

ABSTRACT

Toxocara canis is endoparasitic geohelminth of canids. In its life cycle it uses paratenic host (even humans) and can cause severe problems called cerebral toxocariasis when attacks central nervous system. The exact mechanism of pathogenicity in nervous system is unknown and experimental studies examines rather the acute phase of toxocariasis, therefore we characterized the course of cerebral toxocarosis in mice from acute to chronic phase in this master thesis.

We found larvae of the parasite in the brains of mice. The larvae in the tissues occurred both, individually and in clusters. The presence of larvae was observed in regions that affect both movement and memory. We did not find any visible injury nor inflammation surrounding the larvae in the tissue. However, histological examination showed brain tissue pathologies in all mice, namely local necrosis, hemorrhages, thickened vessel walls, cell infiltrates in tissue and around vessels and abnormal angiogenesis.

The mice showed neurological symptoms with increasing frequency from the 9th week post infection. Production of specific antibodies was also monitored. The level of antibodies in reinfected mice was higher compared to antibody levels of mice with a single infection. No correlation with the presence of neurological symptoms was shown.

Key words: *Toxocara canis*, larval toxocariasis, neurotoxocariasis, cerebral toxocariasis, CNS, migration, neurological symptoms, histopathology