

October 5, 2023
Specimen ID: *Orcinus orca*
Facility: Miami Seaquarium

PATHOLOGY EXECUTIVE SUMMARY
The Dolphin Company Tokitae
Doctors: Comolli and Sanchez

History/Gross exam: An adult female killer whale (*Orcinus orca*) died in Miami on 18 August, 2023. Georgia and a necropsy exam began at 11:30 am on 19 August, 2023. Chronic clinical history of pulmonary disease treated with antibiotics and antifungals. Recent clinical history includes elevated BUN and creatinine on clinical chemistry and abdominal discomfort. Therapy included subcutaneous fluids and various prescription medications.

Post-mortem findings related to the cause of death based on gross and histologic exam:

- 1. Acute and chronic moderate multifocal bronchointerstitial pneumonia with abundant intralesional bacterial rods – light growth of *Pseudomonas aeruginosa* isolated**
- 2. Acute and chronic moderate multifocal renal degeneration with tubular mineralization and glomerulonephritis (renal amyloidosis)**
- 3. Chronic moderate multifocal cardiac valvular degeneration and endocarditis (endocardiosis)**

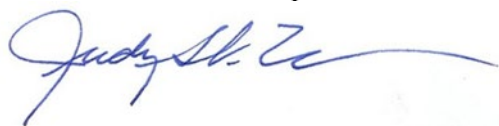
Additional Post-mortem findings:

4. Chronic severe diffuse adrenal cortical atrophy
5. Mild multifocal chronic cerebral neuronal lipofuscinosis
6. Mild focally extensive chronic proliferative keratitis – both eyes
7. Mild scattered chronic pituitary mineralization
8. Mild acute multifocal gastritis
9. Moderate diffuse thyroid dystrophy with a single thyroid cyst
10. Moderate diffuse chronic endometrial degeneration
11. Focal vaginal wall pedunculated fibroma
12. Moderate diffuse hepatic hemosiderosis
13. Mild multifocal chronic tongue ulcers
14. Moderate multifocal dental wear
15. Moderate focal ulcerative chondritis of the left occipital condyle with mild associated arthritis
16. Focal 1-2cm chronic cutaneous scar at the base of the dorsal fin
17. Chronic mild dorsal fin bend

Cause of Death

Death due to progression of multiple chronic conditions including renal disease and pneumonia

Comments: As animals age, degenerative conditions develop. This animal exhibited clinical progression of multiple degenerative changes with a cumulative impact resulting in death. The chronic cardiac valvular disease may have contributed to the lung disease (as is suggested by the presence of “heart failure cells” in the lungs). The ongoing inflammation and immune response led to kidney disease from both immune protein deposition (amyloidosis) as well as tubular degeneration and mineralization, a typical aging change. The renal disease may have caused the gastritis and pituitary mineralization. Other findings may have been significant but with had undetermined clinical impact.



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