

**GA 699**

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GA 699 was a 245 cm long, 140.7 kg female *Tursiops truncatus* found alive during the day at Crystal Beach, Bolivar Peninsula, Galveston County. She died shortly before recovery by TMMSN.

She was very thin, with a pronounced neck and prominent ribs. Clusters of *Xenobalaenus* clung to the tips of the fin and flippers, and along the trailing edge of the flukes. There were many skin lesions; mainly 1 cm target-like lesions with a 1 mm central pit. Internal examination confirmed the impression of wasting; the blubber was thin, with a definite zone or layer effect. The non-blubber fat was somewhat gelatinous (serous atrophy) suggesting substantial recent weight loss. The mammary glands were enlarged, and greenish yellow material of the texture of thick milk could be expressed from the ducts.

The heart was grossly normal except for whitish patchy discoloration of the anterior and septal left ventricle. Microscopic examination showed extensive deposition of dense protein, amyloid, in the heart muscle and in the vessels of the heart muscle. Amyloid was also present in the mucosa of the stomach, especially the fourth chamber, and in small vessels elsewhere in the body.

The bronchi contained a moderate amount of whitish foam, suggesting acute heart failure, which we can attribute to stranding. The pleura or lung surface membranes were thickened, and the lungs were both very nodular; the impression was like palpating peas in a pillow. This proved to be due to a very severe, necrotizing bronchopneumonia. Adult nematodes were associated with some of the lesions, and small airways were occasionally packed full of worms.

This was the most severe bronchopneumonia we have seen in a stranded dolphin. This animal also had a moderately severe case of vascular proliferation in the lungs and in many lymph nodes.

All abdominal organs appear normal, except for the stomach. The first chamber was greatly distended by a mass of fibrous and larger fish bones. The mucosa was extensively cracked and sloughing. The general effect resembled a dry lake-bed. The other chambers contained only mucus. No parasites were found.

The right humero-scapular joint was normal, but the left was distended by dense brownish yellow creamy and grainy pus. The synovium (joint space lining) was thick and leathery, and the cartilage eroded. The atlanto-occipital joint was similarly involved. The joint surfaces and margins were eroded.

Comment: This animal was a museum of disease. She is the fifth case of amyloidosis we have seen in the past four years. In this disease a waxy protein material is deposited in tissues. Because it is stiff, it impairs normal tissue movement. Because it gets between the blood vessels and the tissue they supply, the tissue is deprived of oxygen and nutrients, and cannot function normally. This alone was enough to cause this animal to die because of impaired cardiac function. The bronchopneumonia was very severe, and was probably provoked by the many worms in the airways, but has the typical appearance of a bacterial infection. There was an associated bacteremia (bacteria circulating in the blood). The peculiar proliferation of blood vessels (angiosis) is very common in our *Tursiops*, as we have reported before. We have an incidence of about 35%. We still don't know what causes it.

The impaction of the stomach - sort of like the hairball from Hell - was made completely of fish bone and had no man-made material in it. The sloughing of the mucosa is very impressive. We have seen the identical condition once before, in

a dolphin that died in a net. At first we thought this was some sort of decomposition artifact, but there has been a report in the literature of a living dolphin that sloughed and regurgitated the lining of the first chamber, and survived. The case we report here was not due to decomposition, as she had been dead only a couple of hours, and riper animals have not had it. I am not sure which is the chicken and which the egg here. Did the impaction cause the slough, or do they both reflect a functional obstruction lower down?

Finally, there is the arthritis. This looks very much like an infectious process. Cultures were sterile, but this can happen over time, as bacteria are gradually killed by the immune process. The damage remains. Quite a few animals over the past few years have had arthritis. Amyloid disease can be associated with chronic infection. That may be the case here.