PASTEURELLOSIS IN AN UMBRELLA WINGED COCKATOO

Daly C.D[1]., Suvaneeth P[2]., Nair N.D[3]., Mammen J.A[4]. and Indu K[5].

[1,5]Assistant professor, Department of Veterinary Pathology

[2]PhD scholar, Department of Veterinary Pathology

[3]Professor and Head, Department of Veterinary Pathology

[4]Associate Professor, Department of Veterinary Pathology

College of Veterinary and Animal Sciences, KVASU, Mannuthy, Thrissur 680651, Kerala.

Received: 30-05-2014, Accepted: 14-06-2014

ABSTRACT

Pasteurellosis in an Umbrella winged cockatoo was recorded. Grossly pulmonary congestion, epicardial haemorrhage, focal areas of necrosis on liver, catarrhal enteritis and renal congestion were observed. Histopathology revealed focal epicardial haemorrhage in heart, marked congestion of blood vessels in lungs, focal hepatitis and central venous congestion in liver, infiltration of heterophils to lamina propria and fusion of villi in intestine, and desquamation of tubular epithelial cells in kidneys were observed. The disease was confirmed as pasteurellosis by bacteriological isolation.

Keywords: Pasteurellosis, histopathology, Umbrella winged cockatoo

INTRODUCTION

Avian pasteurellosis or fowl cholera is a contagious disease affecting domesticated and wild birds. It usually appears as a septicaemic disease resulting in high morbidity and mortality (Parveen *et al.*, 2003). Most reported outbreaks of avian pasteurellosis affected chicken, turkeys, ducks or geese. However, this disease also affects other types of poultry, game birds raised in captivity, companion birds, birds in zoos and wild birds. The wide range of avian hosts in which avian pasteurellosis has been reported suggests that all types of birds are susceptible (Glisson *et al.*, 2003). Although there were many reports on the occurrence of pasteurellosis in domestic birds, only a few reports were available on occurence of pasteurellosis in cockatoos. Here we report a case of pasteurellosis in an Umbrella winged cockatoo.

MATERIALS AND METHODS

A one year old Umbrella winged cockatoo was presented for post mortem examination to Department of Pathology, College of Veterinary and Animal Sciences, Mannuthy. The clinical history taken from the owner revealed that the bird showed droopiness and decreased feed intake for the last two days.

The detailed necropsy was carried out. Samples of liver and heart were collected for bacteriological investigation. The tissues were sheared with a hot blade and a sterile loop was rubbed across the cut surface. The loops were then inoculated to blood agar and Mac Conkey agar and incubated for 24 hours aerobically at 37^0c. Representative tissue samples were collected and fixed in 10% neutral buffered formalin and processed as per routine protocols (Luna, 1968). Sections of 4µ thickness were cut and stained using routine haematoxylin and eosin technique (Bancroft and Gamble, 2008). Blood smears were also prepared from heart blood.

RESULTS & DISCUSSION

Examination of Leishmann's stained heart blood smears revealed bipolar organisms. Culture in blood agar yielded dew drop,

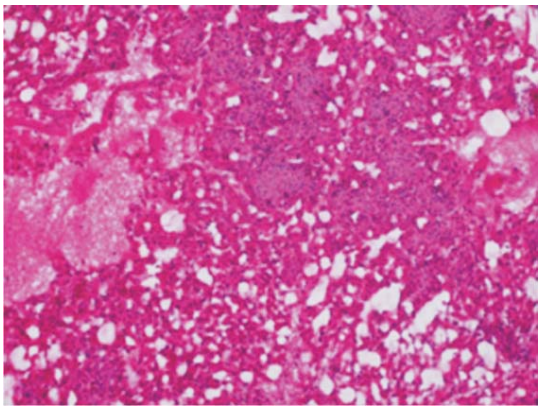

Fig.1: Lung marked congestion of vessels, interalveolar hemorrhage & oedema (H&E X400)

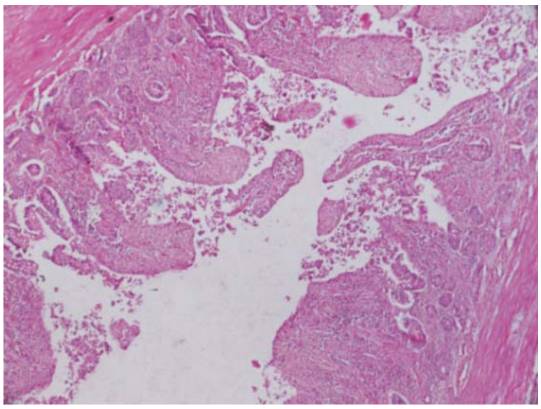

Fig.2 Intestine fusion of villi, desquamation of villi epithelial cells ((H&E X 100)

mucoid, non haemolytic colonies. No growth was found on Mac conkey agar. Gram stained smears of colonies revealed gram negative bacteria which was confirmed as *Pasteurell*a *multocida* based on biochemical tests. (Carter, 1984).

Grossly pulmonary congestion, epicardial haemorrhage, focal areas of necrosis on liver, catarrhal enteritis and renal congestion were observed. These gross changes were in accordance with observations of Williams *et al*. (1986), Sood and Verma (2006) and Pramod *et al.* (2011).

Histological examination of heart revealed focal epicardial haemorrhages and myocardial degeneration, lungs revealed marked congestion of blood vessels, interalveolar hemorrhage and oedema (Fig.1). In the liver, central venous congestion, extensive sinusoidal congestion, focal infiltration of heterophils and kupffer cell hyperplasia were observed. Intestine revealed enteritis characterized by infiltration of lamina propria by heterophils, goblet cell hyperplasia, fusion of villi, degeneration and desquamation of villi epithelial cells (Fig.2). Kidneys revealed hemorrhages, congestion of blood vessels and desquamation of tubular epithelial cells. The histological changes observed in the present study were in accordance with observations of Sood and Verma (2006), Pramod *et al.* (2011) and Pathak *et al.* (2011). From these observations we can conclude that gross and histological changes in cockatoo with pasteurellosis are almost similar to that observed in the cases of chicken and ducks.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the staff members and colleagues of Department of Veterinary Pathology, College of Veterinary and Animal Sciences, Mannuthy for their valuable supports.

REFERENCES

Bancroft, J.D. and Gamble, M. (2008). *Theory and Practice of Histological Techniques.* 6th edn. Churchill Livingstone, United States of America. p 725.

Carter, G.R. (1984) *Diagnostic procedures in veterinary Bacteriology and Mycology.* 4th edn. Springfield, Illinois, pp 11-121.

Glisson, J. R., Hofacre, C.L. and Christensen, J. P. (2003). Pasteurellosis and other related bacterial infections. In: *Diseases of poultry*. Eds: Saif, Y.M., Barnes, H.J., Glisson, J.R., Fadly, A.M., McDougald, L.R., Swayne, D.E. 11th edn. Iowa State Press, Ames. pp. 657-671

Luna, L.G. (1968). *Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology*. 3rd edn. McGraw Hill Book Company, New York. p 207.

Parveen, Z., Nasir, A., Tasneem, K. and Shah, A. (2003). Fowl cholera in a breeder flock. *Pakistan Vet. J.*, **23**:209-210

Pathak, N., Goswami, S., Sharma, R.K., Phangcho, C.V. and Mukit, A. (2011). Pathology of experimental Pasteurellosis in domestic duck. *Indian J.Vet.Pathol*., **35**:94-96.

Pramod. S, Nair N.D., Litty, M., Ambilly, V.R., Vijayan, N. and Lalithakunjamma, C.R. (2011). Pathological observations in experimental Pasteurellosis in Kuttanad ducks. *Indian J.Vet.Pathol*., **35**:189-192.

Sood, S. and Verma, P.C. (2006). Pathology of *Pasteurella multocida* infection in chickens. *Indian J.Anim.Res*., **40**:15-19.

Williams ,E.S., Runde, D.E., Mills, K. and Holler, L.D. (1986). Avian cholera in a Gyrfalcon. *Avian Dis*., **31**:380-38.

■