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GA 407

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GA407 was a 206 cm long female *T.truncatus* recovered alive on April 16, 1991 from the Pirate's Beach area of Galveston Island. She died shortly thereafter.

This animal externally appeared to be in reasonably good condition. The striking finding on gross examination was marked, diffuse Lymphadenopathy - (enlargement of the lymph nodes) involving all lymph node groups, but most impressively those in the pelvic area and in the prescapular area. The pelvic nodes for instance weighed 150gms together. The spleen was also enlarged. Heart, aorta, adrenals, kidneys, liver, pancreas, gut, genitalia, brain, and pituitary were all grossly normal. A few *Nasitrema* (parasites) were found in the air sinuses, one nematode was attached to the wall of the fourth gastric chamber, and many others were free in the lumen.

Microscopic examination showed most organs to be within normal limits. The bone marrow from the scapula and the vertebral body were infiltrated by malignant bone marrow cells, classifiable as granulocytic leukemia. The liver was infiltrated by similar cells. The enlarged lymph nodes show marked reactive changes, suggesting sepsis.

Comment: Our interpretation in this case is that this young *T.truncatus* developed granulocytic leukemia, a form of cancer of the bone marrow, which results in failure of an important mechanism of defense against bacterial infection. This allowed her to develop sepsis, which was the cause of the massive reactive enlargement of the lymph nodes. This is an adequate explanation for stranding.

As far as we know, granulocytic leukemia has not been seen in a *T.truncatus* before.

PA224 was a 270 cm male *T.truncatus* found freshly dead in the Port Aransas area,(Mustang Island Gulf Beach, 11 km south of Gulf Access Rd #1) on June 22, 1991 and packed in ice for transfer to Galveston.

This animal externally appeared to be in reasonably good condition. There were many tooth rakes, many healed cookie cutter lesions, healed cuts, possibly from propellers, and a few whale barnacles. He was described by the initial observer as appearing to be a robust animal in the prime of life. There was substantial tooth wear.

Internal findings mostly related to parasitism. Many tapeworm cysts were found in the vicinity of the testes (3 cm spheres). The lungs were heavy, and the airways were filled with lungworms, down to very small bronchi (1 mm diam). There was a great deal of foam in the trachea, with worms over the entire surface. There was prominent bleeding into the right lung.

The pancreas was badly distorted by several hemorrhagic cystic structures, in which an apparent decomposing fluke was found. Aorta, liver, gut, kidneys, genitalia, brain and pituitary were all grossly normal.

Microscopic examination showed severe pneumonia, with hemorrhage. Adult nematodes obstructed small bronchi and nematode larvae were present in inflammatory exudate in the alveoli. The pancreas was hemorrhagic and necrotic.

Comment: We are used to finding adult lung worms in stranded dolphins, but the presence of larval forms of the worm suggest superinfestation; that is, progression of the entire life cycle of the worm in the single host animal. This

would be indicative of collapse of the immune system from some cause. Acute pneumonia was also present, suggesting bacterial infection. There was also destructive parasitism of the pancreas, with formation of hemorrhagic cysts and atrophy of non-involved pancreas.

These two cases illustrate instances of immune system failure, one from a cause we can identify, leukemia. This is a typical outcome in untreated leukemia. We were not able to identify the cause in the second animal. This kind of an immune system failure can be due to many things, including exposure to toxins. We have no evidence of that, however.