PATHOLOGICAL INVESTIGATION OF THE FATAL DIVING ACCIDENT

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Fatal accidents are fortunately rare in the Diving Industry and occur at widely dispensed geographical points. This may result in rather inadequate investigation and interpretation of findings due to local lack of knowledge of diving physiology and pathology.

The ultimate aim of the investigation of a fatal accident is to accurately determine how, when, where and by what means the person met his death. This naturally implicates the pathologist as the primary investigator, who undoubtedly will need some guidance in specialist fields, but necessitates team work to interpret the findings. In the context of diving accidents this includes Clinicians, Diving Supervisor, Diving Inspector and witnesses as well as any other experts considered relevant. With this an accurate Clinico-Pathological diagnosis may be made.

It is imperative that where possible, the site of death be accurately determined. This may be on the bottom, during ascent and/or during decompression or on the surface, all of which may have resulted from malfunction of apparatus or personnel.

A major problem is the correct interpretation of findings of gas bubbles which may be artifact or a relevant definitive finding. The gas bubble/blood interface examined histologically may produce useful data for example in determining whether a vital circulation was present when bubbles formed - a vital clue.

Whole body X-ray is mandatory, not only for the determination of bone lesions, but for the general appraisal of gas in body spaces before invasive techniques destroy the evidence.

Having obtained the information it is vital that it be recorded centrally and it can be retrieved for use in comparison with other obscure cases, where less information is available, and difficulty is possible in interpretation. In the United Kingdom this is undertaken by the Medical Research Council Decompression Sickness Panel.

As a result a pattern of accidents may be built up, which in the long term can be used in the realm of Preventive Medicine, so that similar accidents do not recur. The accumulation of data and material is vital as part of a prospective study on the effects of prolonged exposure to a hyperbaric environment.

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