

IMMUNOHISTOCHEMICAL CHARACTERIZATION OF LYMPHOCYTIC SUBPOPULATIONS (CD3/CD20) IN ENDOMETRIUM OF SUB-FERTILE MARES

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Introduction: Chronic endometritis (CE) is a common response to semen introduction into the uterus, repeated artificial insemination (AI) or intrauterine treatments. It consists of the protraction of an inflammatory condition with an abnormal pattern of lymphocyte subsets. Endometrial leucocytes are involved in the regulation of the immune response during embryo implantation and trophoblast growth. The aim of this study was to evaluate the endometrial lymphocyte subsets in subfertile mares.

Materials and Methods: Endometrial biopsy samples from 15 subfertile mares without clinical signs of endometritis and negative for uterine cytology were analysed. The samples were classified as belonging to group 2 a/b of the Kenney's classification (1986). Characteristic findings included the presence of plasma cells and a prominent non-specific, lymphocytic infiltrate. According to the degree of clinical infertility, the mares were divided into two groups: (A) nine mares without a foal after more than three AIs and/or had shown abortion or embryo resorption; (B) six mares without a foal after no more than two AIs at the end of the breeding season. Immunohistochemistry was performed using markers for CD3 and CD20. Positive cells were counted in four randomly-selected high-power fields (HPFs).

Results: Group A showed about twice the number of CD3⁺ cells than group B with prominent periglandular localization. CD20⁺ cells were almost absent in group B, while there were 3–4 cells/HPF in group A.

Discussion: Immunohistochemistry can help in the interpretation of the Kenney's category 2 a/b. Although representing a preliminary approach, we believe that the evaluation of the lymphocyte subpopulations, in particular CD3, may be used as a parameter for characterization of the subcategories.

FATAL OUTBREAK OF TOXOPLASMOSIS IN CAPTIVE PALLAS'S CATS (*OTOCOLOBUS MANUL*)

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Introduction: The Pallas's cat (*Otocolobus manul*) is a nearly-threatened feline with a wide distribution across central Asia and west into Iran. There are at least 178 Pallas's cats in zoological collections across the world. This is a case report of an outbreak of fatal acute toxoplasmosis in a captive collection of Pallas's cats.

Materials and Methods: Four months after importation into a zoological collection in the UK, four juvenile Pallas's cats died suddenly or after showing acute and severe lethargy, dullness, rapid shallow breathing and jaundice. A full post-mortem examination was performed and a set of tissues processed for routine histopathology. Further testing included immunohistochemistry (IHC) and PCR for *Toxoplasma gondii*.

Results: Gross findings were non-specific and included mild to moderate diffuse skeletal muscle atrophy, reddening and consolidation of the lungs and enlarged submandibular, perihilar and mesenteric lymph nodes. One animal showed jaundice and moderate subacute diffuse hepatic micronodularity. Microscopical findings were similar in all four animals and consisted of moderate to severe subacute multifocal to coalescing fibrinonecrotizing interstitial pneumonia, with occasional 1–2 µm protozoan parasites in macrophages; moderate to severe subacute multifocal to coalescing necrotizing portal hepatitis, with occasional intracytoplasmic cysts containing 10–20 protozoan parasites in hepatocytes; and multifocal mild subacute to chronic neuropil gliosis. The presence of *T. gondii* was confirmed by IHC and PCR.

Discussion: Pallas's cats are extremely susceptible to toxoplasmosis and fatal outbreaks can occur in zoological collections. Zoological collections must implement effective management strategies to prevent exposure of immunologically naive Pallas' cats to *T. gondii*.