subcutaneously. The tigress defaecated large amount of faecoliths the next day. The fluid, antibiotic and supportive therapy were continued daily for five days since she cooperated well in the squeeze cage with enema given at three-day interval. The tigress improved and relapsed intermittently. Finally, she died on 16.v.2006. The carcass weighed 110.5kg. On postmortem examination the muscles were atrophied with little congestion. Lungs were congested and compressed. Cardiac muscles were firm. Subcutaneous and pericardial fat was deep yellow. Liver was mildly firm. Gastric and intestinal contents were scanty with mucus. The histopathological examination of liver, kidney, heart, lungs, stomach and intestine did not reveal any significant changes. Hence, the death of the tigress was attributed to off-feed condition associated with senility.

In the present case the tigress was off-feed and might have suffered from adynamic ileus. The wound in the lumbar region healed due to dressing and specific antibiotic therapy. The exact cause of the ileus may be associated with senility. Administration of fluid, electrolyte, and antibiotic along with supported therapy resulted in temporary improvement until the condition relapsed. The colon which is a very distensible organ that stores faeces before elimination makes the course of the disease frequently long. The affected animals lose their appetite and die of starvation as happened in this case. Similar findings were observed in dogs and cats by Pass (1985).

Reference

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VET BRIEF ZOOS’ PRINT JOURNAL 22(12): 2951-2952

Prospective studies on prevalence of gastrointestinal parasites in zoo birds

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In spite of the better management in zoos, birds sometimes are under stress either due to the climatic changes, housing conditions or nutrition. In most zoos regular deworming programme is mandated by the Central Zoo Authority. This study was undertaken to know the prevalence of the parasitic infection to plan out effective preventive programme for specific parasites. It was conducted for a period of six months at Sayaji Baug Zoo, Vadodara. The zoo was visited every month and faecal droplets were collected in sample collection bottle from each cage of different bird groups. A total of 282 faecal samples were collected from 437 birds and examined.

Housing: Birds of each group were kept in separate cage under deep litter system. Each cage having water trough and feed trough. Deep litter material was changed every month and cages were daily cleaned early in the morning.

Feeding and watering schedule: Feeding was done through feed trough from 0830 to 0900hr and from 1430 to 1500hr daily. Feeds were separate for each group of birds.

Collection of faecal sample from zoo: About 5–20g of faeces of were collected from each cage of the aviary for screening for parasitic infection.

Storage and preservation of faecal sample: Faecal materials were kept separately in plastic collection bottles and stored in the laboratory refrigerator until examination.

Examination of faecal samples: Faecal samples were examined grossly for presence of gravid segments of cestodes immature and mature parasites, and later were processed for qualitative examination.

Qualitative examination: Fresh group droppings were processed by sedimentation technique in laboratory using the methods as described by Thienpont (1979) and Georgi (1985).

Results and Discussion: Several species of trematodes, cestodes and nematodes were found in free-living birds. Enumeration of all of them would be an arduous task of little practical value because most helminthes cause insignificant damage to the host. However, under certain conditions like stress, parasites may effect either the survival or reproduction of host populations especially in captivity.

In the present study, the overall prevalence of parasitic infection in various groups of birds is illustrated in Table 1.

Out of 282 faecal samples 101 samples were positive for parasitic load (35.86%). Among them Ascaridia spp. 30 (27.3%), Eimeria spp. 33 (30.83%), Capillaria spp. 9 (8.19%), Strongyleides spp. 4 (3.64%) and mixed infection in 15 (13.65%) infection was observed in most of the birds. The above observations substantiate the findings of Patel et al. (2000) of prevalence of Ascaris and Capillaria spp. as 20.75 % and 13.2 % along with 17.92 % prevalence of Eimeria spp. from faecal samples of pigeon group. They also recorded Ascaridia galli and Cotugnia digonopora from hariyal pigeon and Ascaridia galli from postmortem of parakeet, peacock and cockatiel.

Little research has been conducted on diseases and ailments affecting wild birds, and most of the investigational and diagnostic work has been carried out on an ad-hoc basis in response to a sudden large-scale mortality in a particular area (Abrey, 1993).

It has been observed from the present study that the over prevalence of parasitic load was found to be 35.81% in the zoo. The higher prevalence of parasites was found about 83.33% in group one of peafowl (Pavo cristatus), where as mixed infection of parasites was observed in the pigeon group; the Pheasant (Chrysolophus spp.) group did not reveal any parasitic load. Most of the birds revealed prevalence of Ascaridia spp., Eimeria spp., Strongyleides spp. and Capillaria spp. alone or mixed.

References


Acknowledgement: We are thankful to the staff of zoos and Veterinary College for their support and help.
**Table 1. Prevalence of parasitic infection in zoo birds**

<table>
<thead>
<tr>
<th>Groups of Birds</th>
<th>Scientific name</th>
<th>No. of Group Sample Examined</th>
<th>No.of Birds</th>
<th>No.of Positive</th>
<th>Percent Positive</th>
<th>Identification of egg/oocyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Peafowl</td>
<td>Pavo cristatus</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>83.33</td>
<td>Ascaridia spp. (2), Mixed infection of Ascaridia spp. and Capillaria spp. (3)</td>
</tr>
<tr>
<td>2. Parakeets</td>
<td>Psittacus spp.</td>
<td>42</td>
<td>80</td>
<td>13</td>
<td>30.95</td>
<td>Eimeria spp. (8), Ascaridia (3), Strongyloides spp. (1), Mixed Strongyloides spp. and Eimeria spp. (1)</td>
</tr>
<tr>
<td>4. Pheasant</td>
<td>Chrysolophus spp.</td>
<td>24</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>Ascaridia spp. (4), Eimeria spp. (9), Capillaria spp. (1), Strongyloides spp. (1), Mixed - Eimeria spp. And Ascaridia spp. (1)</td>
</tr>
<tr>
<td>5. Lory</td>
<td>Pistaciiformes spp.</td>
<td>36</td>
<td>65</td>
<td>16</td>
<td>44.44</td>
<td>—</td>
</tr>
<tr>
<td>6. Love birds</td>
<td>Agoporins spp.</td>
<td>6</td>
<td>19</td>
<td>3</td>
<td>50.00</td>
<td>Capillaria spp. (1), Ascaridia spp. (1), Strongyloides spp. (1)</td>
</tr>
<tr>
<td>7. Duck</td>
<td>Todona spp.</td>
<td>12</td>
<td>7</td>
<td>3</td>
<td>25.00</td>
<td>Ascaridia spp. (2), Eimeria spp. (1)</td>
</tr>
<tr>
<td>8. Cockatoos</td>
<td>Cacatoe spp.</td>
<td>18</td>
<td>5</td>
<td>3</td>
<td>16.66</td>
<td>Eimeria spp. (1), Capillaria spp. (2)</td>
</tr>
<tr>
<td>9. Rossella</td>
<td>Platycerus spp.</td>
<td>12</td>
<td>2</td>
<td>4</td>
<td>33.33</td>
<td>Ascaridia spp. (3), Strongyloides spp. (1)</td>
</tr>
<tr>
<td>10. Macaw</td>
<td>Ara spp.</td>
<td>18</td>
<td>3</td>
<td>7</td>
<td>38.88</td>
<td>Ascaridia spp. (4), Eimeria spp. (3)</td>
</tr>
<tr>
<td>11. Dove</td>
<td>Oeopelia spp.</td>
<td>12</td>
<td>18-3</td>
<td>25.00</td>
<td>—</td>
<td>Capillaria spp. (2), Eimeria spp. (1)</td>
</tr>
<tr>
<td>12. Emu</td>
<td>Dromicineis spp.</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>14. Koel</td>
<td>Endynoms spp.</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Eimeria spp. (3), Ascaridia spp. (1)</td>
</tr>
<tr>
<td>15. Indian Pied Hornbill</td>
<td>Phoehicooterus spp.</td>
<td>1 2</td>
<td>4</td>
<td>4</td>
<td>33.33</td>
<td>Capillaria spp. (1) and Ascaridia spp. (1)</td>
</tr>
<tr>
<td>16. Flamingo</td>
<td>Mynphrinos spp.</td>
<td>12</td>
<td>17</td>
<td>1</td>
<td>8.33</td>
<td>Ascaridia spp. (1)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>282</strong></td>
<td><strong>437</strong></td>
<td><strong>101</strong></td>
<td><strong>35.81</strong></td>
</tr>
</tbody>
</table>

Note: Number in parentheses indicates the number of positive samples

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**Endoparasitic infection of Spotted Deer Axis axis in Puducherry**

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**VET BRIEF**

**ZOOS’ PRINT JOURNAL 22(12): 2952**

For **Trichostrongyulus** spp egg and one stag was positive for **Trichostrongyulus** and **Capillaria** spp eggs. The parasitic eggs were identified based on its morphology described by Soulsby (1982). Perusal of literature revealed that helminths of captive Spotted Deer in India are scanty.

Ramasamy & Arora (1991) recorded prevalence of **Mullerius capillaris** in free ranging Spotted Deer in India. Mckenzie & Davidson (1989) reported **Trichostrongyulus axei**, **Cooperia punctata**, **Haemonchus contortus** and **Capillaria bovis** infected Axis Deer in island of Molokai, Hawaii. Our results are in agreement with the findings of Mckenzie & Davidson (1989). Identification of ova of these potentially dangerous parasites suggested that moderate infection of Spotted Deer had occurred.

**References**


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