

ORIGINAL PAPERS

MMM

THE MICKEY MOUSE MEDICAL

Carl Edmonds

Over the last twenty years I have taken some pride in my contributions to the education of divers and diving physicians. The founding of the South Pacific Underwater Medicine Society and the Diving Medical Centres; the introduction of diving medical courses in Australia (both Navy and civilian); presenting scientific meetings; lectures to diving groups and instructors; writing a number of diving texts, some of which have been "best sellers" by Australian standards. Indeed, I felt an inner glow. There was no reason to be modest about these achievements.

Two unrelated happenings have forced me to reassess this situation. The first is the number of phone calls I receive from clinicians asking whether a certain candidate whom they are examining, is medically fit to dive. The second was a survey performed in our most famous diving State of Australia, Queensland. Queensland encompasses the Great Barrier Reef.

The enquiries from doctors, usually referring to only one aspect of the diving medical, often becomes irrelevant to any genuine assessment of diving fitness, once one carefully questions the examiner. This usually reveals a grossly inadequate knowledge of the medical examination requirements.

For example, the enquirer may wish to know whether beta blockers interfere with diving. What usually eventuates from the questioning is that the candidate, who could be old, deaf, obese, and suffer a variety of respiratory tract disorders, is likely to be passed fit without qualification or advice and in the absence of a base line audiogram or spirometry.

Thus, instead of making a comment about the more abstruse implications of beta blockers with diving, I am usually faced with informing the enquirer as diplomatically as possible, that he is unfit to perform a diving medical examination.

These calls come in at about five or so a week. It is very rarely that I am phoned up by the same physician more than once.

The survey unfortunately supported my observations. Queensland has better undergraduate diving medical training than any other Australian state. Most of its physicians will be involved in diving if they work there. In New South Wales, where I work, diving medicine has only been included in the undergraduate curriculum for the last two years, and then for only one hour in six years of training. No examination of competence is set on this subject.

The survey was performed by a young diving physician, Mark Marshall. It was carried out under the patronage of my old colleague and diving buddy, Dr Bob Thomas. It was performed as a project for the Social and Preventative Medicine Department of the University of Queensland, and a number of diving medical clinicians did give advice to ensure that the questionnaire was appropriate and relevant. The aim throughout was to "keep it simple", so that there could be no misunderstanding of either the questionnaire or its results.

One thousand doctors were obtained from the telephone directories in Queensland. Only those doctors who responded and were involved in the assessment, advice or treatment of divers were assessed.

Of the 364 respondents who were involved in medical administering to divers, 62.4% indicated they had received no training in diving medicine, and 52.5% no training in marine animal injuries. Training in this context included anything from a lecture at medical school to reading a book or an article.

The official Australian diving medical examination format (or an equivalent), including both history and examination was used by only 10.7% of the doctors. 69.2% used a form from the instructor, and 17.4% did not complete any form at all.

The specialised diving medical centres, who have examined many thousands of amateur diving candidates, have a failure rate of 10% with another 10-15% needing restrictions to their diving. Of the doctors in the survey, 41% always passed divers as fit and 35% failed less than 10%.

The extraordinary finding from this survey is that, based on the doctor's own claims, 87% did not perform an audiogram, 61% did not request chest x-rays and 56% did not do spirometry, 42% did not test the urine, 37% did not check middle ear auto-inflation, 13% did not do any respiratory examination, 8% did not do a cardiovascular examination, and 4% did not examine the ears, nose or throat.

As would have been expected the doctors who were also divers seemed to perform better, as did the younger doctors, with most of their examinations and advice, eg. in ear clearing techniques. They also had more training.

A great deal of information was also supplied regarding the advice given to the divers, about medical problems. 6.3% advised the use of ear plugs, 40.7% advised the use of decongestants, 25% advised pregnant women to continue diving, 16.5% advised women to stop diving during their menstruation.

Of the 26.9% who allowed asthmatics to dive, 85% specified a limitation in the diving depth! Similar figures were obtained for other causes of chronic airways disease. Only 7.7% felt that diving was permissible with epilepsy, but over 50% allowed people with a resting diastolic blood pressure in excess of 100 mm Hg to continue diving. About the same number do not regard beta blockers as any impairment to diving,

Correct treatment? No sophistication here. They were asked to match each of eight common diving accidents with its major treatment, eg.

decompression sickness - recompression;
air embolism - recompression;
venomous marine animal - medical or surgical;
pneumothorax - surgical or 100% oxygen.

It may not come as a great surprise to find that the likelihood of being given the correct treatment modality (to say nothing of the finer details), hovered around the 50% mark. One shudders to think of what forms of "surgical treatment" were being contemplated for

decompression sickness, air embolism, nitrogen narcosis or contaminated air poisoning!

The only part of the survey which gave me some glimmer of hope was the finding that 78.3% considered that more training in diving medicine was needed.

For years I have been making excuses for my MM colleagues, when talking to diving instructors. I stress that they are very busy people, that diving medicine is a negligible part of their training and that it is unfair to expect more expertise.

Well, no longer. By condoning MM medicals, I am not doing a service to my conscientious medical colleagues, to my fellow diving instructors, or to the innocents who undertake diver training with a trust in the professionalism of their advisers.

I am an aviation medical examiner and the skill I need in that capacity is infinitesimal compared to a diving medical examination. Yet, for aviation medicals I have to be a qualified aviation medical examiner. That means I must have some form of training, or at least have demonstrated a knowledge in that field.

Why should an untrained and unqualified physician (untrained and unqualified in this speciality) be permitted to do diving medicals when he has no concept of the physics or physiology of the diving environment or of the demands of this environment, or the equipment the candidate must use to sustain life? Why do they presume such knowledge? I would not be so presumptuous to advise on a gynaecological condition, or do a dermal biopsy, even if I did need the money.

In Australia there is adequate training available. We have a four week course at the Navy base especially designed to introduce physicians to diving medicine. Yet many physicians will reject this training, but perform the medical examinations. There must be a reason. The obvious ones are as follows:-

1. Financial reward.
2. The examiner does not recognise his limitations.
3. Lack of knowledge.

The phone calls that I receive suggests a combination of all three, and the results of the survey lend support to this proposition.

The commercial factor could certainly be significant in Australia. Our Department of Health, although it does not admit to this, allows general medical practitioners to claim a rebate for the medicals performed on divers. It does not permit this practice among specialists in this field, thereby encouraging a minimal and inadequate standard of medical examination.

I think there is a conspiracy between the MM medico and the MM dive instructor (and me until very recently) to pretend that the diving candidate is being well served. I feel that the dive instructors are often more hypocritical than the physicians. At least in many cases, the physicians really do not have the knowledge to start with. Most diving instructors are trained and knowledgeable, and are aware of the problems and complications associated with many of the medical diseases.

Some of the instructor organisations have produced their own MM medical forms which allow any doctor to

pretend a knowledge, simply by ticking a few boxes. Perusal of these forms usually reveals that they would be barely adequate even for snorkellers, let alone scuba divers.

In my opinion a good and conscientious instructor will not only advise the candidate to have a comprehensive diving medical, but he will insist upon it. The easier option is to let any doctor tick the form and thereby exonerate him legally for training unfit divers.

The chances of a candidate being failed on a MM medical or having any diving restrictions imposed, is minimal. Thus, more profit and less hassle to the instructor.

I am certainly not blameless. I have known of this practice for many years. Perhaps I was not prepared to look at it squarely until I read the results of the Queensland survey. Nevertheless, the information was there, with almost every phone call from a prospective diving medical examiner.

I do not know what is going to happen in other countries, but in Australia it is about time we put our house in order.

I do not think this article will endear me to many of my colleagues, either dive instructors or doctors. Nevertheless, it had to be said, and perhaps even a few of the young kids coming through may benefit from the mud that flies afterwards.

Dr C Edmonds' address is 25 Battle Boulevard, Seaforth NSW 2092, Australia.

Readers can find the names and addresses of those members of SPUMS who have done at least the introductory course at the RAN School of Underwater Medicine, or an equivalent course elsewhere, on pages 33 and 34 of this issue.

IMMERSION HYPOXIA

PULMONARY AND CEREBRAL CHANGES IN THE SUBMERGED VICTIM

John Pearn

Royal Children's Hospital, Brisbane QLD 4029

Underwater accidents can happen at any time, but with the appropriate training and skills possessed by the experienced diver, fatalities should be rare. Management of the near-drowned demands a mix of two themes, the adherence to a rescue and resuscitation drill, and an appreciation that no two incidents will be the same. In the latter instance, the variables of water temperature, degree of hypothermia, hypoxic time, age, and background health status all differ in a particular patient in a particular accident.

Management of the near-drowned is optimal if the medical attendant is familiar with the pathophysiology of drowning,¹ and with the possible events in the lungs and brain of the near-drowned² during cardiopulmonary resuscitation (CPR).

Inhaled Water

In "wet" drownings (perhaps 90 per cent of fatalities) death results from inhalation of water into the alveoli.