



Acute Megabacteriosis and Staphylococcosis of Canary in Iran

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ABSTRACT

Megabacteriosis and staphylococcosis are two important Infectious Diseases in Canary. Macrorhabdosis is a chronic progressively debilitating, gastrointestinal disease. Staphylococcus infections are common in poultry. Clinical signs are highly variable and dependent on site-organisms. Present case report describes the Megabacteriosis and staphylococcosis in canary. A dead canary was referred to the clinic of veterinary medicine, university of Tehran, Iran That was lethargic and had watery white droppings for 4 days. The proventriculus was dilated and erosive lesions were seen. In wet smear prepared from proventriculus, Macrorhabdus ornithogaster was observed by light microscope. A purulent mass was detected in metatarsal joint, the gram staining of suspected mass determined the bird suffered from staphylococcosis. Prescribed drugs for Megabacteriosis and Staphylococcosis were nystatin and enrofloxacin respectively.

Key words: Megabacteriosis, Staphylococcosis, Canary, Iran.

INTRODUCTION

Canaries are kept as pet bird and belong to small passerine. They are also kept in pairs or in flock and can live about 6 to 16 years. A significant trait of canary's diseases is that the sick bird did not show signs until the end stage of disease. Infectious and nutritional diseases, housing and stress are important diseases in canary. Gonzalez (2007) and Helgar (2001) noted that Sternostomosis, Megabacteriosis and staphylococcosis are the important Infectious Diseases in Canary. Macrorhabdosis is widespread and affected a variety of birds. Infection in pet and birds ranged from serious disease with high mortality to asymptomatic carriers. Macrorhabdosis is a chronic progressively debilitating, gastrointestinal disease characterized by emaciation, prostration, anorexia, cachexia, and death. Proventriculus enlarged in Macrorhabdosis disease because the proventricular wall was thickened and moderate to marked lymphoplasmacytic and heterophilic inflammation of the proventriculus and ventriculus (Hungerford et al., 1998; Kunkle, 2003). Andreasen (2013) expressed that Staphylococcus infections are common in poultry and clinical signs are highly variable which dependent on site-organisms.

The most common sites for these organisms are the bones, tendon sheaths and joints, especially the tibiotarsal and stifle joints. Present study reports an infected canary with Macrorhabdus ornithogaster and

staphylococcus referred to the clinic of veterinary medicine.

CASE REPORT

Carcass of an adult canary was referred to the clinic of veterinary medicine, university of Tehran, Iran. According to the history, the flock had 150 canaries and their diet included of different seeds. They were kept in cage (40×45×112 cm). One of canaries had depression, lethargy, respiratory distress and watery white droppings for 4 days and finally died. At the post mortem examination, the bird had poor Body Condition Score (BCS: 2/5) and the body weight was about 16.5 gr. Feathers around the vent were stained by urate. A proliferative and erythematous mass (6×6 mm) was seen in the cranial part of the left tars. In abdominal cavity, a spherical yellow capsulated mass (2×2 mm) was seen on the surface of the mesentery attached to the gizzard. Also a purulent mass was seen in metatarsal joint. The samples were staining with gram and gram-positive cocci were observed under a light microscope also they were cultured in blood agar that within 24 hours circular, smooth, 1-3 mm in diameter and β-hemolytic colonies were observed.

In addition, biochemical tests were performed to confirm Staphylococcus aureus that they include coagulase positive, catalase positive, fermentative for

glucose and manitol, and gelatinase positive which indicated the masses caused by staphylococcus aureus. The spleen was fragile and Reddish-brown color. Adrenal glands were bigger than normal size. The proventriculus was dilated. Also erosion and mucus were visible on the surface of proventriculus. Wet smear samples were prepared and observed under a light microscope. The observation of samples indicated some long rod- shape organisms that were *Macrorhabdus ornithogaster*. The small intestine was dilated due to accumulation of black mucosa.

DISCUSSION

In present study the bird suffered from *Macrorhabdus ornithogaster* and *Staphylococcus*. The *Macrorhabdus ornithogaster* infection confirmed based on microscopic examination of proventriculus, case history and the post mortem examination. Also the bird suffered from staphylococosis in metatarsal joint which was determined by gram staining and culturing the bacteria and also additional biochemical tests was performed for confirmation the bacteria. *Staphylococcus aureus* was most often involved in outbreaks of septicemia, with or without *Megabacterium* (Devriese et al., 1994). *Staphylococcus aureus* and *Megabacterium* infections can complicate the picture of disease. Megabacteriosis caused by *Megabacterium* (*Macrorhabdus ornithogaster*) and colonized in the isthmus between the proventriculus and ventriculus in budgerigars and canaries (Van Herck et al, 1984). Jamesk (1999) expressed that it is not clear whether *Macrorhabdus ornithogaster* is classified in bacteria or fungi. Helgar (2001) reported inflammatory reaction, erosion and ulcer in proventriculus caused by Megabacteriosis were observed. Jamesk (1999) and Marlier et al. (2006) reported in acute form the bird seems to be normal but depression and lethargy occurs suddenly. 12-24 hours after observing the clinical signs the bird may be found dead and some signs like regurgitation and severe blood loss can be seen (Devriese et al., 1994). In the chronic form, the bird is chachectic and the body condition is poor. Currently some signs like depression, diarrhea, vomiting were observed in chronic form (Helgar, 2001; Kunkle, 2003). Jamesk (1999) and Kunkle (2003) reported that the major mechanism of *Megabacterium* is increasing the PH of the proventriculus which resulted in the destruction of the koilin layer. A method for treatment of Megabacteriosis infection is adding vinegar, acetic acid and citric acid to drinking water. Jamesk (1999) expressed that feed additives like *Lactobacillus acidophilus* can be used in this disease. Anti fungal drug such as amphotericin B and nystatin are also effective in treatment and prevention of this disease

(Hungerford et al., 1998; Jamesk, 1999; Kheirandis et al., 2011; Kunkle, 2003).

REFERENCES

- Andreasen CB, (2013). Staphylococosis. In: Swayne, F (de) Disease of poultry. 13thed, PP: 971. ISBN 978-0-470-95899-5.
- Devriese LA , de Herdt P, Desmidt M, Dom P, Ducatelle R, Godard C, Haesebrouck F and Uytendaele E, (1994). Pathogenic staphylococci and staphylococcal infections in canaries, *Avian Pathology*, 23 (1); 159-162.
- Gonzalez H, (2007). Diagnostic challenge. *Journal of exotic pet medicine*, 6 (4): 270-277.
- Helgar G, (2001). Megabacteriosis. *Seminars in Avian and Exotic pet Medicine*, 10(1): 12-19.
- Hungerford LL, Campbell CL and Smith AR, (1998). *Veterinary Mycology Laboratory Manual*. Iowa State University Press, Ames, IA. 1-75.
- Jamesk M, (1999). Gastrointestinal Disease of Psittacine Bird. *Seminars in Avian and Exotic Pet Medicine*, 8(2): 66-74.
- Kheirandish R and Salehi M, (2011). Megabacteriosis in Budgerigar: Diagnosis and treatment. *Comparative clinical pathology*. 20:501-505.
- Kunkle RA, (2003). Fungal diseases. In: *Diseases of Poultry*, 11th ed. pp: 883-902. ISBN 0813828902.
- Marlier D, Leroy C, Sturbois M, Delleur V, Poulipoulis A and Vindevogel H, (2006). Increasing incidence of megabacteriosis in canaries (*Serinus canarius domesticus*). *The veterinary Journal*, 172: 549-552.
- Van Herck H, Duijser T, Zwart P, Dorrestein GM, Buttelaar M And Van Der Hage MH, (1984). A bacterial proventriculitis in canaries (*Serinus canaria*). *Avian Pathology*, 13: 561-572.