

PA 572

Daniel F. Cowan, M.D.

Professor of Pathology

University of Texas Medical Branch

PA 572 was a young male *Tursiops truncatus*, estimated by body size (150 cm, 40 kg) and tooth eruption, to be less than a year old. He was found alive, entangled in the line of a crab pot, about 50 yards from shore in water about 4 feet deep, 1/2 mile north of the Texas State Aquarium (TSA), Nueces County, on August 2. He was released without incident by the Corpus Christi Regional Coordinators, but he did not swim off, and evidently could not hold himself upright in the water. For that reason, after a few hours, with the permission of the National Marine Fisheries Service, he was walked ashore and taken to the TSA for rehabilitation. Unfortunately, he died about 12 hours later and was brought to the Galveston Laboratory for examination.

Necropsy revealed extensive injury to the blubber from the pot line. The epidermis had been abraded off from the dorsal fin caudally, including part of the dorsal fin, all of the dorsal ridge, and the edges of the flukes. These areas were quite raw. Also, there were deep rope burns in the angle of the gape, on both sides, and on the oral mucosa where the rope had crossed through his mouth. There were no other signs of injury, except for one abraded area on a flipper, which appeared to be caused by rubbing against a rough surface.

He had extensive myocardial injury in the pattern we attribute to catecholamine injury, an extreme stress reaction. This is by my estimation a day or more old. The presence of abundant foam in the trachea and bronchi is consistent with death by heart failure. Also, there was an early bronchopneumonia, attributed to aspiration, also more than a day old. The stomach and intestinal tract were free of any food matter, and since he had a well-erupted set of teeth, I assume he

should have been eating fish or squid. The lack of food in the intestinal tract is quite consistent with entrapment of more than a day. He also had brain changes suggesting hypoxia.

Curiously, there was a very marked deposition of fat in all the liver cells, and we did observe mild jaundice. I cannot relate that to his entrapment. I don't have a good explanation for that at this time. This sort of thing has many causes, ranging from infection through intoxication to starvation.

In summary, apart from his fatty liver, which I can't explain, this was an apparently healthy animal in his first year of life who became entangled in the rope of a crab pot. He was in this predicament for at least a day, possibly longer. This was so stressful that he developed stress cardiomyopathy, aspirated water and was developing bronchopneumonia. By the time he was found and released, he was in such a state that he likely would have drowned if he had not been brought to TSA. Unfortunately, he went into heart failure as a result of his cardiomyopathy, and died.

Comment: Often it is critical in the evaluation of a case to be able to determine just when an event happened. The evolution of the inflammatory and healing response has been very thoroughly studied in humans, and it is not too difficult to establish the age of a lesion, especially in its early stages. For some tissues, I would expect similar time scales in the dolphin. We know from clinical observations that blubber injuries heal quickly, but we do not have detailed histological documentation of the healing process in that tissue. In our current case, we have good clinical observations of that status of the animal; we know that he was tethered to a (for him) nearly immovable object, he had a long period of intense struggle, evidenced by the rope burns, was unable to eat for some time, and was exhausted to the point of passively accepting handling by his rescuers. I suspect that his death was inevitable by the time he was found, and

that his only chance was rehabilitation in a protected environment. We know from experience that these very young animals adjust to human handlers very quickly, and can do very well in a pool. I would class this stranding as related to fisheries interaction.