

MEGABACTERIOSIS IN A ZEBRA FINCH (*Poephila guttata*) (CASE 1168.1)

CASE HISTORY

Female adult zebra finch (*Poephila guttata*) found dead on the ground. Had been noted to be lethargic the day before.

GROSS PATHOLOGY

External findings: Small numbers of lice are scattered throughout the plumage.

Hydration: good, Muscle mass: good, Fat deposits: good

Internal findings: No significant findings.

HISTOPATHOLOGY

Lesions are not evident within the following tissues: oesophagus, brain, myocardium, skeletal muscle, small intestine, pancreas, ovary, kidney

Lung: The pulmonary parenchyma is markedly congested. Small dust granulomas are scattered throughout the atrial interstitium.

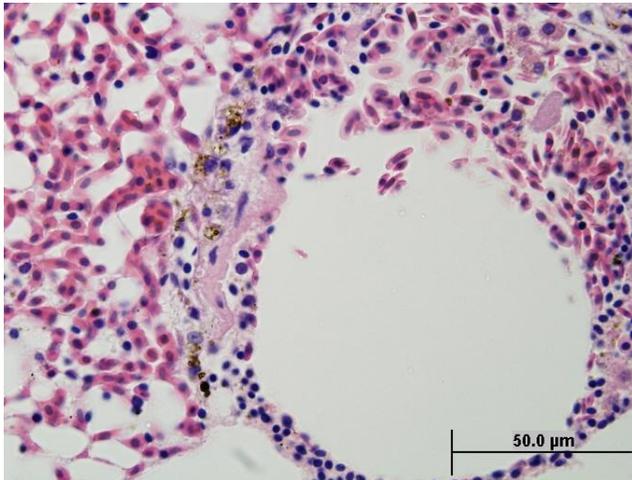


Fig 1. Lung, dust granulomas. H&E

Liver: The hepatic parenchyma is segmentally autolytic. Single cell necrosis of hepatocytes has produced a 'moth-eaten' appearance to the tissue.

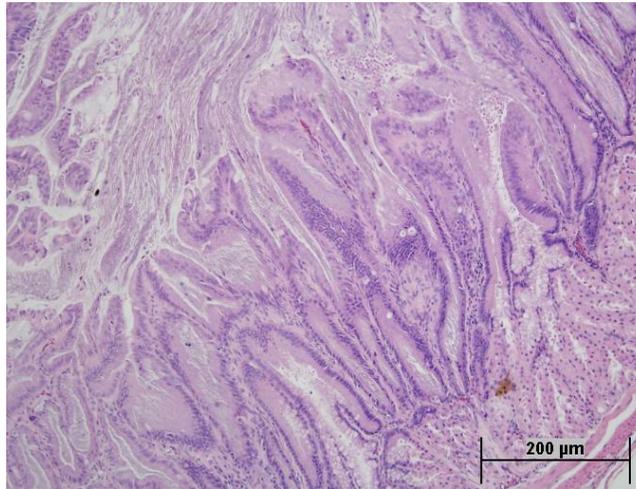


Fig 2 Proventriculus H&E 40x

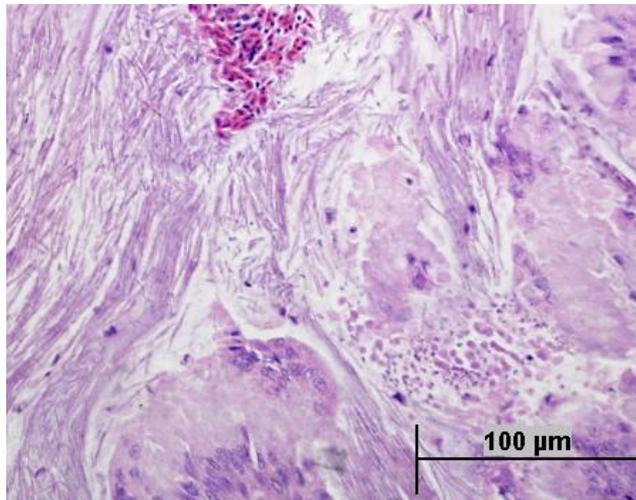


Fig 3 Proventriculus H&E 100x

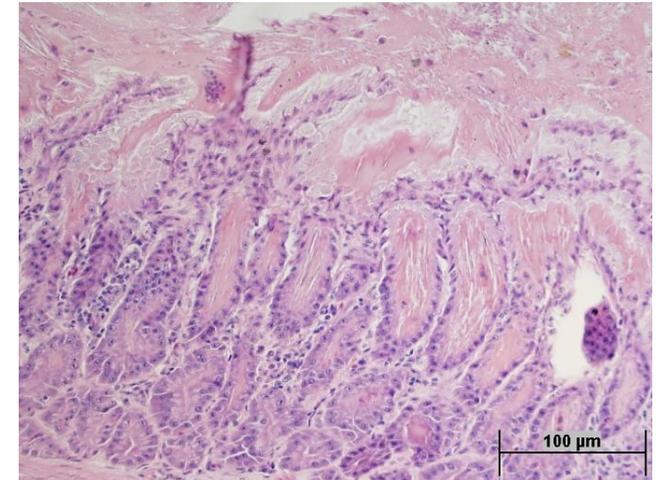


Fig 4. Ventriculus (gizzard), mucosa and koilin lining. H&E 40x

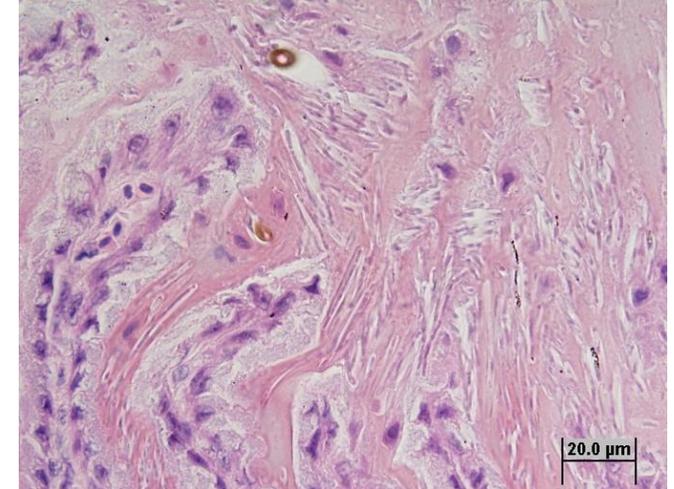


Fig 5. Ventriculus, mucosa and koilin lining. H&E 100x

Task 1. Describe the sections provided. What is the likely identity of the organism visible in these? How would you identify it with more confidence?

Proventriculus / Ventriculus: The proventricular glands are distended with large numbers of large, filamentous, septate organisms. The intestinal lumen also contains many of these organisms and abundant sloughed epithelial cells. These organisms are also evident within the deep aspect of the ventricular crypts along the proventricular/ventricular junction. The organisms are multifocally evident within the koilin layer and superficial epithelium throughout the ventriculus (Figs 2-5).

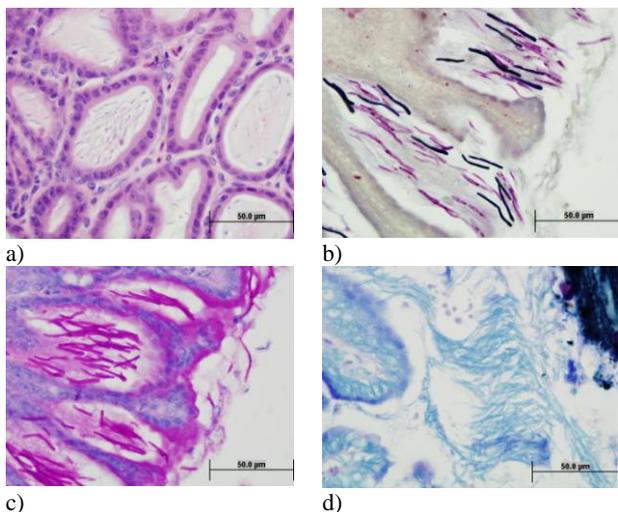


Fig 6. Staining characteristics of Megabacteria. a) H&E; b) Brown and Brenn's Gram's (BB), c) Periodic acid Schiff (PAS), d) Zeihl Neilsen (ZN).

MORPHOLOGICAL DIAGNOSIS

Ectoparasitism - lice

Extensive proventricular and ventricular megabacteriosis

COMMENTS

The bird was suffering from extensive gastric megabacteriosis. The diagnosis was confirmed through the application of special stains to recut sections of the proventriculus. Megabacteria stain positively with Gram's and PAS stains (Fig 6).

Megabacteria are often associated with chronic weight loss in psittacines. This bird was in good body condition, thus, the significance of this finding is uncertain. The sloughing of epithelial cells into the proventricular lumen and ventricula koilin layer suggests that the infection may have resulted in increased cell turnover or cell death.

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