

CC127 - Mystery

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A young Fraser's dolphin (*Lagenodelphis hosei*) was found in the surf near Corpus Christi on 22 March, rescued and held in the Texas State Aquarium. Blood cultures were taken, and she was treated with Amikacin, an antibiotic. She was never able to manage herself. She tended to list to the right, and had to be continuously walked around the pool. There was very little spontaneous activity. She died 26 March and was shipped on ice to the laboratory at Galveston.

External examination showed remarkably little. She had a few well healed scars. There were few rake marks, which is not surprising, since this species has small and closely placed teeth and a short beak. It would be difficult to have intra-specific raking.

All the lymph nodes were enlarged and swollen, consistent with a reaction to infection. There was a small amount of acute pneumonia, which developed within the preceding day or two.

A striking feature in the examination was the failure of the blood to clot. There was also bleeding into the blubber on one side, and there were small hemorrhages into the lungs and the lymph nodes, and blood and foam in the airways, consistent with heart failure. This suggests that she was suffering from a condition called disseminated intravascular coagulation, or DIC. DIC has many causes, but in this instance, I attribute it to infection. In DIC, the clotting mechanisms are triggered in the circulating blood, and the proteins that make the blood clot are used up. Tiny clots form in very small vessels. This prevents further clotting, and the individual tends to bleed. Even relatively minor injury can

cause massive bruising, as we found in the blubber, and spontaneous bleeding can occur into organs and tissues.

There was also very extensive injury to the heart muscle. This was both old, with scarring, and recent, within the preceding few days. This can be caused by an extreme stress reaction. The mechanism appears to be constriction or spasm of the small vessels in the heart muscle, which starves it for oxygen. In other species, such as *Delphinus* stranded in southern California, this mechanism has produced characteristic heart scars.

One final important finding was severe, destructive arthritis of one of the flipper joints. This was well established, and had to have been present for weeks or months. This kind of thing can be caused by infection.

Apart from these three things and recent weight loss, this pretty little dolphin was in remarkably good condition. There was little parasitism, and there were none of the lung worm nodules that are so common in *Tursiops* in our waters. She was just coming into sexual maturity.

At this point, we can attribute death to the effects of infection and the stress of infection and stranding. We have no idea why this individual was so far off her usual range. There is no indication of the usual findings in Morbillivirus disease. We have not completed toxicologic studies.

Comment: We interpret findings at postmortem examination based on experience with other similar cases. We have seen enough *Tursiops* to be familiar with the appearance of both normal and abnormal tissues. We know what to expect and when a finding is unusual. This is our first Fraser's dolphin. It is also the first time we have seen DIC in over three years, even though many of the *Tursiops* were also suffering from infection. Degeneration of the heart muscle is common in

stranded dolphins. This instance is the worst we have seen. We can speculate that this is a more sensitive species than *Tursiops*, and more stressed by captivity. We know that many pelagic species tolerate captivity poorly, while inshore *Tursiops* can make a good adjustment. Observations during the period of captivity suggest that she was near death when stranded, and that efforts to help her were fully worthwhile, although not successful.