Preliminary Summary (Pathology)

Two whales belonging to family *Ziphiidae* were necropsied following an international necropsy protocol (Fernández et al., 2005). The necropsy was done in collaboration with a Greek team led by Dr. Frantzis, including two veterinary pathologists (Manuel Arbelo, PhD and Eva Sierra, PhD) and a PhD biologist specialized in cetacean physiology (Yara Bernaldo de Quirós, PhD). All of them from the specialized veterinary pathology group in cetaceans (www.iusa.es) from University of Las Palmas G.C. led by Professor Antonio Fernández, PhD, ECVP diplomat, with more than 20 years of experience on Cetacean Veterinary Pathology, member of IUCN and IWC.

First whale was necropsied still in adequate conditions to detect gross lesions, allowing sampling, transportation and laboratory analyses. The **second whale** presented a worst conservation status due to post-mortem time, but some data and analyses could be done. A complete study of anatomic pathology, histopathology, histochemistry, bacteriology, virology, contaminants, gas analysis from gas embolism, was carried out in our specialized laboratories for cetaceans (ULPGC).

In conclusion, both whales showed a "gas and fat" embolic pathology (Fernández et al., 2005). The first whale was able to show gas analysis compatible with Decompression-like sickness (Bernaldo de Quirós et al. 2011). The second one was analysed but gas analysis showed an advanced putrefactive process, indicating that necropsies should be done very soon after death (Yara Barnaldo de Quirós, 2011). No inflammatory or neoplastic processes were noted, and no pathogens were identified as responsible for the pathological entity described above.

Based on current scientific knowledge, pathological and laboratory findings of this study, the most likely primary cause of this type of beaked whale mass stranding event would be the association with naval exercises, in which anti-submarine active mid-frequency sonar would have been used (*Fernandez et al. 2004, 2005, Cox et al. 2006, Bernaldo de Quirós, Y. et al. 2011*). Naval exercises and acoustic activities geographically and temporally related with theses whales´ strandings should be seriously investigated.

References:

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