



NAAHTWG Slide of the Quarter (July – September 2005) - Epizootic Ulcerative Syndrome (EUS)

**05-1692: Kissing gourami (*Helostoma temminckii*); longitudinal
section**

Case history

Two fish were submitted by the Australian Quarantine Inspection Service from a shipment that was in quarantine following importation from Singapore. The fish (length approximately 50mm) were submitted on day seven of the quarantine period following abnormally high mortalities. 11 of 400 fish were dead on arrival at the quarantine facility, a further 118 died in the first week in quarantine and 15 in the second week in quarantine.

At necropsy the fish were noted to have brown flecks on the skin, bile staining of the liver and an enlarged spleen. No external parasites were observed on skin smears or gill biopsies.

Morphological diagnosis

Mild to moderate multifocal subacute to chronic granulomatous mycotic myositis, nephritis and gastritis. Diffuse, moderate hyperplasia and hypertrophy of epithelial cells in the gill. Mild, multifocal degenerative changes in the hepatocytes.

Aetiological diagnosis

Presumptive; Epizootic Ulcerative Syndrome (EUS) and infection with *Aeromonas hydrophila*.

The three most significant and obvious lesions are:

- The large fungal hyphae surrounded by an intense inflammatory response in the skeletal muscle, kidney and other organs.
- Diffuse hypertrophy, hyperplasia and oedema of gill epithelium.
- Multifocal areas of mild foamy degeneration of hepatocytes.



Figure 1

Hyphae were more prominent using Grocott's stain (Fig. 1) and have infiltrated the kidney (Fig. 2) and other abdominal organs including the muscularis layer of the stomach wall and throughout the coelomic cavity. Individual fungal hyphae in the coelomic cavity are surrounded by a thin layer of flattened macrophages. In the skeletal muscle the granulomatous response to the hyphae is more pronounced (Fig. 3) and there are necrotic muscle fibres infiltrated with macrophages as well as between muscle fibres.

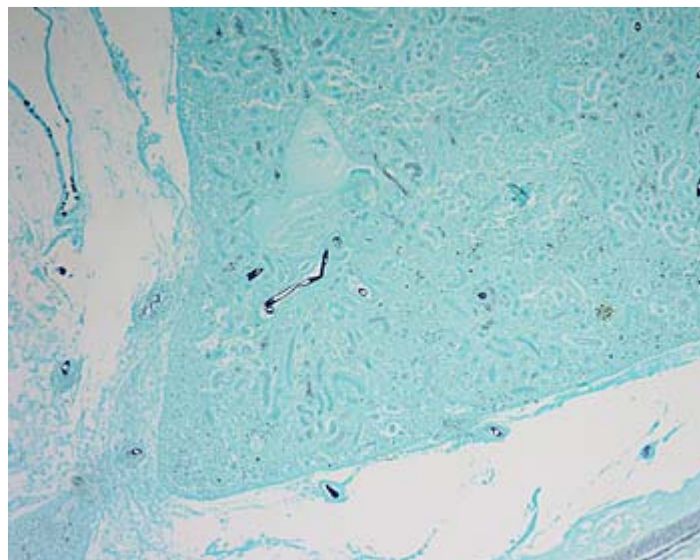


Figure 2

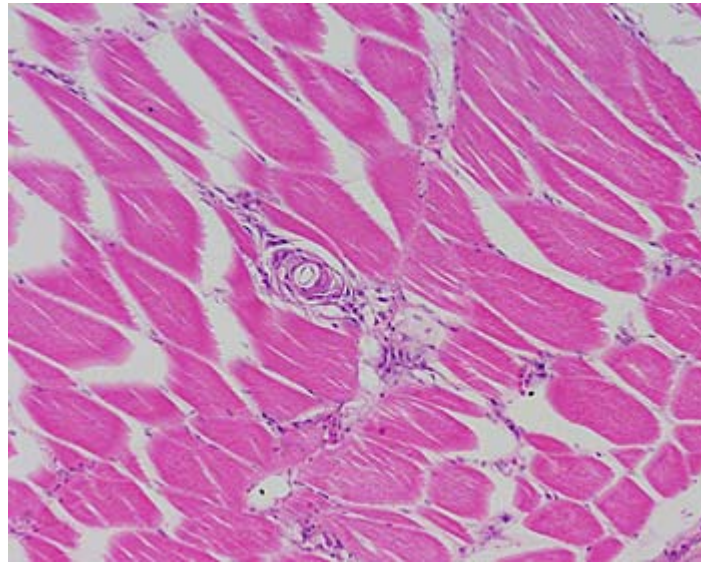


Figure 3

The gill lesions (Fig. 4) are unusual, and include oedema and hypertrophy and hyperplasia of epithelial cells. There are scattered necrotic cells and a few *Monogenea* (in some sections). The gill lesions are not associated with EUS and are possibly due to water quality. The anatomy of the buccal cavity is different from that of most species of fish in having elongated folds with multiple protruding spines.

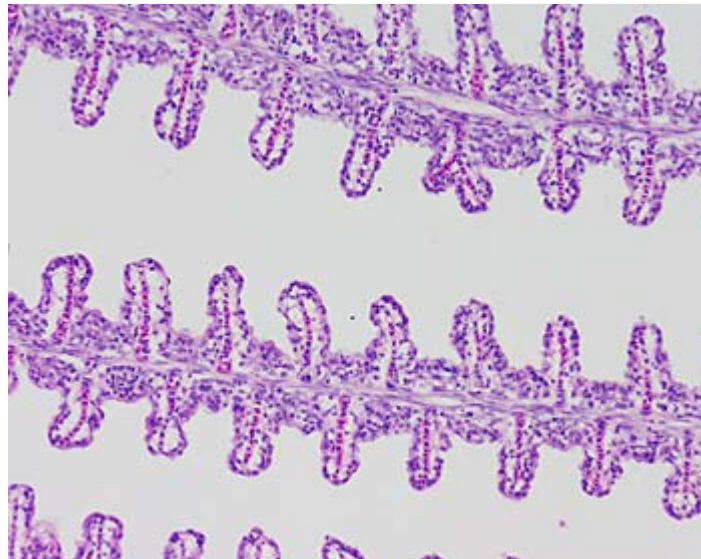


Figure 4

Multifocal areas of mild foamy hepatocyte degeneration can be seen in the liver (Fig. 5). This lesion is commonly seen in freshwater fish with systemic *Aeromonas hydrophila* infection, and a moderate growth of *Aeromonas hydrophila* was isolated from the liver and spleen of this fish. There are also distinct areas of autolysis in the liver in each section. Melanomacrophages are numerous in the spleen and kidney and the spleen is depleted of



haematopoietic tissue. There is necrosis or degenerative change to epithelial cells in several renal tubules.

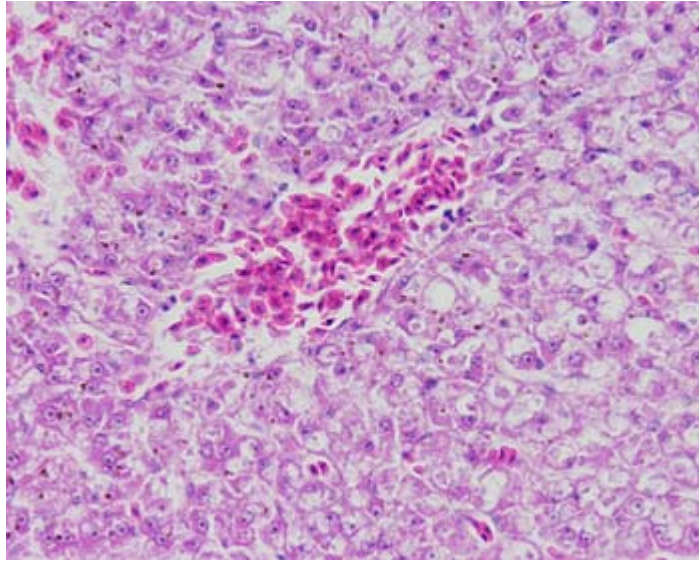


Figure 5

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