Dropping the weight belt at depth results in an immediate positive buoyancy to the diver, which may enable him to ascend to the surface. Divers must be taught that at the hint of the slightest emergency, the weight belt should be unlatched and held at arm's length. In this way, should the crisis pass, the weight belt may be put on again. If the diver passes out, the weight belt will then fall out of his hands and the unconscious diver has a chance of being rescued. In addition, he is more likely to float to the surface unaided where his chances of rescue are far greater than if he should remain submerged.

Untrained divers should not be allowed to dive, unless doing a proper instructional course. Inexperienced divers must not attempt to exceed their own limits, until more dives have been logged. No one with a scuba certificate must agree to rent scuba equipment for his untrained friend. Diving should be treated as a dangerous sport. There are many instances where a diver finds himself in potential difficulties. A novice diver will be hopelessly lost with the amount of gear, hoses, gauges and buckles that make up the equipment used in scuba. All it takes is a simple mistake, a lack of understanding or inexperience to cause a loss of life. A person making a mistake or suffering an asthmatic attack or an epileptic fit on land does not drown. A similar misfortune occurring whilst diving inevitably leads to drowning and death.

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BLEOMYCIN
A RARE ABSOLUTE CONTRAINDICATION TO DIVING

John Knight

In the August 20-27th issue of the British Medical Journal there was a leading article on the rising incidence of decompression sickness in the UK[1]. A follow-up letter[2] drew attention to an absolute contraindication to diving that most people are not aware of.

Bleomycin is an anti-cancer agent which has among its effects the sensitisation of the lung to raised oxygen partial pressures. Bleomycin causes lung damage, which governs how much of the drug can be used in treatment. Mostly the damage resolves with the passage of time. But sensitisation to raised partial pressures of oxygen is long

lasting. Deaths from pulmonary fibrosis have occurred after anaesthesia, where increased partial pressures of oxygen are normally used. Anaesthetists know that patients who have had Bleomycin should never be exposed to more than 0.3 ATA of oxygen, and preferably less.

Why should diving doctors worry about Bleomycin? Bleomycin is often used for the treatment of testicular teratomas. These tumours occur in the age group who dive and after successful treatment the diver may wish to return to diving. If he does he will be at risk of developing pulmonary fibrosis if he breathes an oxygen partial pressure of more than 0.3 ATA. Using compressed air, 0.3 ATA partial pressure of oxygen is reached at a depth of just over 4 m!

Obviously anyone who dives should give up diving after treatment with Bleomycin. It is an indictment of our compartmentalised thinking that I, an anaesthetist who has known for years of the danger of giving higher than normal partial pressures of oxygen to people who have had Bleomycin, never moved this information sideways into my diving medicine memory banks. I am grateful to Drs Hamilton, Williams and Wilmshurst for pointing out the relationship to diving.

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ANONYMOUS REPORTING OF DIVING INCIDENTS: A PILOT STUDY

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Abstract

Current recreational diving safety practices in Australia and New Zealand leave much room for improvement. Incidents with the potential to reduce safety in diving are constantly occurring, and the vast majority result in no harm to anyone. Based upon techniques in current and successful use in civil aviation and anaesthesia practice, we suggest that the recreational diving industry should adopt an on-going, bi-national, Diving Incident Monitoring Study (DIMS), with the aim of improving sport diving safety and training standards. The proposed study could usefully supplement the existing morbidity and mortality data collection that is the present province of "Project Stickybeak". The results of such an incident study, conducted during the 1988 Annual Scientific Meeting of SPUMS, at Mana Island in Fiji, are presented and illustrate the power of this voluntary incident reporting technique for the objective identification of recurring human errors in sport diving practice. Analysis of the 65 reported incidents revealed unsatisfactory diving safety standards among medically qualified divers who might be considered to be safety leaders in the sport! Fifty-five per cent of the potentially harmful incidents occurred during the dive itself, but a quarter occurred during preparation for the diving. An important advantage of the incident analysis technique is its ability to suggest corrective strategies (specific improvements in training, practice, supervision and equipment design), which are directed effectively against the most commonly occurring and recurring hazards and errors among sport divers in Australia and New Zealand.

Introduction

Unsatisfactory safety standards in the practice and supervision of recreational scuba diving in Australia, and other countries, are shown by the steadily increasing clinical work load of Hyperbaric Medical Units[1], by regular medical publications[2,3], and also by a plethora of popular press reports, albeit some of the latter are sensationalised and ill-informed. Any considered effort to improve this state of affairs warrants attention and trial. A method is presented of incident reporting and analysis the efficacy of which for safety improvement has been established in civil aviation[4] worldwide, and which is directly applicable to sport scuba diving. The same technique is also currently being applied, with exciting early promise in human medicine, to improving the safety of anaesthesia[3,4].

Such constantly recurring errors during the supervision and practice of anaesthesia lie at the heart of most (at least 80%5,6) of the accidents that happen. The same is probably true of recreational diving and the analysis of such errors enables the recognition of the more common patterns, e.g. inadequate buoyancy control, and the development of *effective* corrective strategies, e.g. improvements in the design of buoyancy control devices (BCD) and weight belts, and in the training for, and practice with their use during diving.

The reporting and analysis of scuba diving "incidents" is quite simply a method of analysis of human error! Divers, just like the rest of the human race, err constantly and naturally, despite their repeated attempts (again just like the rest of the human race) to deny the fact! As a British aviation psychologist has so eloquently put it[7] ".. all human beings, without any exception whatever, make errors and ..... such errors are a completely normal and necessary part of human cognitive function."