

BLAST INJURY AND SEA TURTLES

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Introduction

Sea turtles are under many threats. Underwater blast injuries are one of those risks to sea turtles as for other aquatic animals.

Shock-wave pressures in column from explosions can have adverse impacts on nearby submerged structures and on aquatic life (KEEVIN and HEMPEN, 1997).

Most of the reports on blast injuries in sea turtles are post mortal reports with comparison to lesions in human beings. For the best of our knowledge this is the first report on live turtles that underwent blast injury including computed tomography images.

Case History

During December 2012 and January 2013, eight turtles (seven loggerhead turtles and one green turtle) were found along the sea shore in different locations. On physical examination there were almost no reflexes. Bloody secretions were observed in one turtle during expiration. Blood results showed no anaemia, normal to high glucose but elevated CK. Following initial treatment, they were scanned by a dual slice helical CT (CT-Twin Flash, Elscint, ISRAEL) in the Veterinary Teaching Hospital.

Pulmonary infiltration was observed in all turtles representing pulmonary haemorrhage with different severity. Emphysematotic bullae was observed in one case. Middle ears with different amount of fluids were observed in those turtles. Free celomic fluid was found as well.

Unfortunately two turtles died after a few days. Those individual had the most severe pulmonary findings.

Post mortem findings included pulmonary haemorrhage with bleeding and necrotic tissue in the main bronchi. Free celomic blood with blood clot was found in one as well as pericardial effusion.

Conclusion

Very little information exists regarding the impacts of underwater explosions on sea turtles. These

effects of explosions on turtles often must be inferred from documented effects to other vertebrates, including humans, marine mammals, and fish with lungs or other gas-containing organs. However, impacts to these other vertebrates may not be reliably extrapolated to sea turtles (VIADA et al., 2008). Injury resulting from PBI is almost totally limited to gas-containing organs. For sea turtles, this would be primarily the auditory system and lungs (GERACI and AUBIN, 1985). Severe injuries, even if not fatal, would probably put the animal at increased risk of predation, secondary infection, or disease.

In our collection of cases we found pulmonary haemorrhage in all of the turtles with fluid fill tympanic bullae in most of the turtles. Although computed tomography is not as sensitive as MRI in detection of brain lesion, we suspect that brain injuries are also a serious result in the case of underwater explosions in sea turtles.

References

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