

Gas Embolism And Decompression Sickness : Return To Diving Assessment

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Gas embolism in diving, often associated with breath holding during ascent, involves the rupture of alveoli in the lung, diminishing the blood-air barrier leading to air entering the arterial circulation causing an acute infarct in either the heart or the brain. This type of embolism is uncommon compared to iatrogenic air embolism which is caused by invasive medical or surgical procedures especially in open heart surgeries or neuro surgeries, being conducted on a daily basis in all hospitals worldwide.

In decompression sickness (DCS), divers had exceeded either the depth or the duration of the dive, causing excessive Nitrogen loading in the diver's body. This causes symptoms like aches, tingling, pins and needles in and around large joints like the shoulders, elbows and knee joints and tissues of the upper and lower limbs. Often not fatal in recreational divers but it can potentially causes permanent disability especially when it involves the spines i.e. the bladders, bowels and sexual dysfunctions seen commonly in a particular ethnic group in Sabah the Sea Bajau. Nevertheless, both DCS and air embolism can be treated using the hyperbaric oxygen therapy and the prognosis depends on the severity and time taken to initiate the first treatment.

Following the incidence of Gas embolism or DCS, the patients need to be assessed by a diving physician for fitness to return to dive. In the Royal Malaysian Navy, basic exercise fitness is required apart from complete resolution of symptoms. The basic principle applied should be that the diving activities must not pose any risk to the diver himself nor to his diving colleagues during any underwater duties.

Iatrogenic air embolism is a rare but fatal condition caused by invasive