen ovale and neurosurgery in sitting position: a systematic review. Fathi AR, Eshtehardi P, Meier B. Br J Anaesth. 2009 May; 102(5):588-96.
The recommendation that that intramedullary nailing should not be performed in patients with right to left cardiac shunts lacks credibility in the absence of broad statistical data.

It would be worthwhile quoting the paper: J Orthop Trauma. 2002 Apr;16(4):239-44.

Fat embolism and related effects during reamed and unreamed intramedullary nailing in a pig model. Buttaro M, Mocetti E, Alfie V, Paniego G, Piñeiro L., which studies the effect of embolism in reamed and undreamed IM nailing procedures.

Since there are previous reports of CFS occurring in patients operated for fractures in other locations (Pelle, Barre) the phrase that this is the first report of CFS in a patient operated for fracture femur is irrelevant and needs to be changed.

An image of the ASD or flow across the ASD on ECHO would add value to the article.

Figure 3 has been labeled as a CT image whereas it is a T2 weighted MR image.

**Quality of written English:** Needs some language corrections before being published

**Declaration of competing interests:**

I declare that I have no competing interests