

## Epizootic Ulcerative Syndrome in Nurseryfish *Kurtus gulliveri* (Perciformes: Kurtidae), in the Northern Territory

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Epizootic ulcerative syndrome (EUS) is associated with the invasive fungus *Aphanomyces invadans* and is endemic to a number of water systems of the Northern Territory coastline. The syndrome was first recorded in the Northern Territory in mullet *Liza diadema* in 1986 and has been reported subsequently in at least 22 fish species from 27 geographically separate freshwater or estuarine environments. The pathological findings associated with an occurrence of EUS in non-captive nurseryfish, *Kurtus gulliveri*, from Marakai Creek, a major tributary of the Adelaide River, Northern Territory in August 2004 are described. The occurrence of EUS in *K. gulliveri* represents a new host record.

The fish examined was submitted to the laboratory fixed in 10% formalin. It was the only infected specimen of 1262 nurseryfish captured from 2001 – 2005 as part of a life history and genetics study to determine parentage of egg masses which affix to a “hook” arising from the supraoccipital crest of the males. A haemorrhagic, well-circumscribed ulcer approximately 15 x 25 mm was present on the right ventro-lateral flank which extended into the underlying skeletal musculature of the fish (Figure 1).

Histological examination showed erosion of the integumentary epithelium at the periphery of the ulcer, with lifting of scales in scale pockets and loss of scales. Centrally, an intense inflammatory cell infiltration of the dermis was present accompanied by marked hyperaemia and haemorrhage extending into the peripheral regions of the ulcer. In some areas, the inflammatory response extended into the underlying skeletal muscle fibres. Overlying the ulcerated tissue was a zone of necrotic inflammatory cells with superficial bacterial colonisation. Within the infiltrating inflammatory cells in the dermis and the superficial skeletal muscle fibres, multiple, discrete, irregular whorls of histiocytic cells were present peripheral to necrotic tracts of variable size (Figure 2). A high proportion of these tracts contained large, central or paracentral fungal hyphae which were readily demonstrable on staining by the periodic acid-Schiff or Gomori’s methamine silver methods (Figure 3).

A diagnosis of severe, sub-acute to chronic granulomatous dermatitis and myositis consistent with EUS was made based on the characteristic histopathology induced by invasion with the large non-septate fungal hyphae.

*(figures, see next page)*



Fig. 1 Single well circumscribed, haemorrhagic ulcer on mid ventro-lateral flank of a female nurseryfish *Kurtus gulliveri*, length 255 mm.

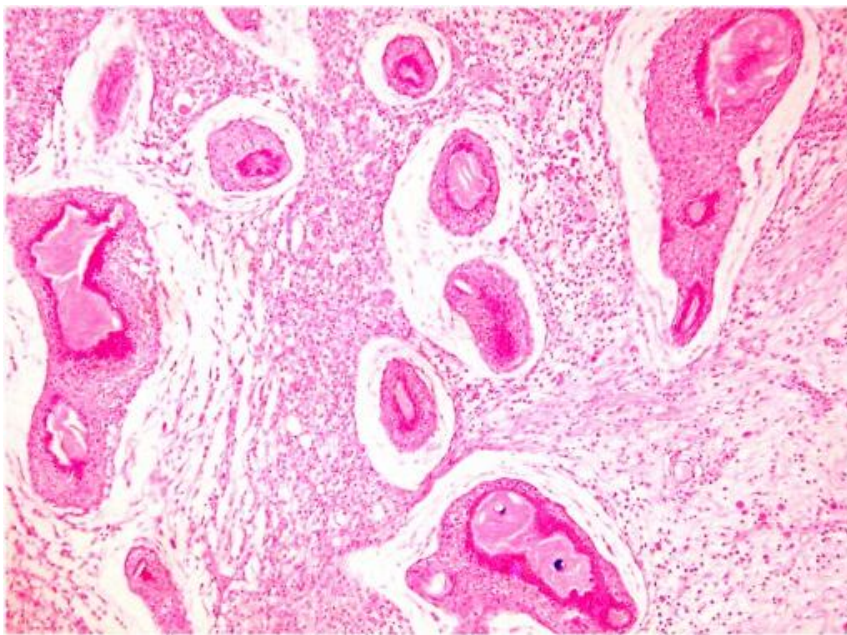


Figure 2. Intense granulomatous inflammatory cell infiltration of dermis showing discrete whorls of epithelioid cells peripheral to necrotic tracts (Haematoxylin and eosin).

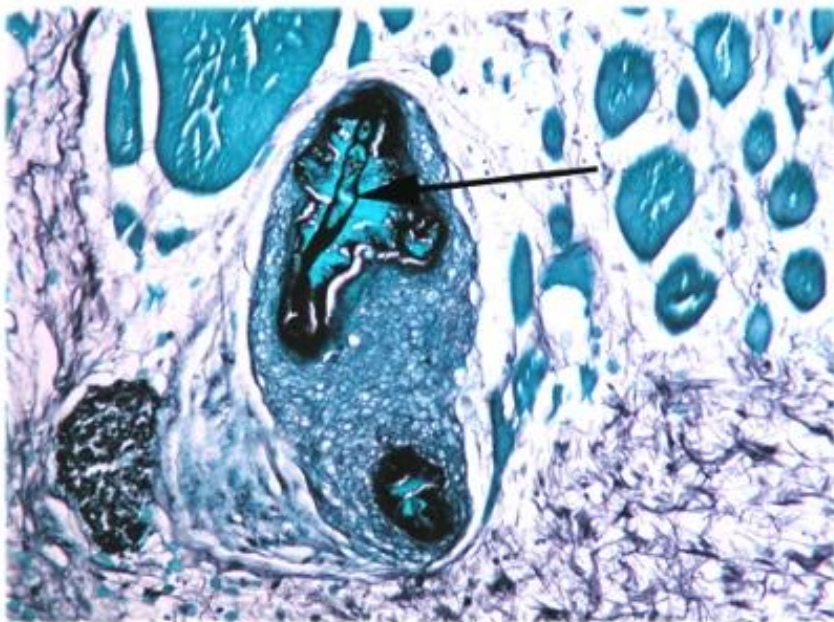


Figure 3. Higher magnification of necrotic tract showing large, non-septate fungal hypha (arrow) (Gomori's methenamine silver).