

Case Report of an Untreated Type 1 Bend

John Knight

One Saturday two divers dived at Picininy Ponds. They went to about 110 feet and then looked about, going up and down a bit before starting for the surface. They did not go any deeper as the light was poor below where they were. They did the proper decompression stop by going into a cave at about the right depth for a while. Their dive lasted about 20 minutes. Four hours later they were at the Little Blue Lake and did a dive to 100 feet. Because it was a repetitive dive they added the two times together to obtain the correct decompression. The decompression stop was carried out using a depth gauge instead of a shot rope. They were in the water about 20 minutes. 15 minutes after leaving the water one of the divers developed a pain in his right elbow. At first he thought that it could not be a bend as his buddy was quite unaffected. However when the pain had lasted three days he decided that it must be a bend and sought medical advice. Within 24 hours of talking on the telephone to a doctor his pain went and he did not keep his appointment. The history was obtained over the telephone.

He claimed to have done the proper decompression, but he was only sure of one time, the time to onset of his pain. Assuming that he was using the RAN tables published in CZ18, which he was not, his dive to 110 feet which required a decompression stop, must have been for a bottom time of more than 17 minutes. Adding this to a 4 minute dive to 100 feet on his second dive he should have had two stops on the way back to the surface. His second dive would count as 21 minutes at 110 feet, which if taken to the next higher time is 25 minutes and the stops for that are 5 minutes at 20 feet and 5 minutes at 10 feet. He was in fact using the tables printed on his Fenzy buoyancy vest. The tables are metric and the instructions are in French, which he could not read, but he "could understand them alright".

As the dive was being limited by poor light he did not have the best of conditions for reading his unfamiliar tables. Kiessling and Maag showed in 1962 that there is approximately a 25% loss of performance in reasoning at 100 feet in a chamber. Davis, Baddeley and Hancock have shown that there is a marked performance decrement in mental arithmetic and other tasks with cold. The water in the Mount Gambier area is cold.

On the second dive the two divers were aware of the need for care and were trying to treat their dive as a "repetitive dive" according to the RAN tables. They were aware that the rule is to add the two times together and use the greater depth to obtain the decompression profile. However cold forced them to cut short their second dive and all the factors mentioned above were working even more against them on the second occasion. But one must not forget that bends do happen to people who have followed the tables precisely. This diver was probably not in that class, on his own admission he did not know the depth of the stops nor the length of the dive or of the stops.

He was advised to plan his dives before leaving the surface when there is plenty of light and no narcosis or cold to complicate mental arithmetic. He was advised to dive within the no-decompression limits and that if he was going to do a decompression dive he should work out his bottom time and stops before leaving the surface and write down his available bottom time and the depths and times of the corresponding stops on a piece of plastic with a waterproof pencil in letters large enough to read easily in poor light. Then when diving he would not have to do more than start for the surface at a known time.

Furthermore he should use a shot rope for decompression and have spare air for himself and his buddy on the shot rope in case he used more air than he expected at depth.

He volunteered that he and his buddy had dived a number of times at Mount Gambier and had been letting their diving standards drop and were not as careful on this occasion as they had been in the past.

References

1. Davis FM, Baddeley AD, and Hancock TR. Diver Performances: the effect of cold. *Undersea Biomedical Research*. 1975; 2: 195-214.
2. Kiessling RJ, and Maag CH. Performance impairment as a function of nitrogen narcosis. *Journal of Applied Psychology*. 1962; 46: 91-95.

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Elixir of Youth

A certain hyperbaric "unit" talked freely to the local Press recently. In an unguarded moment someone mentioned that HPO had a rejuvenating effect, bringing people back supposedly from the limbo of senility with sharpened wits. The therapeutic use of the Unit was mentioned, in passing, to also include carbon monoxide poisoning, gas gangrene and non-healing ulcers. A few days later the Director was reported as requesting a cessation of the requests for such treatment of senility as it was not being practiced there. A further few days passed and an even smaller notice appeared, a statement by the reporter that he didn't edit the article. Visitors are now advised not to mention their contacts in the newspaper industry when asking for favours!

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Thor Heyerdahl, the Norwegian scientist and explorer who crossed two oceans in primitive craft, says that insecticides and detergents are debilitating the seas. Heyerdahl was the main speaker at a weekend program in honour of the visit of King Olav V of Norway to Minneapolis, USA. He said future generations could be threatened with a shortage of fish and eventually oxygen when chemicals destroy vital ocean plant life.

Australian, 13 November 1975

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David Niven recently saw the film JAWS. The next morning while swimming in the motel pool he spotted a black form lurking under the water. "I was walking on the water to get out. Then I found it was a maintenance man in a scuba suit fixing the drain", he said.

Australian, 16 March 1976