

“Gas embolic syndrome” in two single stranded beaked whales

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Abstract

Introduction:

Lesions consistent with in vivo bubble formation in beaked whales have been recently described in **Nature** by Jepson and col. and Fernández and col. A decompression-like syndrome has been postulated to happen in whales in response to sonar exposure. Gas embolism “in vivo” is difficult to determine some time after death. This report presents a systemic “gas bubble” embolism in two fresh single stranded beaked whales.

Material and Methods:

One adult female and one old male beaked whale stranded on the coasts of Gran Canaria and Tenerife in 2003 and 2004 respectively. Both animals were necropsied around 4 to 8 hours after death. A routine necropsy for whales was carried out by pathologists from the Unit of Histology and Pathology (Institute of Animal Health-Veterinary School-University of Las Palmas de Gran Canaria). A routine histological study was also performed in all the sampled organs, as well as a microbiological study.

Results and discussion:

Both animals showed massive gas bubbles in the portomesenteric system, involving changes in the liver. Gas bubbles were seen macroscopically and microscopically in the venous system, including intestines, liver, lymph nodes, lung, kidney, heart and brain. Although a test of nitrogen content of the gas is now underway, the pathological picture is very similar to an acute massive systemic gas embolism in DCS in humans. It is not known if these cases were associated with sonar activities.

Conclusion:

The present results found in two very fresh beaked whales restate and reinforce the “systemic gas embolism” in beaked whales, a new pathologic entity to be described in cetaceans, with special attention to deep, long duration diving species like beaked whales, which seem to be more susceptible of suffering this embolic syndrome.

Jepson and cols. **Nature** 425:575-576(2003).

Fernandez and cols. **Nature** doi:101038/nature 02528 (2004).