Case Number 16-584-5
(Digital slide 259773)

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Case History: 16-584-5

- **Signalment**
  - 11 male Tilapia fish, submitted from a commercial fish farm

- **History**
  - Latest of several large mortality events that have occurred at this facility
  - These were moribund fish that were collected that morning

✓ FRESH IS BEST!
Gross Findings: 16-584-5

- 10 of 11 fish – enlarged, pale, tan, friable liver
- 3 of 11 -- clear fluid in coelomic cavity
- 2 of 11 -- dilated/fluid-filled intestinal loops
- 2 of 11 – moderate exophthalmos and corneal edema

- Loss of osmotic balance is a constant “threat” to a fish.
- Remember that a freshwater fish is relatively hypertonic to its aquatic environment → injury to barrier function (skin, gills, renal) → fluid rushes in!
Cornea

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Choroid rete

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Morphologic Diagnoses

- Eye, severe, subacute keratoconjunctivitis and periocular cellulitis with intra- and extracellular bacterial cocci and extracellular bacterial rods.
- Other tissues affected:
  - Brain, moderate, subacute meningitis.
  - Liver, gills, other tissues – vessels contain activated mononuclear cells with phagocytosed bacterial cocci.
Bacterial Cultures

- 4+ *Aeromonas sobria*
- 4+ *Pseudomonas* sp.
- 4+ *Streptococcus* sp.

➢ *Streptococcus iniae* was cultured from same farm in recent/similar case at the NCVDLS: Rollins Lab.
Strep. iniae

- Serious pathogen of farmed marine and freshwater fish
- Causes: lethargy, ulcers, CNS signs (loss of orientation), exophthalmia, fatal meningoencephalitis
- Beta-hemolytic strep
- Resistant to opsonization/phagocytosis and killing
- Crosses blood-brain barrier inside mononuclear cells
- Control by vaccination difficult due to serotypic variation

Questions?

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