

# UNUSUAL PATHOLOGICAL FINDINGS IN A HORSE INFECTED WITH TAPEWORM *ANOPLOCEPHALA PERFOLIATA*

D. Stankevica\*, D. Gorbacevska\*, J. Vanaga† and A. Kalnina‡

\*Preclinical institute, Faculty of Veterinary Medicine, †LBTU Veterinary clinic, Faculty of Veterinary Medicine and ‡Institute of Food and Environmental Hygiene, Faculty of Veterinary Medicine, Latvia University of Life Sciences and Technologies, Jelgava, LV

**Introduction:** *Anoplocephala perfoliata* is tapeworm from *Anoplocephalidae* (*Cyclophyllidea*, *Cestoda*) with indirect life cycle via mites from *Oribatidae* spp. This parasite is described as the most prevalent tapeworm infecting horses associated with different types of colic. The parasites frequently attach to the wall of the caecum and ileum, leading to mechanical obstruction of intestines, damage of the gut mucosa, hypertrophy of the intestinal circular muscle layer as well as ileal impaction or intussusception.

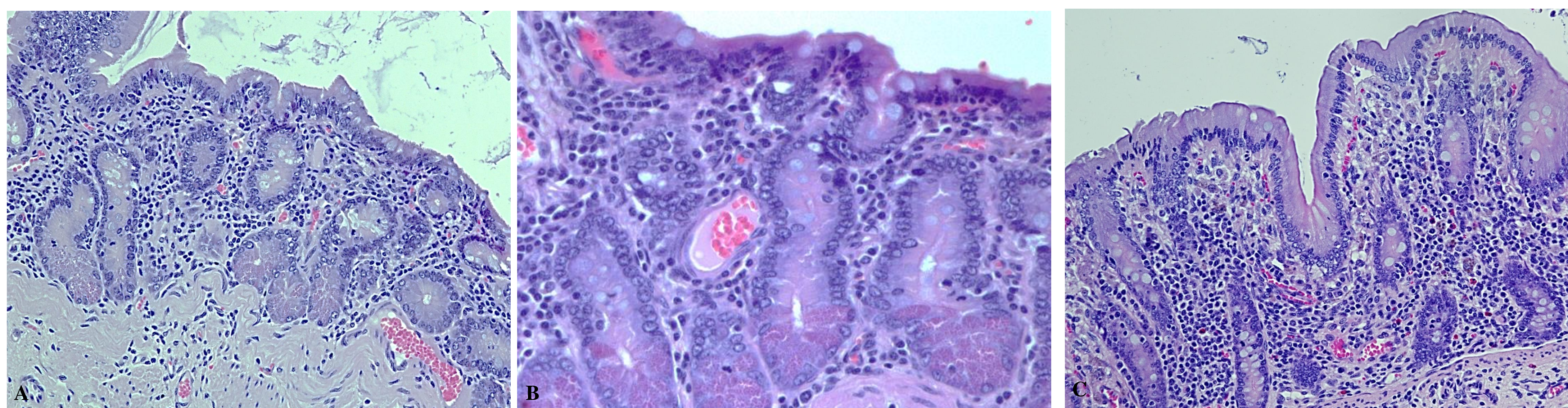
**Materials and Methods:** 6 year old female horse was sent for post-mortem examination after it was euthanized due to anorexia, depression and progressive weight loss. Regular deworming with ivermectin medication was performed. Blood analysis showed mild anemia. Full gross and histological examination and parasitological examination of the intestinal specimens was performed. Parasite species identification and their maturity stages were determined considering their morphological characteristics. Fecal samples for presence of eggs were analyzed by McMaster technique.



**Fig.1** Multiple tapeworms *Anoplocephala perfoliata* attached to the mucosa of the jejunum. Longitudinal section of the intestine. Horse.

**Fig. 2.** Gelatinous transformation of the femoral bone marrow. Longitudinal section of the femoris. Horse.

**Results:** Necropsy of the horse showed severe emaciation and severe tapeworm infestation of the jejunum (Fig. 1), with multiple ulcerations and hemorrhages of the intestinal wall but only few tapeworms in the caecum. Parasitological examination of the jejunal specimens identified more than 100 tapeworms in different maturity stages belonging to species *Anoplocephala perfoliata*. The length of parasites varied from 7 mm in smallest to 55 mm in largest parasites and the width varied from 3mm in smallest to 12mm in largest tapeworms with 1 to 2 mm large scolexes. Morphological investigation also revealed serous atrophy of body fat tissue and gelatinous transformation of the femoral bone marrow (Fig. 2). Histological examination showed mucosal atrophy of the jejunum and mild lymphocytic enterocolitis without eosinophil infiltration (Fig.3).



**Fig. 3 Intestines. Horse. A** Villous atrophy of the jejunum, mild to moderate lymphoplasmacytic enteritis. Jejunum. 200x. H&E., **B** Mild infiltration of lymphocytes and plasma cells in the lamina propria and cryptal hypertrophy of the mucosa. Jejunum. 400x. H&E. **C** Mild to moderate lymphoplasmacytic colitis. Colon. 200x. H&E.

**Conclusions:** Pathological findings of the horse showed changes not typically associated with *Anoplocephala perfoliata* infestation, such as severe jejunal infestation instead of the typical localization of the parasite in the ileocaecal region. Mild intestinal inflammatory changes with absence of eosinophils could be explained by the bone marrow atrophy and hence reduced haematopoiesis.