First report of hepatic cysticercosis in a rook (*Corvus frugilegus*) (Passerifomes, Corvidae)

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ABSTRACT. Cysticercosis is an infection with the larval (cysticercus) stage of *Taenia* spp. that it is seen as cysts in various human and animal tissues. In this study, pathologic findings of hepatic cysticercosis in a rook (*Corvus frugilegus*) is described. To our knowledge, there is no report on hepatic cysticercosis in rook and this study shows that rooks may play a role as intermediate hosts in the transmission of parasitic infections.

Key words: hepatic cysticercosis, gross and histopathological findings, rook (*Corvus frugilegus*), Iran

Introduction

The rook (*Corvus frugilegus*) is a member of the Corvidae family in the passerine order of birds. Rooks are migratory species, especially in the shortage of foods, so they can act like vectors for a wide range of microorganisms [1,2]. A very high incidence of *T. gondii* (18%) in rooks (*Corvus frugilegus*) has been recorded that the cysts of this protozoa were found in the heart, brain, sex organs, skeletal muscle and liver [3].

There are few studies about prevalence of parasites of rook (*Corvus frugilegus*) in Iran [2,4]. In this study for the first time, the pathologic findings of hepatic cysticercosis in a rook (*Corvus frugilegus*) is described.

Case report

In October 2012, liver of a rook (*Corvus frugilegus*) was referred to Department of Pathobiology, School of Veterinary Medicine, Shahrekord University, Iran because of multiple focal lesions. On gross examination, numerous white and cystic foci measuring 2 mm in size were observed throughout the affected liver (Fig. 1). For histopathological study, tissue samples were taken from the hepatic lesions and fixed in 10% neutral Fig. 1. Formalin fixed liver with small, white and cystic lesions. Fig. 2. Section of a cystic larva is surrounded by inflammatory cells and fibrous connective tissue (hematoxylin and eosin, ×10)
buffered formalin. They were processed and embedded in paraffin. Sections of 5 μm thickness were cut and stained with haematoxylin and eosin.

Histopathological examination of the affected liver revealed multiple focal granulomatous inflammation scattered throughout the liver. Sections of an unidentified *Taenia* species larva were observed in the central part of the lesions (Fig. 2–4). A large number of macrophages, giant cells and eosinophils (Fig. 3,5) were seen around the larval sections. These structures were surrounded with fibrous connective tissue.

**Discussion**

The metacestodes or larval stages of *Taenia* spp. tapeworms are the cause of cysticercosis in various farmed and wild animals and in humans. Adult tapeworms are found in the small intestine of carnivore definitive hosts such as humans, dogs, and wild canids [5]. On the basis of the gross and histopathological findings reported here, the liver lesions were diagnosed as hepatic cysticercosis. This finding due to larval stages of various *Taenia* spp. has been reported in man [6–8], monkey [9], cattle [10], sheep [11,12], goat [12], zebu [13], pig [14], rabbit [15], mouse [16], and rat [17,18].

To our knowledge, there is no report on hepatic cysticercosis in avian species including rook (*Corvus frugilegus*) in the world. For avian tapeworms, intermediate host may be an insect, crustacean, earthworm, slug, snail, or leech depending upon the species of tapeworm [19].

**Conclusions**

In this case based on pathological evidences, the mature parasite of the cysticercoid larva could not be identified. For the first time, this study shows that rooks (*Corvus frugilegus*) may play a role as intermediate hosts in the transmission of parasitic infections to other birds, animals or man and need further studies.

**References**


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