

Fungi and wildlife: the case of avian aspergillosis

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INTRODUCTION

Avian aspergillosis is a fungal disease caused predominantly by *Aspergillus fumigatus*, affecting the respiratory system of birds [1]. It occurs in both wild and domesticated avian species, often leading to significant health and conservation concerns. The disease typically arises from the inhalation of fungal spores, which proliferate in damp or poorly ventilated environments, such as contaminated feed, litter, or nesting material [2]. Clinically, aspergillosis manifests in acute or chronic forms. Acute cases are common in young or immunocompromised birds, presenting with respiratory distress, lethargy, and sudden death [1]. Chronic aspergillosis, frequently seen in adult birds, leads to granuloma formation in the air sacs and lungs, causing progressive respiratory issues, anorexia, and weight loss. Diagnosis relies on clinical signs, imaging, fungal cultures, or histopathology [2].

MATERIAL AND METHODS

This study aims to describe the epidemiology, macroscopic, histological and microbiological lesions from wild birds during *postmortem* exams. Samples were collected for histology and Sabouraud agar.

CONCLUSIONS

This work shows that aspergillosis is an important disease that causes mortality in wild birds, particularly during the recovery process of rehabilitation of these animals in the recovery centres. This work shows that still often the part of mycological identification is overlooked during the necropsy, the diagnosis is based only on the macroscopic diagnosis. Avian aspergillosis remains a critical issue in veterinary medicine and wildlife conservation, requiring continued research for improved diagnostic and therapeutic approaches.

RESULTS

The necropsy and histological examination established the aspergillosis diagnostic in 10 animals examined over 7 years. The main species affected was *Buteo búteo* (Table 1). Macroscopic alterations in the animals with aspergillosis were varied. All animals presented thickened air sacs with abundant caseous and necrotic debris and greyish-green fungal colonies and nodules in the air sacs and lungs. One animal presented dissemination to the bone and muscle. The main lesions observed were on the lungs and air sacs as expected.

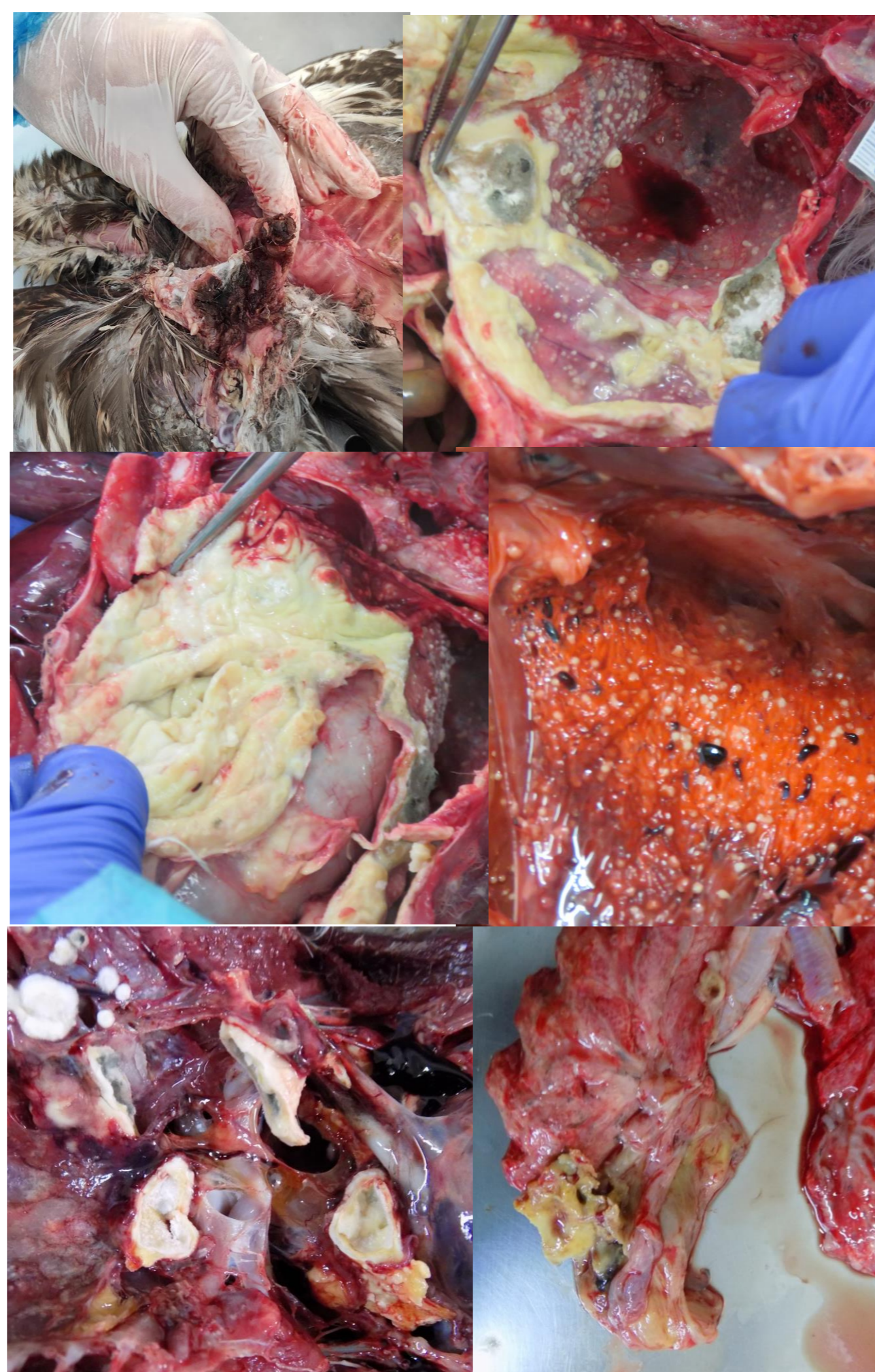


Figure 1: Macroscopic lesion on bone, lungs and air sac.

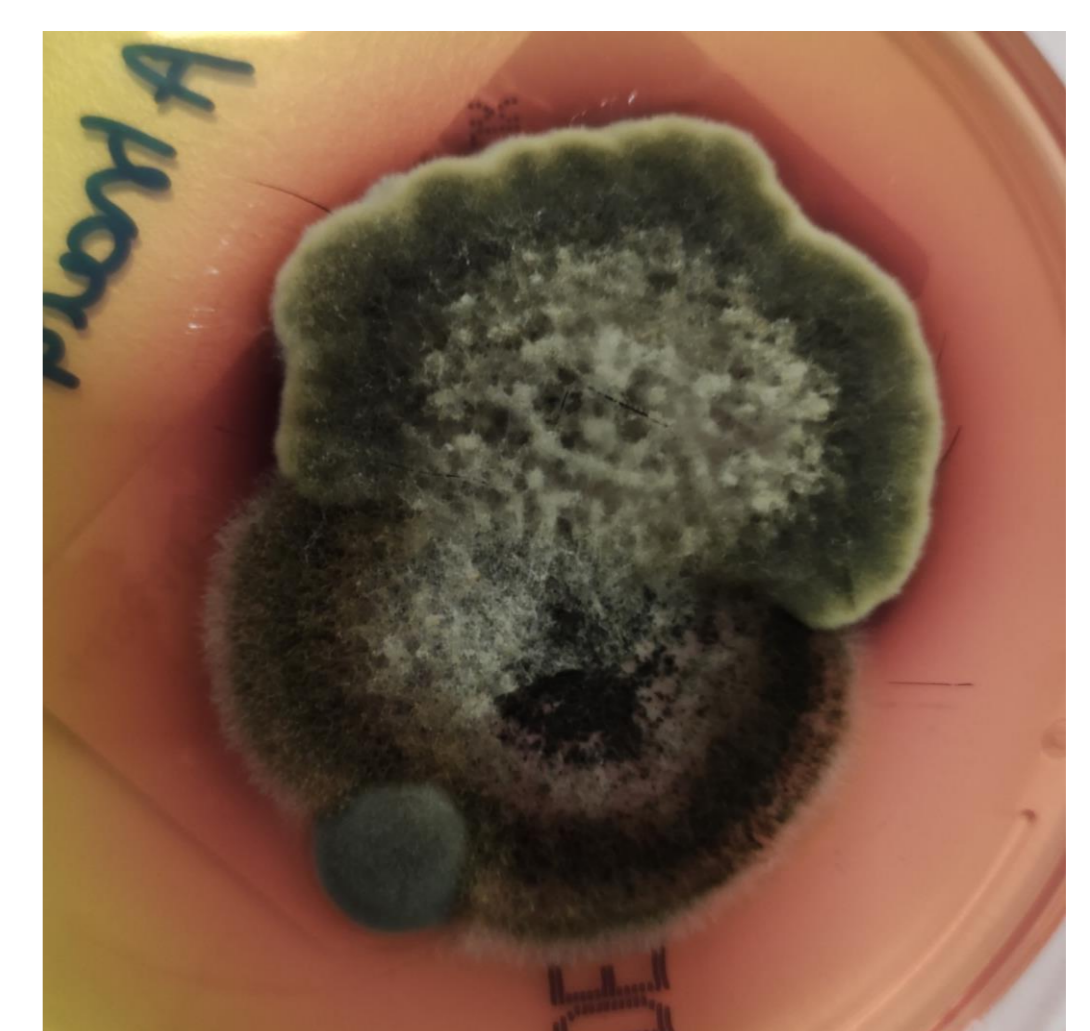


Figure 2: *Aspergillus* spp culture in Sabouraud agar.

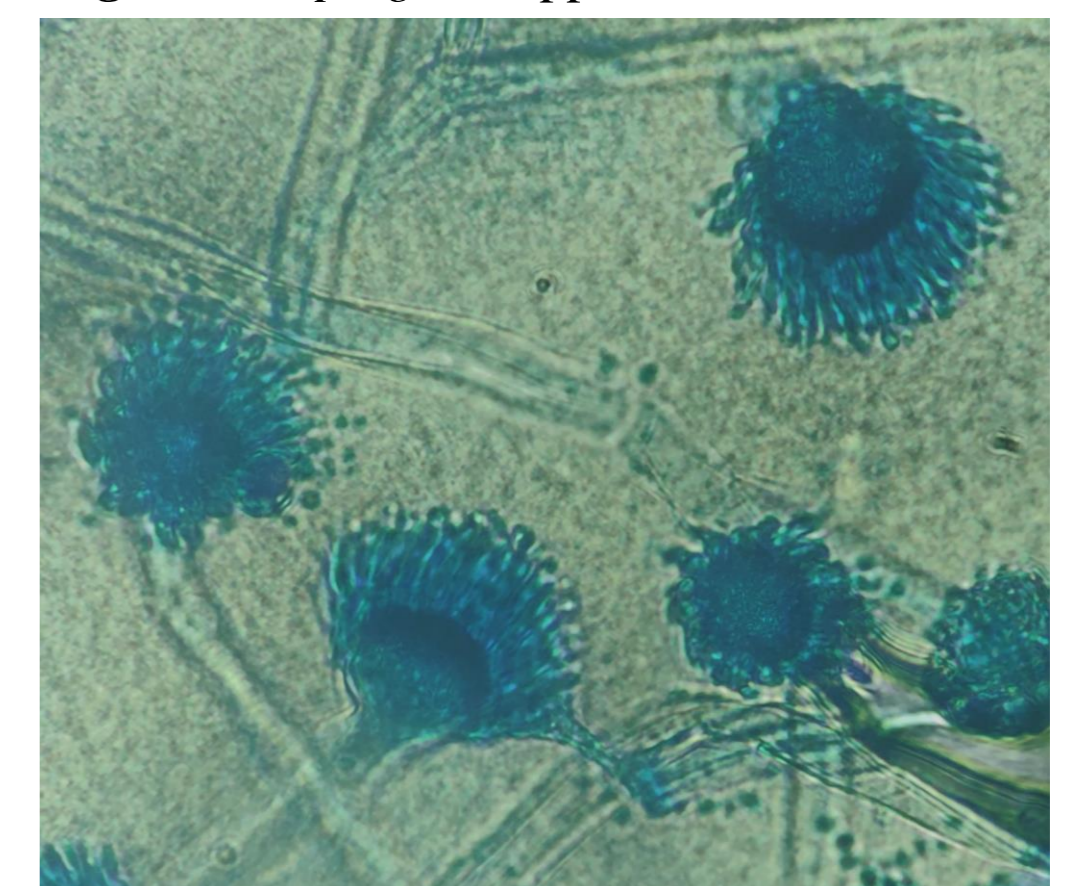


Figure 3: *Aspergillus fumigatus*.

Table 1: Species affected and anatomical localization (L-lung, AS –air sac, B-bone)

Specie	N ^a animal	Location
<i>Tyto alba</i>	1	L, AS
<i>Athenea noctua</i>	1	L, AS
<i>Acipiter nisus</i>	1	L, AS
<i>Gypsus fulvus</i>	1	L, AS
<i>Buteo bute</i>	3	L, AS, B
<i>Larus fuscus</i> ,	1	AS
<i>Phalacrocorax carbo</i>	1	AS
<i>Circaetus gallicus</i>	1	L, AS



References

1. Beernaert, LA et al (2010) Aspergillus infections in birds: a review, Avian Pathology, 39:5, 325-331; 2. Della Vedova, R et al. (2019) Aspergillosis in domestic and wild birds from Argentina; Universidade de Sao Paulo; Brazilian Journal of Veterinary Research and Animal Science; 56; 2; 3. Xavier, MO et al. (2007) Aspergillosis: a limiting factor during recovery of captive magellanic penguins. Braz. J. Microbiol. vol.38, n.3 pp.480-484