

NOTE

Mycobacterium spp. associated with proliferative lesions in pufferfish

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Abstract

Piscine mycobacteria are spread worldwide and can cause chronic lethal disease in freshwater and marine fish. The infection is considered to be a zoonosis causing local granulomatous lesions in humans. Here we present two independent cases of mycobacteriosis in giant pufferfish (*Tetraodon mbu*) showing proliferative masses in the region of the mouth without formation of typical granulomatous lesions. Mycobacteria were demonstrated in the lesions by special stains and *Mycobacterium marinum* and *M. phlei* were confirmed by PCR. This showed, beside epithelial and mesenchymal tumors, viral, fungal or parasitic induced lesions, mycobacteriosis is an important differential diagnosis in cases with atypical proliferative masses.

Piscine mycobacteria, such as *Mycobacterium marinum*, *M. fortuitum* and *M. chelonae*, are spread worldwide and can cause disease in freshwater and marine fish (Bragg et al., 1990; Decostere et al., 2004; Dulin, 1979; Giavenni et al., 1980; Jacobs et al., 2009; Passantino et al., 2008). The infection leads to diverse, but mostly unspecified clinical signs, including emaciation, exophthalmia, ascites, skin ulcerations and scoliosis (Decostere et al., 2004; Jacobs et al., 2009). Typically, low level mortalities are recorded in affected stocks (Smith, 1997). During necropsies, multiple granulomas in skin and internal organs can be seen (Decostere et al.,

2004; Herbst et al., 2001). These granulomas are characterised by epithelioid macrophages surrounding a necrotic center with possible involvement of melanomacrophages or melanocytes. In the inflammatory areas, bacteria are located extracellularly or intracellularly in macrophages (Noga, 2010).

Tetraodon mbu is the largest freshwater pufferfish and is widespread in the area of the Congo River (https://en.wikipedia.org/wiki/Mbu_pufferfish). Due to its size and potentially aggressive behavior it is rarely kept in private aquaria.

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