

عنوان مقاله:

Research Article: Histology of the inflammatory response of carp (*Cyprinus carpio* L.) to fungus, *Aphanomyces invadans*, infection

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خلاصه مقاله:

The present investigation was carried out to study the inflammatory response of carp (*Cyprinus carpio* L.) to the fungus *Aphanomyces invadans* infection which is known as a causative agent of Epizootic Ulcerative Syndrome (EUS). Thirty two carps with an average length of ۱۳cm (± ۲ cm) were injected intramuscularly with ۰.۱ ml of the *Aphanomyces invadans* spore suspension. Two injected fish were sacrificed by an overdose of ۱۰% benzocaine, at ۶ hours, ۱, ۲, ۳, ۴, ۵, ۶, ۷, ۱۰, ۱۴, ۱۸, ۲۲, ۲۸, ۳۵ and ۴۲ days after inoculation. Blocks of tissue were fixed in ۱۰% buffered formalin then processed and stained with haematoxylin and eosin, Grocott and periodic Acid Schiff (PAS) for histologic examinations. A chronic inflammatory response, consisted of cellular infiltration, vascularization, fibrosis and granulomata formation, occurred after inoculation of spores of *Aphanomyces invadans* at water temperature of ۲۷°C (± ۱.۵ °C). Macrophages which infiltrated the lesion area in early stages took on an epithelioid configuration at ۳ days post injection. In addition to classical Langhans and foreign body type of giant cells which were observed ۳ days after infection, also intermediate type was seen in the lesion area. With continuing healing, giant cells reduced in number by ۱۴ days and disappeared at ۱۸ days after injection. Muscle regeneration started at ۳ days and the defect area was filled by new muscle bundles by ۱۴ days. Fibroplasia, along with vascularization, started at ۳ days and well developed granulomata formed by ۱۰ days and then fully matured granulomata which filled the whole defect area and were surrounded by the normal muscle bundles were observed by ۱۸ days post injection. It is apparent from the results of the present study that healthy carp resist *Aphanomyces invadans* infection at high temperatures (۲۷°C) by an active defence mechanism and employing a strong inflammatory response.

کلمات کلیدی:

Inflammatory response, Fungus, *Aphanomyces invadans*, Histological examination, EUS, Carp

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