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CASE REPORT

Small-intestinal cryptosporidiosis in a young pigeon

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SUMMARY

Small-intestinal cryptosporidiosis in a 10-day-old pet pigeon is described. Clinically, the pigeon was depressed and inactive, its feathers were ruffled, and had faecal material adhering to feathers around its vent. Gross lesions were seen only in the intestinal tract and consisted of mild hyperaemic segments of small intestine distended with typical green watery ingesta. Histologically, organisms of the Cryptosporidium spp. were found in the villi of lower portions of the small intestine which were atrophic and misshapen. Spontaneously occurring intestinal cryptosporidiosis has not been previously reported in pigeons.

Cryptosporidium spp. are small protozoan parasites that inhabit the microvillous brush border of the mucosal epithelium of a variety of vertebrates, including humans (Goodwin, 1989; Fayer et al., 1990). After the first report of intestinal cryptosporidiosis in turkeys by Slavin (1955), who believed that Cryptosporidium sp. were responsible for their diarrhoea and death, intestinal cryptosporidiosis in chickens (Goodwin, 1988; Goodwin & Brown, 1989), turkeys (Goodwin et al., 1988; Wages & Ficken, 1989), quails (Hoerr et al., 1986), a budgerigar and a cockatiel (Goodwin & Krabill, 1989) have also been reported recently.

This is the first case report which presents the findings of small-intestinal cryptosporidiosis in pigeons.

A 10-day-old pet pigeon was submitted to the Department of Pathology, Faculty of Veterinary Medicine, University of Ankara, by the owner who requested that it be necropsied and a diagnosis sought. Clinically, the pigeon was depressed, emaciated and inactive, its feathers were ruffled, and it had faecal material adhering to feathers around its vent. At necropsy, the pigeon was cachectic, its crop was enlarged and contained thick feed, and gross lesions were seen only in the intestinal tract and consisted of mild hyperaemic segments of small intestine distended with typical green watery ingesta. Organ portions were collected in 10% neutral buffered formalin, processed through alcohols and xylene, embedded in paraffin, sectioned at 5 to 6 μm, and stained with haema-
Microscopically, the villi in the lower portions of the small intestine were atrophic and misshapen. In these areas small (1 to 4 μm) basophilic bodies were also present in the apical portions of enterocytes (Figure 1). The appearance of basophilic bodies under light microscope was definitive for Cryptosporidium sp. They were also stained dark blue with Giemsa. The lamina propria was infiltrated with sheets of heterophils, macrophages, lymphocytes and plasma cells. Crypts were enlarged and contained inflammatory cells with sloughed epithelial cells, but without basophilic bodies.

On microbiological examination, Escherichia coli was isolated from the intestine.

Avian intestinal cryptosporidiosis have been documented for parrots (Doster et al., 1979), turkeys (Slavin, 1955; Goodwin et al., 1988; Wages & Ficken, 1989), chickens (Goodwin, 1988; Goodwin & Brown, 1989), geese (Proctor & Kemp, 1974), quails (Hoerr et al., 1986), a budgerigar and a cockatiel (Goodwin & Krabill, 1989). In these reports, the age of the affected animals were 4 to 25 days old, and increased mortality, lethargy, body weight loss and diarrhoea were the most common clinical signs. Gross lesions included hyperaemia of the intestine, excessive intestinal intraluminal fluid and gas. In addition to the presence of Cryptosporidium, the most common microscopical lesions were enterocyte detachment, small intestinal villus atrophy, crypt hypertrophy, microvillus atrophy or...
hypoplasia, and infiltration of the lamina propria by mononuclear cells. In these reports, Cryptosporidium spp. were incriminated as being the causative agent of illness, whether or not they were associated with other agents.

In the present report, the affected pigeon was 10 days old and the observed clinical signs, gross and microscopic lesions were similar to those described in the cases above. Although we think that Cryptosporidium sp. was responsible for the diarrhoea and death of this pigeon, the role of this parasite was not certain in the pathogenesis of the diarrhoea. However, the possibility that E. coli might have played some role in the illness of this pigeon cannot be excluded. Therefore, further investigations are necessary to establish the relationship between cryptosporidiosis and the other infectious agents in pigeons. In the future, cryptosporidiosis should be included as a differential diagnosis for diarrhoea, weight loss and death in pigeons, and isolation and specification of Cryptosporidium spp. should be attempted and reported.

REFERENCES


RESUME

Cryptosporidiose de l'intestin grêle chez un pigeonneau

Une cryptosporidiose intestinale est décrite chez un pigeonneau de dix jours, qui présentait de l'abattement, des plumes ébouriffées et souillées par les fécès au niveau du cloaque. Les lésions macroscopiques n'ont été observées que dans le tractus digestif et consistaient en segments peu hypérémiques de l'intestin grêle, remplis d'ingestats de couleur verte typique. Histologiquement, Cryptosporidium sp. a été mis en évidence dans les villosités de la partie distale de l'intestin grêle qui étaient atrophiées et déformées. Une cryptosporidiose intestinale spontanée n'avait pas été encore décrite chez les pigeonneaux.
ZUSAMMENFASSUNG

Dünndarm-kryptosporidiose bei einer jungtaube


RESUMEN

Criptosporidiosis del intestino delgado en un palomo

Se describe un caso de criptosporidiosis en el intestino delgado de una palomo de 10 días de edad. Los síntomas clínicos observados fueron depresión e inactividad, plumas erizadas y material fecal adherido a las plumas alrededor de la cloaca. Solo se observaron lesiones macroscópicas en el aparato digestivo y consistían en segmentos hiperémicos del intestino delgado distendido por una ingesta típicamente verde y acuosa. Se encontraron histológicamente Cryptosporidium sp. en las vellosidades de las porciones inferiores de intestino delgado que se encontraban atrofiadas y con pérdida de su morfología normal. La criptosporidiosis espontánea en palomas no había sido descrita previamente.