FIVE TOUCANS FOUND DEAD WITH GASTROINTESTINAL PARASITISM.

A. Berrocal
Histopatovet www.histopatovet.com A.P. 904-3000 Heredia, Costa Rica

INTRODUCTION:

Toucans and toucanets (Family Ramphastidae, order Pisiforms) are widely distributed in the neotropics from south Mexico to northern Argentina. Wildlife animals living freely and in captivity play an important role in the epidemiology of several diseases. There are few studies related to gastrointestinal parasites of non-domestic birds and all of them are based on fecal examination. To our knowledge this is the first pathological and parasitological report of gastrointestinal lesions caused by nematodes in toucans.

RESULTS:

Cases: The five captive toucans were from a wildlife rescue center. Four were brought together with a history of 11 out 54 dying suddenly. In three, a complete necropsy was performed. In the fourth case, parenchymal organ sections (2.0 to 2.50 cms) including intestine were submitted. Three months later, another toucan cadaver was sent to necropsy.

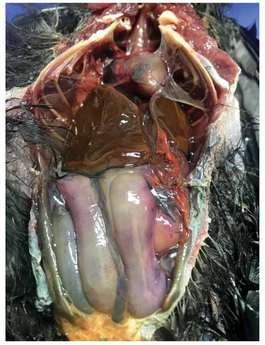

Fig.1. Gross aspect. Dilated intestine showing serosa redness serosal areas.

Signalment: There were 4 Ramphastos sulfuratus and one R. swansoni. All reported as adults, with 2 females, 2 males and one gender not reported.

PATHOLOGICA FINDINGS: Macroscopic: In general, the intestinal tract was dilated with watery content and yellow to reddish mucosa. Fig.1.

In one case, two mucosal scrapings were submitted for parasitological analysis, and reported as Capillaria sp. Additionally, in other case the proventriculus and ventriculus have free parasites which were also send to parasitology and classified as Cheilospirura hamulosa. Fig.2

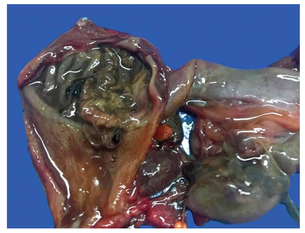

Fig.2. The gizzard had a brown color. In the watery contents several free parasites are presents.

Histopathology: In the five toucans the intestinal lumen showed intestinal material mixed with free transversal and longitudinal sections of nematodes. These parasites were also on the upper and inside the intestinal mucosa associated with mixed inflammatory cells. Fig.3. Moreover, they were also present deep in the mucosa forming nest with few

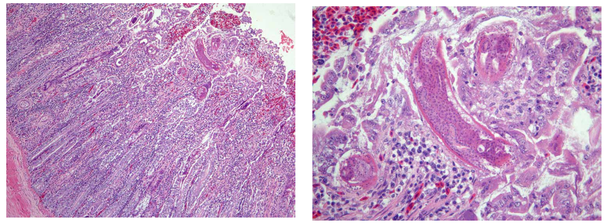

Fig. 3-A. In the upper, but also inside the intestinal mucosa several transversal and longitudinal parasites sections are present. Fig.3-B. A close-up. Observe the inflammatory reaction mainly with lymphocytes and histiocytes.

inflammatory reactions. Fig.4 In three cases, mucosal necrosis of proventriculus and gizzard was also present. In one of them, nematodes (Cheilospirura hamulosa) invade the mucosa and

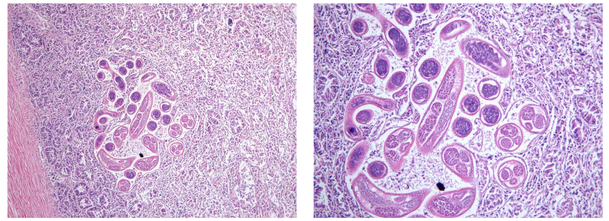

Fig.4-A. In the deep intestinal mucosa, a nest of nematodes- Fig.4-B. A detail with longitudinal and transversal portions with a morphology compatible with Capillaria sp.

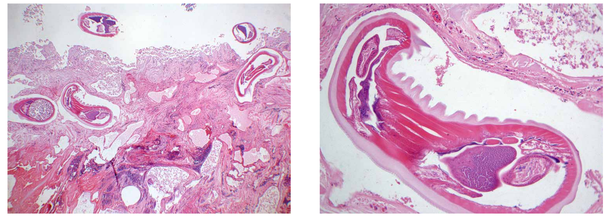

Fig.5-A. Debris material from gizzard mucosa with three longitudinal parasites sections showing the characteristic cuticular nematodes morphology. Fig. 5-B. A microscopic detail with the cuticular described in nematodes.

muscular layer admixed with an inflammatory response. Fig.5

DISCUSION AND CONCLUSION:

Regarding parasites of wild life living birds, the majority of cases reported in the literature are based on fecal samples and not on free parasites as the two cases reported here (Sprenger,L.K), despite the fact that parasitic species found in this paper have already been reported in the literature, specially Capillaria sp which has been considered as the most important cause of death in Brazil (Cubas, Z.S.). Regarding, C. hamulosa all the cases are mainly reported in Galliformes, chickens, turkeys, etc., however, no one had described them in the ventriculus (gizzard) of toucans. Moreover, the intestinal histopathological changes associated with this parasite had not been reported previously.

Recomended References:

-Cubas, Z.S. Toucans: Husbandry and Medicine. World Small Animal Association World Congress, Proceedings, 2009.

-Menezes, R.C. et.al. Pathology and frequency of Cheilospirura hamulosa (Nematoda, Acuarioidea) in Galliformes Hosts. Avian Pathology (2003) 32,151-156

-Sprenger,L.K. et.al. Occrrence of Gastrointestinal parasites in wild animals in State of Paraná, Brazil. Annals of the Brazilian Academy of Sciences (2018) 90(1): 231-238

Presented at American College Veterinary Pathology Meeting. November 9-13, 2019 San Antonio, Texas.