Verrucous epidermal hyperplasia on pectoral fin of a wels catfish (*Silurus glanis*, Linnaeus 1758)

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BACKGROUND

The Wels catfish (*Silurus glanis*) is a commercially important Eurasian species that originally evolved in Asia before expanding its range to the west. It possesses the attributes of a species well adapted to introductions outside its native range. The majority of disease reports in this species, especially dealing with viral and bacterial infections, are related to aquaculture or experimental conditions.

Methods

A Wels catfish (fig.1), kept in a 1k liters tank in Ariis public aquarium in Ariis (Friuli Venezia Giulia, Italy) displaying local aquatic life, showed multiple superficial translucent discrete, soft, raised cutaneous verrucous growth on the left pectoral fin. These slow-growing, irregularly spherical, sessile masses were not ulcerated and were attached to the fin (fig. 2 and 3).

The fish was anesthetized with MS-222 and an excisional biopsy was performed.

Skin mass was routinely processed for histology; anti-Proliferating Cell Nuclear Antigen (PCNA) antibody was employed to assess the proliferative activity of epidermal cells. Molecular analyses were carried out to detect viral pathogens by extracting DNA from the skin mass. Several PCR-based protocols were applied to the extracted DNA in order to detect viral genome belonging to viruses with fibroblastic tropism or associated with epithelial proliferation such as herpesviruses, ranaviruses and adenoviruses.

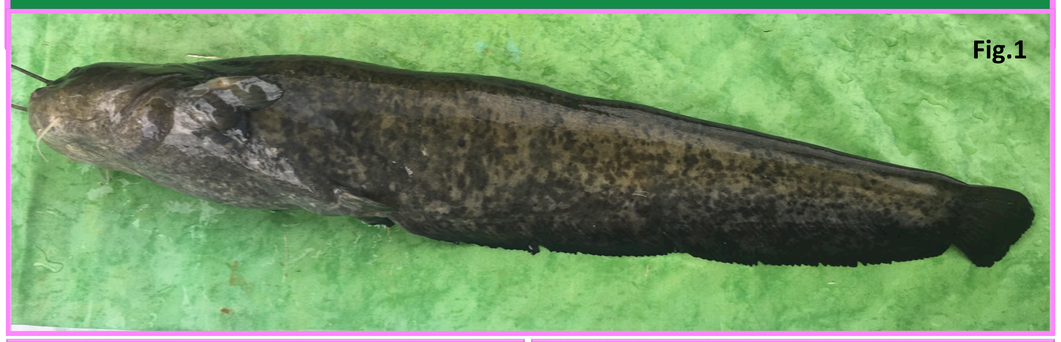
Fig.1


Fig.2

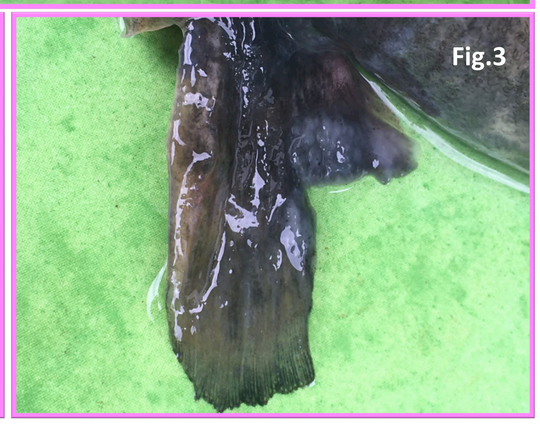
Fig.3

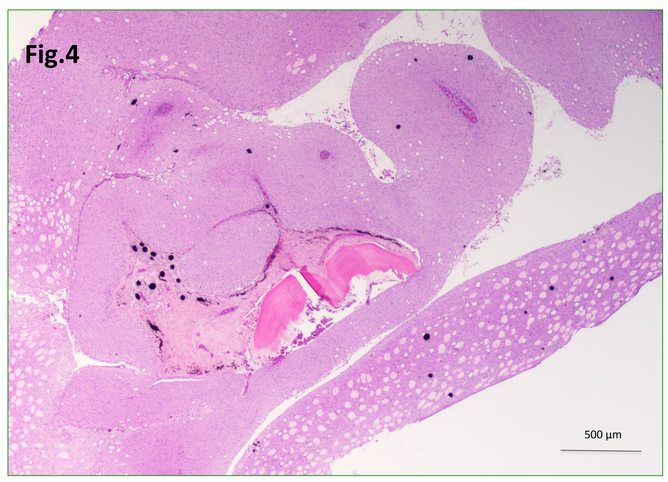

Fig.4

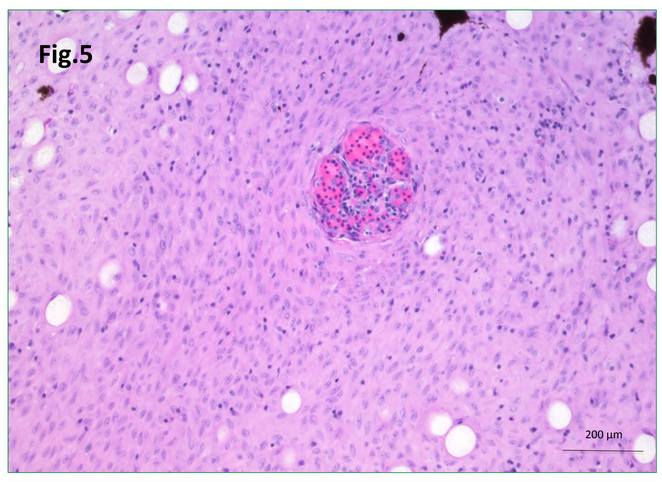

Fig.5

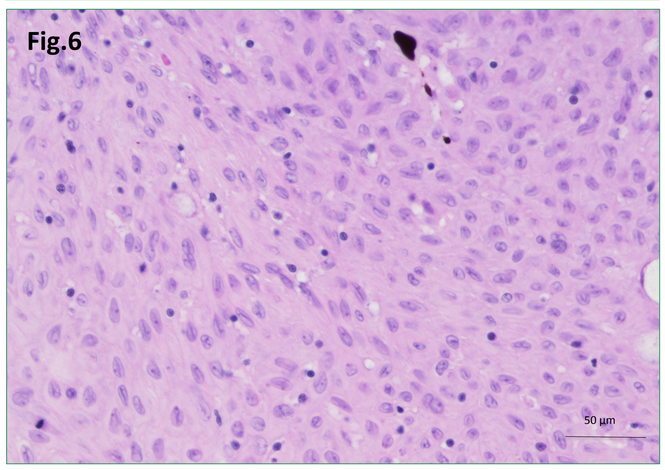

Fig.6

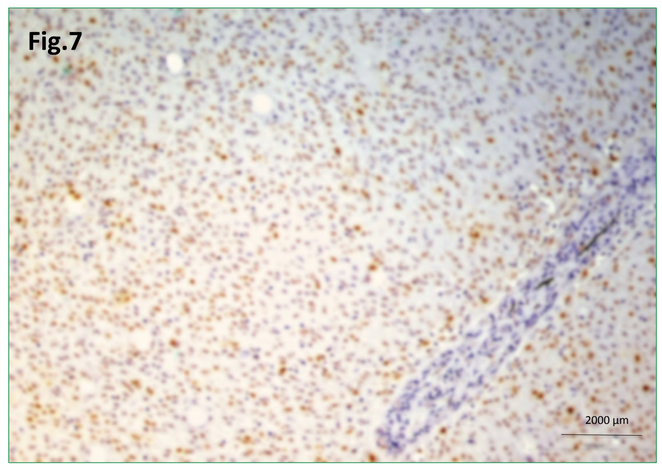

Fig.7

Results and Conclusions

The verrucous growth was well circumscribed, unencapsulated, densely cellular and composed by 12 to 20 layers of densely packed epithelial cells (fig.4), forming papillomatous structures interdigitating with the lower dermis.
The epithelial cells had prominent nuclei and frequent double nucleoli (fig.7); cytoplasms showed frequent vacuoles and mitotic figures were rarely observed (ranging from 0 to 1 per HPF). Goblet cells were scarce in the most central part of the epidermal cells proliferation area (fig. 5 and 6). The type of stroma was vascular, composed by septa of connective tissue containing florid capillaries (fig.5) and small foci of necrosis. No bacteria were noticed and PCR- based virological investigations were negative. PCNA expression analysis revealed marked positivity (fig.7).

In conclusion, a diagnosis of epidermal hyperplasia, possibly related to environmental and abiotic stressors, was made.

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