

## DS Hepatic Coccidiosis in Angora Rabbits

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**Abstract:** Clinical, pathological and parasitological findings were presented in cases of naturally occurring hepatic coccidiosis in 10 Angora rabbits aging 4 to 6 week-old. Macroscopical changes were characterized by mild ascites, multiple 1-3 mm diameter, discrete to colascing, yellow white nodules in the liver. Microgametes, macrogametes and oocysts were detected in *Giemsa* stained impression smears. Histological lesions were characterized by bile duct dilatation, bile duct epithelial hyperplasia and duct luminae were filled with numerous ovoid cysts.

**Key words:** Hepatic coccidiosis, angora rabbits

### INTRODUCTION

Hepatic coccidiosis is a primary disease of young rabbits and causes severe infection, outbreaks and deaths<sup>[1,2]</sup>. Its causative agent is *Eimeria stiedae* and its developmental forms are found in the bile duct epithelial cells. While most infections are mild and these infections are often clinically inapparent, severe infections can result in progressive emaciation, liver enlargement, diarrhoea, ascites and leading finally the death<sup>[2,3]</sup>. This case report describes parasitological, macroscopical and histopathological findings in Angora rabbits which were brought from an amateur breeding colony. According to the history, there was about 200 rabbits and they were reared on closed barriers containing 8-10 rabbits. Ten young rabbits which were died or killed due to exhibiting the symptoms of abdominal distention, emaciation, weakness were submitted to the pathology department for necropsy. After the complete necropsy, tissue specimens from liver, gall bladder, kidney, spleen, lungs, brains were collected and fixed in 10% neutral formalin for the histopathological examination. Tissues were embedded in paraffin, sectioned at 5 micrometer thickness and stained with haematoxylin and eosin<sup>[4]</sup>. Faecal samples from rabbits were collected and analysed by centrifugal flotation with saturated sugar solution to detect the coccidial oocysts. The faeces contaminated with oocysts were mixed with 2,5% potassium dichromate and placed in petri dishes for sporulation of oocysts. All the samples were examined for identification of coccidia species.

**Macroscopical findings:** There was generally 5-10 mL clear yellowish transudate accumulation in peritoneal

cavity. The livers were pale in color, icteric, enlarged and its surface contained multiple 1-3 mm diameter, slightly arised, discrete to colascing, yellow white nodules (Fig. 1). The cut surface had dilated bile ducts and filled with inspissated bile.

**Parasitological findings:** Impression smears from liver contained high numbers of coccidial organisms intermixed with hepatic paranchymal cells. The coccidian parasites were detected in various stages of development including early gametogenous development, microgametes, macrogametes and fully formed oocysts. Oocysts were elipsoid appearance 30-40 by 20-25 µm in size. Oocyst wall was smooth and had two layers. Macrogametes were also ovoid in appearance and orange to bluish cytoplasmic granules, 25-35 by 20 µm in size. Microgametes were present within the bile epithelial cells. Sporulation time was determined as 72 hrs.

**Histopathologic findings:** Enlargement of bile duct, hepatocellular necrosis, bile granulomas, bile duct hyperplasia and epithelial proliferation were the main lesions seen. Bile ducts were filled with the various developmental stages of the parasite (Fig. 2). There was a pus like material with desquamated epithelial cells and oocyst in the bile ducts. The hyperplastic bile ducts were surrounded by fibrous connective tissue and mononuclear cell infiltration. The liver parenchyma showed patchily necrotic or degenerated areas.

Hepatic coccidiosis in domestic rabbits have been reported throughout the world<sup>[5]</sup>. Rabbits are infected by ingestion of sporulated oocysts<sup>[6,7]</sup>. The disease is especially prevalent in rabbits which is reared in poor

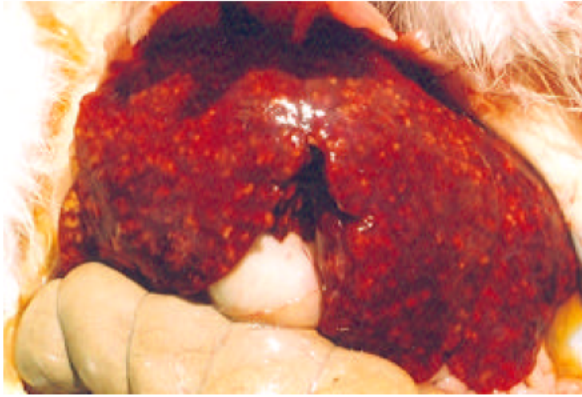


Fig. 1: The liver had multiple 1-3 mm diameter slightly raised white nodules throughout the parenchyma

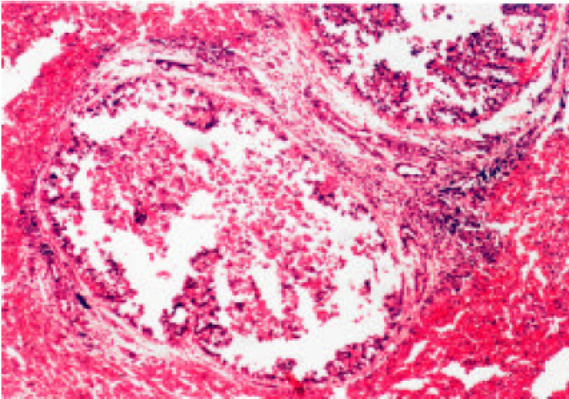


Fig. 2: Bile ducts were dilated and it's epithelium were hyperplastic and filled with various developmental stage of *Eimeria stidea*, H and E, x20.

hygienic conditions. *Eimeria stidea* infection can be diagnosed in feces, regarding to size, shape and structure. Oocysts must be differentiated from other *Eimeria* sp. A more definitive diagnosis is made through by postmortem examination. Although hepatic coccidiosis causes predisposition to other diseases, in the present cases, no other lesion were seen, most probably, due to acute nature of our cases. The disease causes significant decreases in weight gain, fat-soluble vitamin metabolism and digestible energy<sup>[1,6,7]</sup>.

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