

LETTERS TO THE EDITOR

TRANSCRANIAL DOPPELER MONITORING

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Dear Editor,

In the December edition of SPUMS Journal Mark Sullivan referred to transcranial Doppler (TCD) and wondered if it could be used to establish the true incidence of patent foramen ovale (PFO). In fact the technique is known to be the most sensitive and specific non-invasive test for detecting shunting particularly when combined with provocative manoeuvres such as coughing and Valsalva's. The gold standard is transoesophageal echocardiography but obviously this is not suitable for screening healthy subjects. The incidence of PFO by TCD is higher than by transthoracic echocardiography.

We recently used TCD to investigate commercial divers and found the technique to be a simple and convenient screening test for healthy individuals. We also monitored the divers' cerebral circulation after surfacing and found that subjects with PFO did not have silent arterial gas emboli during decompression from a variety of dive profiles. This suggests that the importance of shunting may have been exaggerated. Previous studies of venous gas emboli found only limited correlations with the incidence or severity of decompression sickness. Arterial emboli have not yet been investigated to the same extent because they were more difficult to study. It may be that arterial counts are more specific and thus clinically relevant. TCD may also be used inside decompression chambers with only minor technical changes. This is relevant to divers where the monitoring of cerebral gas embolism by TCD has obvious clinical attractions. TCD has enormous potential in hyperbaric medicine.

Stephen Glen
James Douglas

References

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- 2 Glen SK, Georgiadis D, Grosset D, Douglas JDM and Lees KR. Transcranial Doppler ultrasound in commercial air divers: a field study including cases with right-to-left shunting. *Undersea & Hyperbaric Med* 1995; 22 (2): 129-135

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IN-WATER RECOMPRESSION

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30/3/95

Dear Editor

The practice of in-water recompression (IWR) as emergency first aid for decompression illness (DCI) has provoked considerable discussion in the hyperbaric communities around the world for many years. This discussion has become even more vocal in recent years now that technical diving has "emerged from the closet" and is undergoing rapid metamorphosis as new technology becomes available and affordable to recreational divers.

In Australia, the recompression of a diver with gross decompression violations off Sydney in February 1993 sparked considerable debate in Dive Log Australia and other correspondence, which was mostly inaccurate, misinformed and based on third hand information.

Richard Pyle, deep diving ichthyologist at Bishop Museum Hawaii and Dr David Youngblood, who needs no introduction in the hyperbaric community, have recently written a paper titled *In-water Recompression as an Emergency Field Treatment of Decompression Illness*. The paper discusses 13 case histories and states "evidence from available reports of attempted IWR indicates an overwhelming majority of cases in which the condition of DCI victims improved after attempted IWR." The authors state that "we do not necessarily endorse IWR; however we see an increasing need by technical divers to become aware of the information available on this topic".

There is also an increasing need for the hyperbaric community in Australia to come to grips with this problem. The theoretical risks associated with returning a diver suffering from DCI into the water need to be balanced with practical field experience.

Perhaps Richard Pyle or David Youngblood should be invited to chair a workshop on IWR at the 1996 SPUMS Scientific Meeting on Technical Diving. In the meantime, any SPUMS member who would like a copy of the paper can contact me at the above address.

Robert Cason