6th Proceedings of the Seminar on Veterinary Sciences, 11 – 14 January 2011: 124-125

Comparison between Two Staining Techniques using Cellular Reactions of Trombiculid Mites Lesion

Marlia Zulkapli, [1]Shaik Mohamed Amin Babjee & [2]Tengku Azmi Tengku Ibrahim

[1]Department of Veterinary Pathology and Microbiology
[2]Department of Veterinary Preclincal Sciences
Faculty of Veterinary Medicine, Universiti Putra Malaysia

Abstract

The larval stage of trombiculid mites are parasitic and cause skin lesions in many species of vertebrates including man. The nymphs and adults are found on the ground and are not parasitic. In Malaysia, poultry kept under free range system are commonly infested with trombiculid mites. The clinical sign shown include hyperkeratosis and swelling of the epidermis. Sixteen Red Jungle fowls with typical lesions of trombiculid mites were brought in for postmortem in this study. The gross lesions observed were hyperkeratosis and edematous swelling of the skin. The lesions can be classified into two, which are active and regressing lesions. Skin samples were taken from each bird for histopathology study. Two fixatives were used which were; 10% Normal Buffered Formalin and Helly's fluid and stained with two different stains, namely Hematoxylin and Eosin (H&E) and Giemsa stains. The comparison was done based on the anatomical changes in skin tissue sections and the visibility of cellular reaction between these two fixatives and stains. Eight hundred and thirty-one lesions were found on all ventral body areas of the 16 birds examined. The number of lesions per bird ranged from 19 to 119. The larvae were orange in colour, oval-like shape, with their head burrowed into the lesions. A total of 4731 trombiculid larvae were counted in the birds. The mite number ranged from 50 to 635. The average number of lesions per bird was 51 and the average number of mites per bird was 295. Histopathologically, there was hyperkeratosis of the epidermal layer with the stylostome burrowed within anuclear keratin layer of the skin which can be seen under low magnification. Numerous inflammatory cells infiltrated in the epidermis surrounding the stylostome. The refractility of eosinophils granules was clearer in Helly's stained with H&E as compared to 10% formalin with similar stains under 100 x magnification. However, there was no significant difference in cell count for scoring cellular reaction in both fixatives and stains. In conclusion, there was a minor difference in appearance of

cellular reaction in trombiculid mite lesions using two different fixatives and stains. However, there was no significant difference in the cell numbers for 10% formalin and Helly's-fixed tissues.

Keywords: Red Jungle fowl, ectoparasite, trombiculidiasis, mites, formalin, Helley's fluid