



Postmortem Observations of Coccidiosis and Feather Mite infestation in a Mauve Black Mask Lovebird

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Abstract

Psittaciformes order comprises of various types of birds among which, a variety of Lovebirds have established their status as a common household exotic pet bird in many countries. The managerial aspects hold significant importance to promote and maintain their health. These birds are not native to India and can suffer from a wide range of diseases. Lovebirds are available in different varieties which include Lutino Peach-faced Lovebird, Mauve Black Mask Lovebird, Fischer's Lovebird etc. One Mauve Black Mask Lovebird had collapsed suddenly at a seller's place, and the carcass was subjected to detailed Postmortem Examination (PME). The cause of death was adjudged as severe coccidiosis based on gross pathology and microscopic examination of fecal material. The bird was also found to have severe feather mite infestation. The present paper highlights different PME observations indicating a need for evaluation of such diseases in pet Mauve Black Mask Lovebirds and all other varieties of Lovebirds.

Keywords: Lovebird, Coccidiosis, Feather mites, PME

Introduction

Birds of the Psittaciformes order contribute to a significant portion of the exotic pet bird trade throughout the world. This order has remarkable number of bird genera which includes colorful and attractive birds like Macaws, African Grey Parrot, Conures, Lovebirds, Budgerigars etc. Out of all Psittacine birds, Lovebirds of different varieties are available in exotic bird market such as Fischer's Lovebird, Lutino Peach-faced Lovebird, Mauve Black Mask Lovebird, Red-faced Lovebirds, Madagascar Lovebird, Black-

cheeked Lovebird, Masked Lovebirds etc. Captive breeding and sale of Lovebirds is also on the rise. Some of them are permitted for purchase and sale throughout the world while some has received protection under different legislations.

Lovebirds are attractive in terms of their appearance and behavior. In India, the cost of purchase of Lovebirds is apparently higher than Budgerigars and lower than big-sized Psittacine birds (e.g., Macaws). The maintenance of these birds as an indoor pet is less tedious but demands great care. Any lacuna in feeding, housing, cage-

cleaning, replacement of drinking water, deworming, health checkup, timely provision of food, travel/transport, cage enrichment, placement of cage, access to outdoor areas etc. can lead to devastating effects on the health of Lovebirds. Disease investigations in Lovebirds have not been explored much in India. Limited resources are available based on findings recorded in other countries. Some of the examples include *Toxoplasma gondii* infection (Cooper *et al.*, 2015); presence of *Cryptococcus neoformans* (Elhariri *et al.*, 2015); endoparasites such as *Ascaridia* spp., *Capillaria* spp., *Hymenolepis* spp., *Strongyloides* spp. and *Eimeria* spp. [Prathipa *et al.* (2013); Akram *et al.* (2018)] etc. The present paper describes PM observations in a Mauve Black Mask Lovebird which had died due to severe coccidiosis to generate a target-specific database for disease investigations in future.

Case History

An adult female Mauve Black Mask Lovebird was kept at a seller's place for sale for some days after arrival from a breeder near the end of monsoon season-2022 in Gujarat, India. The seller also kept Cockatiels, Budgerigars and Zebra Finches for sale which were in cage-to-cage contact with captive Lovebirds. The bird was neither vaccinated nor dewormed. After few days of stay, the bird suddenly started showing lethargy, dullness, depression, ruffled feathers, reduced feed intake, blood-mixed excreta, and inability to defend against attack by dominant cage-mates. The bird collapsed suddenly, and the carcass was brought to the Postgraduate Institute of Veterinary Education & Research (PGIVER), Kamdhenu University, Rajpur (Nava), Himmatnagar for PME.

Postmortem Observations

Grossly, the bird showed ruffled feathers and presence of reddish excreta on vent. Soiling of feathers around vent was evident. The carcass had poor condition as observed during examination of the keel bone/sternum [Figure-1(A)]. Injuries, abnormal discharge from orifices, swelling on any body parts etc. could not be observed upon gross examination.

Detailed examination of wings revealed presence of small debris-like spots around feather shaft in all wing feathers [Figure-1(B)]. These feathers were examined directly under stereoscopic microscope [Figure-1(C)] which revealed presence of feather mites (+++++) around feather shafts [Figure-1(D)]. Mites were collected, and permanent mounts were prepared to observe feather mites under microscope [Figure-1(E)].

Upon opening the carcass, the small and large intestines revealed presence of severe generalized hemorrhage, congestion with blood-mixed ingesta/excreta [Figure-1(F)] while the tract from oral cavity to gizzard did not show any pathological changes. The intestinal contents/excreta were collected for microscopic examination which revealed presence of Coccidia (+++++) [Figure-1(G)]. Other internal organs such as heart, lungs, liver, kidneys, muscles, trachea, and reproductive organs did not show any gross pathological changes. The cause of death was adjudged as Coccidiosis.

Discussion

Coccidiosis is one of the most common protozoan diseases affecting many indigenous and exotic birds. Orofecal transmission of coccidiosis is most common route of transmission among caged birds. The digestive tract is the most common target of coccidian protozoa. Birds with mild infestation may shed coccidia via excreta. Sometimes, coccidian protozoa are also found in clinically healthy birds, but they can cause severe clinical illness and mass mortality under stress conditions. Exotic birds can face stress conditions when there is a history of recent transportation, change in feed, change in water quality, change of place, environmental changes, attack by predators in cages placed in outdoor premises etc. The Mauve Black Mask Lovebird described in the present paper had also been found to have recent history of change of place, diet, water, other management practice and environment which could have been a factor for disease propagation and clinical illness.



Figure-1: (A) Sharp keel bone/sternum indicating poor body condition; (B) Small debris-like spots around feather shaft; (C) Examination of wings under stereoscopic microscope; (D) Feather mites around feather shaft; (E) Microscopic appearance of a feather mite; (F) Severe generalized hemorrhage, congestion, and blood-mixed ingesta/excreta in intestines; (G) Coccidia

Sellers often purchase stock of Lovebirds from breeders and keep them at their premises for shorter periods (*i.e.*, until sold). Regular health checkup and proper deworming or use of coccidiostats is not always ensured under such conditions. Hence, the birds which have been exposed to protozoa could possibly carry infection after being sold to owner. After selling, the bird again encounters changes in management and environment which could provide insidious pathogens to create clinical illness.

Under another scenario, the cages of Lovebirds when placed in outdoor premises can attract other free-living native birds (e.g., domestic pigeons, predatory birds like Shikra etc.) which are neither dewormed nor vaccinated against common diseases. Hence, caged Lovebirds could possibly get infection from fecal matter/excreta of such free-living visitor native birds.

Under third scenario, an infected but clinically healthy Lovebird may continuously shed *Coccidia* in excreta which can act as a source of infection in any weaker Lovebird inside the cage leading to clinical illness and death.

The Mauve Black Mask Lovebird reported in the present paper could have been infected in any of the above-mentioned scenario. Clinical signs such as lethargy, blood-mixed excreta, dullness, depression, reduced feed intake and inability to defend against attack by dominant cage-mates prior to death could be associated with coccidiosis. These findings indicate that coccidiosis could be a factor behind morbidity, reduced market value and mortality among caged Lovebirds. Hence, spread of disease and pathogenesis among captive Lovebird is also needed to be explored. Various drugs have been described for prophylactic and therapeutic management of coccidiosis in birds (e.g., amprolium, chlortetracycline, oxytetracycline etc.) which can be evaluated and used in Lovebirds in future.

On the other hand, feather mites are very common in native and exotic birds. They can cause clinical disorders when mites are higher in number, and

birds are under stress conditions or suffering from diseases. Clinical affliction may include ruffled feathers, mild to moderate feather loss, itching etc. The Mauve Black Mask Lovebird described in the present paper had severe feather mite infestation and ruffled feathers as clinical manifestation prior to death. These mites could have spread at place of breeding or at seller's place having other exotic pet birds such as Budgerigars, Cockatiels and Zebra Finches due to cage-to-cage contact. Feather abnormalities can affect the general health of Lovebird and reduced their market value. Hence, clinical impact of feather mites should be investigated in Lovebirds.

Conclusion

Postmortem observations in a Mauve Black Mask Lovebird died due to coccidiosis have been documented. Clinical signs prior to death and severe intestinal damage were consistent findings of coccidiosis. The present paper is probably the first report of feather mite infestation in a Mauve Black Mask Lovebird died due to coccidiosis in Gujarat, India. Similar investigations should be conducted on a larger scale involving a greater number of birds to assess existing prevalence of coccidiosis and feather mites.

Conflict of Interest & Ethical Statement

Authors declare no conflict of interest with special regards to funding. This literature does not promote illegal trade of birds. PME was carried out as per request from the concerned person.

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