

Original article

Pathological lesions in European bison (*Bison bonasus*) with infestation by *Ashworthius sidemi* (Nematoda, Trichostrongylidae)

B. Osińska¹, AW. Demiaszkiewicz², J. Lachowicz²

¹ Faculty of Veterinary Medicine, Warsaw University of Life Sciences
Nowoursynowska 159c, 02-776 Warszawa, Poland

² W. Stefański Institute of Parasitology, Polish Academy of Sciences
Twarda 51/55, 00-818 Warszawa, Poland

Abstract

Ashworthius sidemi Schulz, 1933 is a blood sucking gastrointestinal nematode, primarily typical for Asiatic deer. It was found for the first time in Poland in European bison in 1997. To estimate the level of invasion of *A. sidemi* and histopathological changes connected with the presence of the parasite in the years 2004-2007 parasitological and histopathological examinations of 54 European bison from Białowieża Forest were carried out. Parasitological examination was carried out by the sedimentation method and *A. sidemi* were diagnosed under a binocular microscope. Samples for histological examination were collected from the abomasum and duodenum walls as well as from regional lymph nodes. Tissue samples were then fixed with 10% buffered formalin, embedded in paraffin, cut in to 5 µm thick sections and stained with hematoxylin and eosin (H&E). Parasitological examinations showed the presence of fourth stage larvae and juvenile forms of *A. sidemi*. The maximal intensity of invasion rose systematically from 4470 *A. sidemi* nematodes in 2004/2005 to 44310 in 2006/2007. Histopathological examinations showed infiltrations of inflammatory cells in the walls of abomasa and duodena at various levels of intensity (mainly lymphoid cells and eosinophils), hyperemiae, oedemae and lesions of mucosa and proliferation of lymphatic follicles. In individual cases of dysplasia of epithelial cells, atrophy or hyperplasia of glands and the presence of parasites in the lumen or walls of the abomasum/duodenum were observed. In one case, parasitic nodules were found. In regional lymph nodes proliferation of lymphatic follicles, presence of eosinophils and desolation of reproduction centers were observed. Intensification of histopathological changes was connected to a considerable degree with the developmental stage of *A. sidemi* as shown by parasitological examination.

Key words: *Ashworthius sidemi*, European bison, Trichostrongylidae, abomasum, duodenum, pathological lesions