Letter regarding article titled 'Microembolism during foam sclerotherapy of varicose veins' in the *New England Journal of Medicine*

In the 3 April 2008 issue of the *New England Journal of Medicine (NEJM)* the correspondence by Ceulen *et al.*[1] titled 'Microembolism during foam sclerotherapy of varicose veins' was published. This article delivered a significant impact within the medical community, as currently it is the most blogged paper published this year in this journal. Unfortunately, the main messages and findings reported in Ceulen's paper are somewhat against the existing evidence. Still, the Editors of the *NEJM* refused to publish a commentary to this article, arguing that this journal has very limited space available for correspondence.

The presence of gas bubbles in the left heart following foam sclerotherapy (FS) in patients with patent foramen ovale (PFO) described by Ceulen[1] confirms previous observations,[2,3] yet their clinical significance and correlation with neurological complications (e.g. visual disturbances, paresthesias, migraine) remain elusive.[3] Actually, the incidence of transient events following FS is very low (0.16–0.27%)[3,4] and major complications (excluding one case of stroke in a patient with significant co-morbidities where the volume of foam was excessive)[5] have not been reported.[3] Strategies to minimize these infrequent and predominantly benign adverse events include: using low foam volume, using CO_2-based sclerosing foams, elevating patient's leg, and avoiding a Valsalva manoeuvre or rapid mobilization of a patient after treatment.[2] Moreover, it is unclear if these events resulted from gas entering the cerebral microvessels or direct action of sclerosant.[3] Currently, routine screening for PFO before FS is not recommended, but symptomatic PFO is regarded as a contraindication for FS.[3]

Thus, we became aware of some uneasiness prompted by this article about the safety of FS as it is currently practiced. We felt this was because of the misinterpretation of the published clinical evidence and guidelines. The Second European Consensus Meeting on Foam Sclerotherapy 2006, in Tegernsee, Germany produced a consensus statement that refers to 'small echogenic structures (bubbles)', but avoids using the term 'emboli'. There is no evidence that bubbles seen in the echocardiographic images, portrayed in Ceulen's letter, have an active sclerosant coating. In addition, none of the 33 patients described reported neurologic symptoms, which questions the importance of the echocardiographic images as a surrogate marker.

J-J Guex, P Raymond-Martimbeau, M Simka and F Passariello
Department of Angiology
ul. Wodzislawska 78 Pszczyna
43-200 Poland
Email: mariansimka@poczta.onet.pl

DOI: 10.1258/phleb.2008.008031

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This letter is sent on behalf of the Vasculab Internet Forum, which is a group of international specialists with an interest in venous and lymphatic diseases, most of whom are recognized as experts in this field.

Vasculab members who participated in the preparation of this letter (in alphabetical order): C Allegra (Italy), JJ Bergan (USA), FX Breu (Germany), C Hamel Desnos (France), E Altmann Canestri (Argentina), ANN Castro (Brazil), A Cavezzi (Italy), M Cazaubon (France), D Creton (France), JHG Ferreira (Brazil), C Garcia-Madrid (Spain), J-L Gillet (France), JP Gobin (France), MP Goldman (USA), J-J Guex (France), L Moro (Italy), N Morrison (USA), DL Neuhardt (USA), K Parsi (Australia), H Partsch (Austria), F Passariello (Italy), P Raymond-Martimbeau (USA), A Scuderi (Brazil), M Simka (Poland), S Szarka (Canada), P Thibault (Australia), JC Wollmann (Germany), S Zimmet (USA).