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Research Article

A Pathological Report on Rupture of Crop Associated with Parasitism in a Hill Prinia (Prinia superciliaris)

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Abstract

A hill prinia (*Prinia superciliaris)* bird was presented for necropsy examination to the Department of Veterinary Pathology, DGCN, COVAS Palampur in order to access the cause of death. A thorough and detailed examination of the carcass revealed parasitic ingluvitis along with roundworms leading to the rupture of crop. The roundworms were also recorded over the lungs and peritoneum accompanied with crop rupture due to heavy parasitism. The lungs exhibited profound pulmonary congestion and oedema. The round worms recovered during necropsy evaluation were collected in were identified as *Acuaria subula*. The histological investigation of lung section has uncovered the presence of intra-alveolar accumulation of eosinophilic edematous fluid along with fibrinous exudate.

Keywords: Hill Prinia; *Prinia superciliaris*; *Acuaria subula*; Ingluvitis

Introduction

Hill Prinia (*Prinia superciliaris)* is a species of small insectivorous birds belonging to passerine bird family *Cisticolidae* and are commonly found in China, India, Indonesia, Malaysia, Myanmar, Thailand and Vietnam [1]. These birds are found in open habitats including long grass or scrub, overgrown fields, forest edges and thereby spotted rarely. Hill Prinia has a large, fierce-eyed prinia along with a long, oft-cocked tail. *Acuaria subula* is a spirurid parasite belongs to family Acuriidae harboring under the cuticle/horny lining of the gizzard and other underlying muscles of many passerine (Alaudidae, Bombycillidae, Corvidae, Emberizidae, Fringillidae, Hirundinidae, Laniidae, Motacillidae, Muscicapidae, Passeridae, Sittidae, Sturnidae, Sylviidae and Turdidae) as well as from Columbiformes (Columbidae), Piciformes (Picidae), Apodiformes (Apodidae), Coraciiformes (Coraciidae) and hence also known as gizzard worm [2,3]. This roundworm has been recorded by Dujardin and Gendre from France and from various parts of the U.S.S.R. by Kurashvili [4,5]. *Acuaria subula* was reported from *Passer domesticus* in England and from *Hippolais icterina* and *Ficedula hypoleuca* in Poland. The third-stage larvae of *Acuaria subula* were found in desert locust, which serve as the natural intermediate host for this worm [6,7].

Materials and Methods

In the present report, a wild hill prinia bird (*Prinia superciliaris*) was brought to the Department of Veterinary Pathology for detailed necropsy examination (Figure 1). A thorough external examination of the bird was performed for any external injuries and presence ectoparasites, if any. The systemic examination of the internal organs of the bird has depicted the presence of numerous

creamish white coloured roundworms leading to the rupture of crop i.e. parasitic ingluvitis. The roundworms have entangled the adjacent areas of lungs as well as has covered the entire abdominal cavity causing peritonitis (Figure 2 and 3). The lungs of the birds exhibited the presence of frothy exudate in association with diffuse areas of congestion. The roundworms retrieved during necropsy were gently removed, washed in normal saline solution, cleared with lactophenol and were sent to the Department of Veterinary Parasitology DGCN, COVAS Palampur for species identification by assessing the morphological and morphometric characteristics [8].

Figure 1: Hill Prinia (*Prinia superciliaris*) presented for detailed necropsy examination.

Figure 2: Parasitic ingluvitis associated with creamish white colored round worms leading to the rupture of crop and covering abdominal cavity.

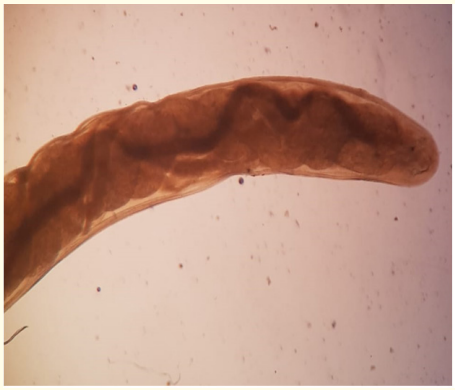

Figure 3: Microphotograph of *Acuaria subula* recovered from the crop of the bird.

Results and Discussion

The length and width of the roundworms was measured in millimeters (mm) and was expressed considering the mean ± standard deviation. These roundworms were identified as *Acuaria subula* (Figure 4). *Acuaria subula* have four cordons, arise dorsally and ventrally between triangular pseudolabia each bearing single amphid and a pair of papillae, extending laterally in longitudinal direction to posterior end of muscular oesophagus. Each cordon consists of two longitudinal rows of cuticular plates delimiting longitudinal canal situated between them and these cuticular plates have uniform shape, posterior rim of each plate overlapping anterior part of adjacent posterior plate [3].

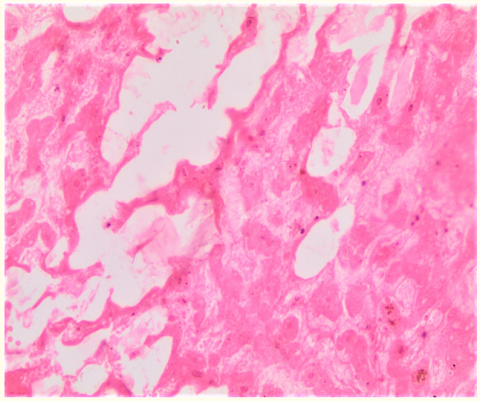

Figure 4: Lung tissue showing intra-alveolar accumulation of eosinophilic oedematous fluid. H&Ex 200.

Representative 0.5 cm thick lung tissue sections were collected in 10% neutral buffered formalin (NBF). The preserved tissue sections were dehydrated with ascending grades of alcohol, cleared in xylene, impregnated in molten paraffin, sectioned into 5 micron thickness with the help of microtome and stained with routine Haematoxylin and Eosin stain (H&E) stain as per the standard protocol [9]. The microscopic lesions were recorded and micro photographed. Histopathological examination of lung tissue sections revealed intra-alveolar accumulation of eosinophilic edematous fluid along with fibrinous exudate (Figure). The present investigation puts into record a case of hill prinia bird succumbed to death due to traumatic shock associated with parasitic ingluvitis.

Conclusion

The wild birds are wandering in close vicinity to human population and domestic animals and often poses a threat of transmission of infections. Hence, the need of the hour is to develop a multipronged approach to limit the chain of spill over infection to domestic animals/birds and human beings.

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