

TITLE

FIRST DESCRIPTION OF CO-INFECTION WITH BRACHYSPIRA HYODYSENTERIAE AND ENTAMOEBA POLECKI IN A FATTENING PIG WITH SEVERE DIARRHOEA

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CONTENT

Introduction: Enteric disease in pigs is usually of multifactorial aetiology, including infectious and non-infectious factors. In many cases of diarrhoea in weaner-to-finisher pigs, the combination of two or more microorganisms leads to an aggravation of clinical signs and intestinal lesions. In the present report, a case of swine dysentery in co-infection with *Entamoeba polecki* is described.

Materials and methods: A 4-month-old fattening pig from a farm with problems of diarrhoea was necropsied at the Veterinary Faculty (UAB). Necropsy findings were consistent with a severe fibrino-necrotizing typhlocolitis with abundant muco-haemorrhagic content. Further investigations were conducted, including histopathology, silver staining for detection of spirochetes, bacterial isolation, PCR for the detection of enteric bacterial and protozoal pathogens, and in situ hybridization to detect enteric protozoa.

Results: Histologically, severe diffuse necrosis of the mucosa was observed in colon and cecum together with spiral-shaped bacteria positive to Warthin-Starry. Numerous PAS positive amoebic trophozoites were observed free in the necrotic debris, lamina propria, submucosa, and within lymphatic vessels of cecum and colon.

Brachyspira hyodysenteriae was detected in the colonic content by PCR. The trophozoites were identified as *Entamoeba* spp. by in situ hybridization. In addition, *Entamoeba polecki*, *Balantidium* spp., *Blastocystis* spp., and *Trichomonas* spp. were detected in the colonic content by PCR.

Discussion and conclusion: To our knowledge, this is the first description of *B. hyodysenteriae* co-infection with *E. polecki* associated with fibrinonecrotizing typhlocolitis in a pig. Severity of macroscopic and microscopic lesions observed was probably the result of the interaction between *B. hyodysenteriae* and *E. polecki*. However, it cannot be ruled out that *E. polecki* could be an opportunistic pathogen secondary to ulceration since it was found in the lamina propria and submucosa only in areas of erosion and ulceration. To date, the pathogenicity of *E. polecki* in domestic pigs has not been fully elucidated.