PATHOLOGICAL CHANGES AND VIRAL ANTIGEN DISTRIBUTION IN TISSUES OF IBERIAN HARE (LEPUS GRANATENSIS) INFECTED WITH MYXOMA VIRUS

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Abstract Text

Myxomatosis is an enzootic disease caused by myxoma virus (MYXV; genus Leporipoxvirus) in several continents. Despite MYXV causes clinical and even fatal disease in European rabbits (Oryctolagus cuniculus), only sporadic cases of myxomatosis have been reported in brown hare (Lepus europaeus) and mountain hare (Lepus timidus) in Europe. However, a cross-species jump was confirmed in 2018 when a novel recombinant MYXV causing high mortalities was isolated in Iberian hare. The aim of this work was to evaluate the main lesions, and organs and target cells of MYXV infection in Iberian hares. For it, anatomopathological and immunohistochemical studies were carried out in twenty-eight hares in which MYXV infection was confirmed by PCR. The main external macroscopic lesions were blepharitis, epistaxis and occasional rectal bleeding, as well as oedema of nasal, oral, anal and genital orifices. The histopathological examination revealed a hyperplastic epidermis with predominant hyperkeratosis, where bacterial colonies were occasionally observed. Likewise, keratinocytes showed widespread hydropic degeneration and eosinophilic cytoplasmic inclusion bodies. Myxomas were not found at the base of ears, eyelid or other skin areas. However, microscopically the dermis of most animals presented a loosely arranged slightly basophilic myxoid matrix admixed with oedematous areas, and with the presence of inflammatory infiltrates. Several internal organs and body cavities showed an intense congestion and haemorrhages. Furthermore, alveolar oedema and interstitial pneumonia in lung, dramatic depletion of lymphocytes in spleen and necrosis in liver and testis were observed. The main target cells of MYXV were epithelial and myxoma cells, hepatocytes, Leydig and Sertoli cells in specific organs, as well as macrophages, lymphocytes, fibroblasts, dendritic shape-like cells and endothelial cells in several organs. These findings, characterized by an acute or hyperacute presentation, are compatible with the amyxomatous forms of the disease.Further studies are needed in order to understand MYXV immunopathogenesis in Iberian hare.