

are available for stone fish and sea wasp stings and for some at least of the venoms of the many *Conus* species, no antivenene is available for the bite of a blue ringed octopus. Clearly, the envenomation is likely to occur a long way from a handy store of antivenenes so first aid measures and a recognition of the potential severity of the problem will determine the outcome. It is clear from many reports in the literature that the wearing of protective clothing will afford much protection from jelly fish of all sorts, that the use of acetic acid to remove intact tentacles or portions of tentacles is at least as effective, and much cheaper, than the use of proprietary solutions and that rapid transport of the victim to hospital where appropriate observation can be undertaken is mandatory. For most forms and consequences of envenomation there is plenty of time to initiate appropriate measures away from the marine environment. In the case of rapidly progressing paralysis however, such as follows the bite of a blue ringed octopus, it is clear that the early recognition of symptoms of muscle weakness coupled with the ability to maintain respiration by, if necessary, mouth to mouth resuscitation should prevent the tragic deaths which have occurred. All the evidence points to complete recovery being possible if support of ventilation can be provided for a period of a few hours. (3)

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This paper was presented at the joint meeting of SPUMS and NUMBS (Newcastle Underwater Medicine and Barotrauma Society) at Nelson Bay 30 April 1983 to 1 May 1983.

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SPEAKING PERSONALLY: RECOGNITION AND MANAGEMENT OF APPREHENSION IN RESORT DIVERS

Steve Hills

First some background to these observations. For the last one and a half years I have been employed at a dive shop in Port Vila, Vanuatu as an instructor/guide for visiting tourist divers (mostly Aussies or Kiwis). We dived two or three times every day under ideal tropical conditions of warm (21°-27°C), clear (average 25 metres) water, although depths sometimes necessarily reached a maximum of 37-38 metres on some of the excellent wrecks. Average depths however were commonly shallower than 20 metres. Decompression dives were avoided. The group of divers assembled on the boat on any one day would typically be a mixed bunch ranging from visiting instructors through divers with no formal qualifications but many years of actual experience eg. abalone divers, to recently certified novices and also the very rusty, but qualified diver. On occasions when circumstances permitted there would also be student divers on the dive or holiday makers attempting the openwater segment of their one-day introductory scuba course, following their morning pool and theory session.

This daily "pot-pourri" of scuba divers presenting themselves at the dive store would be screened, to the best of our ability, for the suitability of the proposed diver.

Of necessity, incidents will occur in this type of daily routine where certified divers are completely unknown to us and the diving conditions are normally quite different to what they are used to, and were trained under. To date our safety record has only been blemished once - a Japanese honeymooner jumped out of a tree and fractured his ankle! (So as not to lose face however, he assured everyone as to his good health, donned his fins and then completed his dive!)

However, it is the almost daily occurrence of small incidents that did not turn into accidents that should be of concern. Because the regularity of these incidents is sufficient to fuel daily staff post mortems as to the success, or otherwise of each dive, we now recognise that a problem exists, and one which if not treated correctly, could lead to a fatality.

Many of these 'incidents' concern apprehension or panic. This condition may manifest itself in a variety of conflicting ways, making early detection not always possible. Apprehension always precedes panic and has been observed in one or more of the following behaviour patterns, by afflicted divers:

- inability to absorb information from a dive plan;
- prolonged questioning about proposed dive;

- gearing up incorrectly;
- defiantly rejecting offers of assistance in preparing for dive;
- slow, deliberate, methodical gearing up;
- reluctance to enter water after gearing up;
- a tendency to begin offering excuses for a possible unsuccessful dive (ears, sinuses, stomach upset), well before arrival at the dive site.

These are all pre-dive clues. An apprehensive diver not exhibiting any of the above pre-dive behaviour patterns may be detected underwater by one or more of the following:

- an over-dependence on the descent line and reluctance to be physically detached from it;
- use of the “something’s wrong” hand signal quite soon after leaving the surface. (On checking the problem back at the surface the affected diver will commonly invent a problem relating to his equipment, “This regulator doesn’t seem to be giving me enough air”, etc);
- use of the “something’s wrong” signal but reverting to the “OK” signal on checking closely with diver.

Most incidents of apprehension manifest themselves in one of the above ways, very early in the dive. Occasionally through a diver will pass through the earlier stages of the dive successfully only to degenerate into a situation of apprehension and panic later on. These cases are more serious as they occur during the dive when the victim is away from the back-up facilities and security offered by the dive boat.

Typically these situations begin with the diver entering a “worrying” phase where some problem (or perceived problem) begins to totally occupy the diver’s mind up to the point where almost all external stimuli are excluded. This “worrying” phase develops towards panic as a sense of urgency surrounds the problem in the diver’s mind. It is about this time that rational thought and behaviour patterns begin to break down, as commonly the diver is overwhelmed by a need to get himself out of his predicament at all costs, sometimes involving removal of his mask and regulator or a rapid ascent out of the foreign environment to the surface, or both.

Again, it is typical for the breathless diver back on the surface to try to rationalise his behaviour thus, “I just couldn’t seem to get enough air!” All sorts of equipment malfunctions are cited, but rarely verified back in the workshop.

It is quite unusual for the diver to honestly identify his problem, as peer pressure on a boat full of other successful male and female divers prevents him from doing this. I have only ever encountered one diver who admitted to panic during a dive. Surprisingly,

this diver, towards the end of his ten dive package, panicked and then sat down and openly discussed the problem with others on the boat. He had experienced some vertigo on leaving the bottom, panicked, then taken out his regulator and done a free ascent.

To all of us wizened readers, this diver’s response to his panic was deplorable and goes against all training. In a foreign environment we depend on our life support system. Why would a diver willingly deprive himself of this support?

Well, having experienced a situation of extreme apprehension verging on panic underwater myself, I can claim to understand that situation, but not explain it. In my own case, I am sure it was only the familiar surroundings of a well-known wreck that prevented my incident from turning into panic at 30 metres, with possible dire consequences. Having just recovered from a chest cold I was back at work guiding three other divers around a wreck, at 30 metres. Fourteen minutes into the dive I started thinking about slowing the ascent at the end of the dive, as a concession to the depth of the dive and my recent chest cold. Pre-occupation with these thoughts developed into anxiety, as for some inexplicable reason a sense of urgency surrounded this need to ascend. I became overly introspective as the sound of my own rapid heartbeat thundered through my ears and I could hear voices screaming through my head to “get out of here”! Training told me to slow down, control my breathing rate, hang on to something solid and get control of myself. In attempting to do something along these lines I must have looked peculiar swimming along tightly holding on to the closest solid object my own mask! I distinctly remember feeling an understanding for those panic-stricken divers who try to rip off their masks and regulators. I guess in a threatening situation any constrictions around the head area are seen as contributing to that threat and need to be discarded.

Fortunately, with many previous dives in that wreck, I knew the exact direction and distance to the mooring chain. Using every possible reserve of self-control I managed a controlled swim to the chain where I had something tangible and secure to assist in my regulated ascent. Without this familiarity with my underwater surroundings, I am not so sure this anxious situation would not have deteriorated into uncontrolled panic.

This was an isolated experience which occurred after many hundreds of hours underwater experience at a familiar depth and on a familiar wreck. I am not claustrophobic and normally experience some narcosis at greater depths than on that dive. I feel sure the incident was initiated by a concern over the consequences of diving deep after a chest cold. But I am glad to have experienced it! It helps me empathise more with other divers displaying pre-dive anxiety symptoms and I find that a discussion of their feelings along with an assurance of close proximity during their dive helps alleviate much of the pre-dive worry

that could develop into panic.

Having detected an early warning sign (as listed earlier) the key to reducing the effects of anxiety so as to lessen the risk of underwater panic, lies in the quality of the staff. Our attempts to defuse possible panic situation normally include:

Most importantly, a very obvious display of safety back-up equipment and a pre-dive briefing. Rather than highlighting the potential dangers of the dive, if done correctly this should provide the comforting realisation that the diver is in the capable hands of a safety conscious operator.

Provision of a compatible diving buddy from the staff guides/instructors

Unhurried approach - entering the water last allows the nervous diver (and guide) to proceed at his own pace and not under the scrutiny of other divers.

If anxiety is heading towards a critical level underwater, no single action is more calming and reassuring than that of human contact. Unless the victim is already gripped by panic, comfort will be given by a firm hold on his arm and strong eye contact, both of which impart the feeling that the sufferer is not alone down there. This simple action followed by an exchange of "OK" signals has steadied many an uncertain situation underwater. If however, the victim is beyond the "point of no return" it would be unwise to make oneself available to the wild clutches of a diver who has lost all self-control. Fortunately these predicaments are rare as anxious moments are usually defused before this stage. Two incidents only, spring to mind. In the first the instructor made the rapid ascent alongside the panicking diver and only ventured close enough at about 3 metres to 'punch' the victim in the stomach region to successfully force an exhalation of air from the lungs. He was then on the surface with the diver to provide continuing support. The second incident involved a panicking diver's refusal to return a regulator during a buddy-breathing ascent. A second instructor was alert enough to cover the required distance and provide buddy-breathing support to the first instructor. Subsequent to this incident (some years ago now) all staff now dive with octopus regulators.

To conclude with some of the more pathetic anecdotes in this collection, there was the elderly gentleman on his first open water dive after qualifying, whose body shook uncontrollably with fright so that he was unable to adjust his manual inflate BC and had to be helped from the water (he was reportedly learning scuba diving and hang gliding while he was still alive!). Then there was the ridiculous sight of an instructor surfacing while securely caught in the vice-like scissors-grip of the panicking student's legs around her torso. And finally, the vision is still clear of the mascara-eyed woman who adopted the foetal position

while clinging nervously to the shot line for 20 minutes at 2 metres under the boat, persevering because it is currently fashionable to be able to claim that one is a scuba diver.

SPUMS ANNUAL SCIENTIFIC MEETING 1984

Next year's ASM will be held in three parts.

April 7th to 14th
at Phuket Island Resort, Thailand.

April 14th to 17th
at Bangkok, including a combined Conference with the Royal Thai Navy.

April 18th
At Hong Kong, where there will be a meeting with local and SPUMS speakers.

The guest speaker will be Surgeon Captain RR Pearson, who is the Royal Navy's senior diving medical officer. He will be speaking at all three meetings. His topics will be:

- Oxygen, the diver's friend or foe?
- The problems of caring for sick or injured divers in compression chambers.
- Medical screening of professional and recreation divers.
- Dysbaric osteonecrosis, is it a major problem for divers?
- Saturation diving, a review of military experience and associated research.
- The management of divers with audiovestibular problems.
- Presentation and diagnosis of decompression illnesses.
- Arterial gas embolism in diving and in clinical practice.
- The deep trial unit and the Admiralty Marine Technical Establishment (Physiological Laboratory) (AMTE PL).
- The Institute of Naval Medicine and controlled atmosphere research.

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