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AVIAN POX IN AN IMMATURE RED-TAILED HAWK

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Abstract: Cutaneous lesions with the gross morphologic appearance of fowl pox were observed on the feet and lateral aspect of the face of a Red-Tailed Hawk *(Buteo jamaicenis)*. Typical fowl pox inclusion bodies were seen on histologic examination of a biopsy sample from one of the lesions.

INTRODUCTION

Pox lesions in birds of prey are relatively rare. Ward and Gallagher[6] and Brunett[1] list hawks as susceptible to the classic avian pox viruses. Irons[4] made several attempts to experimentally inoculate monkey-faced owls *(Tyto alba)* and screech owls *(Otus asio)* with mixtures of fowl and pigeon pox viruses, but was unable to demonstrate pox lesions with these isolates. Cooper[2] reported two instances of avian pox infecting peregrine falcons *(Falco peregrinus)* exported to England from the region of the Arabian Gulf. Both of these cases have been confirmed by the use of electron microscopy.

The observation of pox lesions in an immature Red-Tailed Hawk *(Buteo jamaicenis)* is reported in this paper. The bird was removed from the nest in Central Missouri by a local falconer during May, 1970. The bird was kept in captivity and developed lesions at approximately 3 months of age.

MATERIALS AND METHODS

The falconer submitted the three-month-old Red-Tailed Hawk to the Veterinary Medical Diagnostic Laboratory, University of Missouri, for examination of cutaneous scab-like lesions on the lateral aspect of the face and small plaques of raised epithelium on the feet. No other lesions were seen on close examination of the bird's skin or the oral cavity.

A small portion of the facial lesion was excised for histologic examination and confirmation of the clinical diagnosis of fowl pox.

RESULTS

The lesions were proliferative nodules of epithelium located on the lateral aspect of the second and fourth digits of the right foot and on the face anterior and ventral to the orbit (Figure 1). No lesions were observed in the pharynx or other areas of the body. The cutaneous lesions were raised discoid areas measuring 3 to

FIGURE 1. Proliferative nodule of epithelium on the face (arrow).

4 mm in diameter. At 10 to 14 days after first being recognized by the owner the lesions developed a yellowish-tan colored scab. Slight abrasion of the lesion on the fourth digit resulted in the removal of the scab and revealed a pink seropurulent, granulating nodule.

HISTOLOGICAL EXAMINATION

The biopsy sample removed from the facial lesions was fixed in 10% formalin, sectioned at 6μ and stained with hematoxylin and eosin.

The microscopic appearance of the tissue sections was typical of avian pox lesions in domestic fowl.[4] The intracytoplasmic inclusion bodies were eosinophilic, circular to ovoid in outline and measured 8 to 16μ in diameter. The cell nuclei were displaced toward the periphery of the cell; there was little evidence of pyknosis or nuclear degeneration of the cells located deep in the epithelial layer. However, the cells near the skin surface had nuclear destruction. No inclusion bodies were seen in the basal cell layer.

TREATMENT

Treatment was initiated with 3% mercurochrome in 70% alcohol, to which a trace of acetone was added. This solution was applied to the lesions twice daily.[3] No further lesions developed and clinical recovery was manifest 40 to 50 days after initiation of therapy.

DISCUSSION

Avian pox viruses have been classified on the basis of host specificity, some strains have been classified as mono-, bi-, or tri-pathogenic.[5] Previous studies by Irons[4] have been unable to demonstrate pathogenicity of fowl and pigeon pox viruses for owls. The recent report of Cooper[2] of avian pox in two raptorial birds and this report indicate that birds-of-prey are indeed susceptible to this group of viruses. Avian pox virus is transmitted directly between infected and susceptible birds and indirectly by contact with inanimate objects or by insect vectors.[5] The means of transmission in this case is unknown, but the relative isolation of a single hawk at an urban residence would seem to indicate indirect transmission by insects. The efficacy and value of the prescribed treatment for the pox virus is questionable. Its use did seem warranted to control concomitant bacterial infection of the viral lesions.

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