Detection of *Diplotriaena* spp. from the body cavity of Myna (*Acridotheres tristis*) in Mashhad, Iran

Hassan Borji1, Jamshid Razmyar2

1 – Ferdowsi University of Mashhad, School of Veterinary Medicine, Department of Pathobiology, P.O. Box 9177948974, Iran.

2 – Ferdowsi University of Mashhad, School of Veterinary Medicine, Department of Clinical Science, Iran.

Correspondence: Tel. 0098-511-8788944, Fax 0098-511-8763852, E-mail hborji@um.ac.ir

Abstract. A 3 year-old common Myna (*Acridotheres tristis*) was presented for autopsy to Veterinary Teaching Hospital, School of Veterinary Medicine, Ferdowsi University of Mashhad. The history presented by the owner revealed that the bird was caged alone; its diet consisted of commercial chicken layer’s pellets, fruits and vegetables. There was not any history of any diseases before that owner found her dead in the floor of its cage in the morning. Necropsy was done and revealed no gross pathological changes in visceral organs but in abdomen cavity we found few nematodes. The nematodes that were collected in this case were identified as *Diplotriaena* spp. The nematodes measured 10-15 mm x 0.75-0.80 mm, were milky white; the body was long and slender, mouth simple without lips. A pair of chitinous tridents (0.145-0.155 mm) was noted at the head end of the worm. Eggs were oval, thick shelled, smooth measuring 50 x 25 μm and embryonated. It is the first time in Iran when this nematode was recovered from a Myna.

Keywords: *Diplotrma* spp.; *Acridotheres tristis*; Mashhad.

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Introduction

The Common Myna (*Acridotheres tristis*) is a member of family Sturnidae (starlings and mynas) native to Asia. An omnivorous open woodland bird with a strong territorial instinct, the Myna has adapted extremely well to urban environments. The Common Myna is readily identified by the brown body, black hooded head and the bare yellow patch behind the eye. The bill and legs are bright yellow. The myna has been introduced in many other parts of the world and its distribution range is on the increase. The mynas are commonly called as “Farmer’s Friend” because they eat insects that destroy crop plants. They are susceptible to many diseases including helminthic infections. Of these, arthropod borne helminthic infections are common because they eat insects which the helminth parasites use as their intermediate host.

Case History

A 3 year-old common Myna (*Acridotheres tristis*) was presented for autopsy to Veterinary
Teaching Hospital, School of Veterinary Medicine, Ferdowsi University of Mashhad. The history presented by the owner revealed that the bird was caged alone; its diet consisted of commercial chicken layer's pellets, fruits and vegetables. There was no history of any diseases before the owner found her dead on the floor of its cage in the morning. Necropsy was done and revealed no gross pathological changes in visceral organs but in abdomen cavity we found few nematodes. The worms were fixed in 10% buffered formalin and submitted to the Parasitology Section of the Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, for identification. The nematodes were cleared immediately and identified up to genus level as per (Yamaguti, 1961).

Result

The nematodes that were collected in this case were identified as *Diplotriaena* spp. based on the trident and other characteristic features. The nematodes measured 10-15 mm x 0.75-0.80 mm, were milky white; the body was long and slender, mouth simple without lips. A pair of chitinous tridents (0.145–0.155 mm) was noted at the head end of the worm (figure 1). Eggs were oval, thick shelled, smooth measuring 50 x 25 μm and embryonated. As we have found female worms only; we could not identify species of these worms exactly.

Discussion

*Diplotriaena* is large nematode belonging to the family *Diplotriaenidae*, which occurs in the thoracic and abdominal air sacs of various species of Passeriformes (Anderson, 1992; Macwhirter, 1994), Psittiformes, Anseriformes and Falconiformes (Keymer, 1982). Earlier reports stated that they are also found in body cavities, but these are thought to be erroneous and may well have been due to postmortem migration (Anderson, 1992).

The distribution of these worms is reported to be worldwide. Occurrence had earlier been reported in house sparrows, crows, thrushes and grackles in North America, and Java sparrows in England and India (Keymer, 1982). Different species were also reported from North, Central and West Africa (Canaris and Gardner, 2002). Macwhirter (1994) reported a low prevalence in most species of birds affected.

The life cycle of the worm involves insects ingesting the worm eggs which contains an infective third-stage larva, which then emerges and undergoes complex migration through the small intestine, liver, posterior vena cava, heart, pulmonary arteries, lungs and finally the thoracic and abdominal air sacs (Young et al., 1998).

Hamerton (as reported by Keymer, 1982), stated that *Diplotriaena* was pathogenic in birds with pneumonia and lung consolidation. Other studies reported ‘fits’ and sudden death in birds due to microfilariae plugging the cerebral capillaries (Keymer, 1982). Bockheim and Congdon (2001) stated that nematodiasis, including *Diplotriaena* species infection, can cause central nervous system disturbance, diarrhea, marked weight loss and loss of appetite. Diagnosis in live birds, using blood smears, have given variable results (Keymer, 1982) owing to periodicity exhibited by microfilariae, but at necropsy, the presence of worms in the air sacs or thoracic and abdominal cavities has diagnostic value.

This finding of this report is important, considering the proximity of Mynas to the other birds that may well facilitate dissemination of
infection to other wildlife and bird species within the area.

Further work is therefore necessary to identify the *Diplotriaena* species present in Khorasan province and other area of country, and to investigate the presence/absence of these nematodes in a variety of other wild and domesticated animals that may be affected by diplotriaeniasis.

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References