

Case Report

Cecum associated with Histomoniasis in Van province, Turkey

Abstract

Histomonas meleagridis, an effective protozoon of the disease known as "Karabaş Hastalığı" in our country, is located in Monocercomonadidae family in Trichomonadida order. This parasite, which has a cosmopolitan spread in the world, is manifesting deaths of up to 100% in young turkeys. It is also found in chickens, partridge, quail, duck, pheasant and Guinea fowl. A cecum of a 60-day old American bronze turkey was sent to our laboratory for examination from a local turkey carer in Van. In the macroscopic examination, it was seen that there were thickened cecal wall. Giemsa stained smears were prepared from these focal and examined microscopically. As a result of the examination, several flagellated form ranging from 8 to 15 µm were detected. Histomoniasis was diagnosed by considering the anemnesis obtained from the owner, thickened wall detected in the cecum and flagellated forms seen in the microscopic examination.

Keywords: *Histomonas meleagridis*, Van, turkey

Introduction

Histomonas meleagridis (Trichomonadida order / Monocercomonadidae family) is an anaerobic protozoan parasite usually characterized by or amoeboid forms. *Histomonas meleagridis* is transmitted either directly via droppings of infected birds or indirectly through histomonad-carrying cecal worms *Heterakis gallinarum* or earthworms. Parasite causes high morbidity and mortality in turkeys and the disease is manifested by with yellow-colored fibrinous inflammation and by yellow necrotic areas in the liver [1,6].

Clinically the symptoms include depression, reduced appetite, poor growth, sagging wings and tail, sulphur-yellowish diarrhea, stagnation, ruffled feathers. The head may become cyanotic [5].

The diagnosis of disease depend mainly on clinical symptoms, typical necrotic lesions in the liver, histopathological examinations, presence of 1 or 4 flagella forms of parasites. Moreover, in recent years, molecular diagnosis methods (such as PCR) have been used to diagnose the disease in order to contribute to the epidemiology of the disease [7].

In Turkey, there is no large-scale studies on the prevalence of the disease. It is generally reported as sporadic incidents. In this case report, histomoniasis diagnosed on a 60-day old American bronze turkey was reported [4].

Presentation of Case

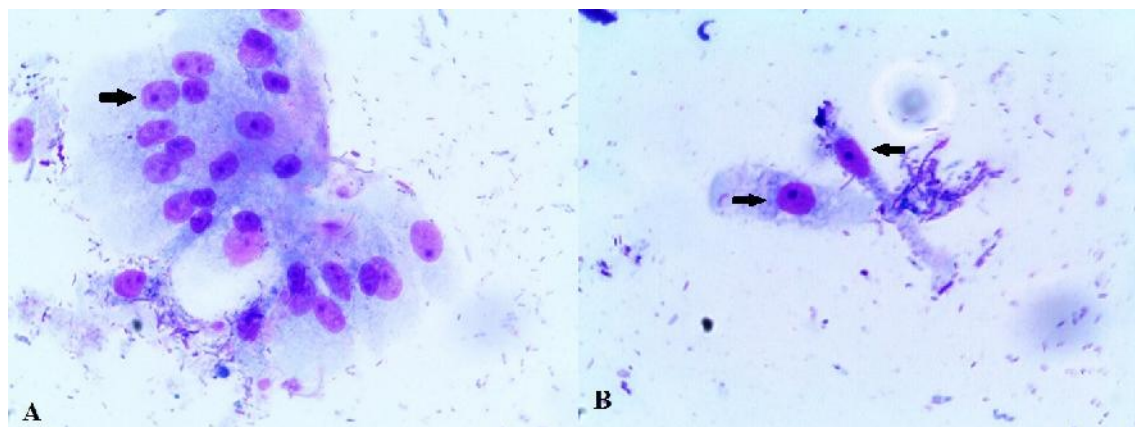
In June 2018, a 60-day old American bronze turkey was brought into laboratory of the Department of Microbiology of the Department of Veterinary Medicine, Van Yüzüncü Yıl University. After the necropsy, cecum was observed in a swollen state. The typical important lesions associated with Histomoniasis are thickened cecal wall filled with dark yellowish fibrinous content (fig.1). To confirm the diagnosis smears from cecum stain with Giemsa showing a typical feature known as flagellated form of parasite as showing in fig. 2.



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41 **Fig. 1. Showing enlargement of cecum**

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44 **Fig. 2. Giemsa staining from smear of cecum, flagellated form A and B black arrow**

45 **Discussion and Conclusion**

46 The flagellated protozoan, *Histomonas meleagridis* causes histomoniasis associated with high
 47 mortality in turkeys while chickens have been considered to be less affected. Chicken and wild birds
 48 can be reservoir of *Histomonas meleagridis*. Vectors like the worm *Heterakis gallinarum* and

49 earthworm may infect the parasites [2]. Diagnosis is made by clinical signs, post mortem lesions,
50 fresh caecal smears, histopathology, immunohistochemistry and PCR [10].

51 Old turkeys and young turkeys should not be kept together to prevent of this disease. In addition,
52 separate breeding of turkeys with chickens have been great importance in protection and control. It is
53 reported that *Heterakis gallinarum* eggs are spread by chickens as the most important infection
54 source of the disease [3].

55 In Turkey, there are not extensive investigation about histomoniasis diagnosis, epidemiology and
56 economic loss. Native examination and Giemsa staining analyses have diagnosed three 4-month-old
57 American bronze turkey [8]. Karaman et al. [9] also diagnosed on 35 turkeys with histomoniasis by
58 histopathological and molecular methods (PZR). Utuk and Piskin [10] reported
59 that histomoniasis was diagnosed by histopathological and microscopic examination in a 50-day old
60 American bronze turkey.

61 This study shows the possibility to detect *Histomonas meleagridis* in a 60-day old American bronze
62 turkey: some unusual cases should be discussed in more detail in order to prevent and improve the
63 control of the disease.

64 References

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