

Short Communication

Fungal Granulomas in Black Chicken (Kadakhnath)

Y. Ravikumar¹*, K. Sandhyarani¹, P. Purushotham² and M. Lakshman¹

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Abstract

Fungal granulomas (Systemic mycoses) were caused by *Aspergillus* spp and diagnosed in Kadakhnath chickens of 5-week age. Clinically, birds showed respiratory distress with illness, stunted growth and reduced body weight. The gross lesions included yellowish white nodules of varied sizes in lung, thoracic air sacs, proventriculus, liver and heart. Cultural examination on Sabouraud Dextrose Agar (SDA) revealed fungal growth in the culture plates and staining with lactophenol cotton blue (LPCB) revealed the presence of *Aspergillus* spp., spores and hyphae.

Key Words: Fungal granulomas, Kadakhnath, *Aspergillus* spp, Cultural examination.

Introduction

Mycosis is a fungal infection of animals, including humans. A variety of environmental and physiological conditions can contribute to the development of fungal diseases. Inhalation of fungal spores or localized colonization of the skin may initiate persistent infections; therefore, mycoses often start in the lungs or on the skin. Aspergillosis is an infectious, non-contagious fungal disease caused by *Aspergillus* species in wild and domestic birds characterized by primary involvement of lower respiratory system (Saif et al., 2008). It's a common mis managemental problem and predisposing factors are immunocompromised host and exposure to overwhelming spores (Reddy et.al., 2020). Mycosis of poultry, mainly affects the lung, but may spread to other visceral organs results in to systemic mycosis (Sawale et al., 2012 and Aparna et. al., 2020). Disease mainly occurs due to inhalation of fungal spores from litter and feed (Oglesbee, 1997). *Aspergillus fumigatus* (*A. fumigatus*) is one of the most common causes of fungal granuloma (mycosis) in chickens and poults (Kunkle, 2003 and Pascal et al., 2011). The present communication reports the fungal granulomas in kadakhnath (Black chicken).

¹Department of Veterinary Pathology, College of Veterinary Science, PVNRTVU, Hyderabad-500030, India

²Department of Veterinary Microbiology, College of Veterinary Science, PVNRTVU, Hyderabad-500030, India

Materials And Methods

History revealed that there was illness, stunted growth and reduced body weight in few birds of 5 weeks age group. The farm size was 1000. The carcasses were presented for disease diagnosis. The birds were examined and collected suspected samples for further investigation. Lungs were severely affected and suspected of fungal infection due to presence of granulomas. Apart from lungs, these granulomas were also identified in proventriculus, liver and heart. The tissue samples were subjected to fungal culture for confirmation of fungal growth on Sabouraud Dextrose Agar (SDA) in the Department of Veterinary Pathology, College of Veterinary Science, Hyderabad as per the standard protocols. This fungal growth was subjected to cultural examination and staining with lactophenol cotton blue (LPCB).

Results and Discussion

Grossly, the lesions observed were multiple yellowish white coloured nodules of varied size (1-3 cm in diameter) in lung, thoracic air sacs, proventriculus, liver and heart (Fig.1 and 2). On cut section of these granulomas greyish white caseous material was observed. Sabouraud Dextrose Agar (SDA) is a selective medium primarily used for the isolation of fungi from suspected lung tissue. The culture plates were streaked with specimen and incubated at 25 – 30°C in an inverted position (agar side up) with increased humidity and examined after one week for the growth of fungus. After one-week, fungal growth was observed in the culture plates (Fig.3) and the growth was subjected to lactophenol cotton blue (LPCB) staining and found the presence of *Aspergillus* sps., spores and hyphae (Fig. 4). The findings of present study were in accordance with the results of Sawale et al. (2012) and Aparna et.al. (2020).



Fig.1: Multiple grey to white coloured nodules of varied size in the thoracic cavity.



Fig.2: Granulomas over lungs, proventriculus, liver and heart.



Fig.3: Fungal growth was observed on Sabouraud Dextrose Agar (SDA) from suspected lung tissue.

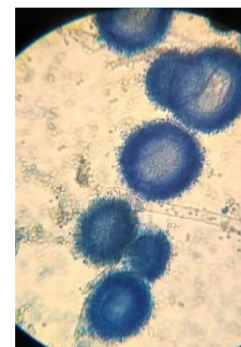


Fig.4: Lactophenol cotton blue (LPCB) staining revealed the presence of *Aspergillus* sps., spores and hyphae (Original magnification x100).

Conclusion

In conclusion, the present case was diagnosed as fungal granulomas caused by *Aspergillus* spp. in kadaknath (Black chicken) by gross lesions like nodules in thoracic cavity, heart; cultural examination for fungal growth and fungal staining for identification of the presence of *Aspergillus* spp., spores and hyphae.

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