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## NATURAL POX INFECTION IN A GOLDEN EAGLE

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*Abstract:* A naturally occurring case of pox infection was identified in a Golden Eagle (*Aquila chrysaetos*) from the Prince George area of British Columbia. Gross and microscopic findings are described. This is apparently the first record of pox infection in the Golden Eagle.

In November, 1970, a juvenile Golden Eagle was submitted for examination to the Prince George Veterinary Clinic, Prince George, British Columbia. A hunter had captured the bird when it was unable to fly due to ingestion of a large quantity of moose meat. The bird had five proliferative nodules in the skin of the head and neck; a large nodule involving the left eyelid had caused complete closure of the palpebral fissure.

The bird was placed under general anesthesia and the nodules were excised. They were fixed in 10% neutral buffered formalin and submitted by Dr. A. D. Olson to the Department of Veterinary Pathology, for histologic examination.

The nodules were spherical, soft, and 0.5 to 1.5 cm in diameter. The cut surface was creamy white. Microscopic examination revealed extensive epithelial proliferation with ballooning of cells of the stratum spinosum. Large acidophilic, intracytoplasmic inclusion bodies could be seen in many of these cells when the sections were stained with hematoxylin-eosin. These intracytoplasmic inclusion bodies were typical of the Bollinger bodies seen in pox infections.<sup>8</sup> They were positive to an Oil-Red-O stain performed on frozen sections (Figure 1).

### COMMENT

Sudan colorants such as Oil-Red-O are commonly used to demonstrate lipids in tissue sections. Sudanophilic materials

such as lipids give an intense orange to red color when stained by this procedure. Randall and Gafford<sup>7</sup> studied the inclusion bodies of fowl pox by various histochemical methods including the Oil-Red-O technique. Intracytoplasmic inclusions produced by this virus contained phospholipid and cholesterol which gave a strongly positive reaction to the Oil-Red-O stain.<sup>7</sup> The positive reaction of the intracytoplasmic inclusion bodies found in sections of skin from this eagle when stained with Oil-Red-O suggests that they may have a similar composition. The use of this technique in routine diagnostic examinations is limited by its requirement for frozen sections.

Material for viral isolation was not available in this case. The gross and microscopic lesions were compatible with a diagnosis of pox infection.

An extensive review of pox infection in many species of wild and domestic birds by Cunningham<sup>1</sup> indicated that at least four different viruses or strains of virus may cause pox among birds; fowl pox, turkey pox, canary pox, and pigeon pox. The most satisfactory method of classification is on the basis of host origin and infectivity.

The range of wild birds found infected with or susceptible to pox has been markedly expanded in the last few years.<sup>2,3,4,5,6</sup> Perusal of the literature has not revealed previous reports of pox infection in the Golden Eagle.

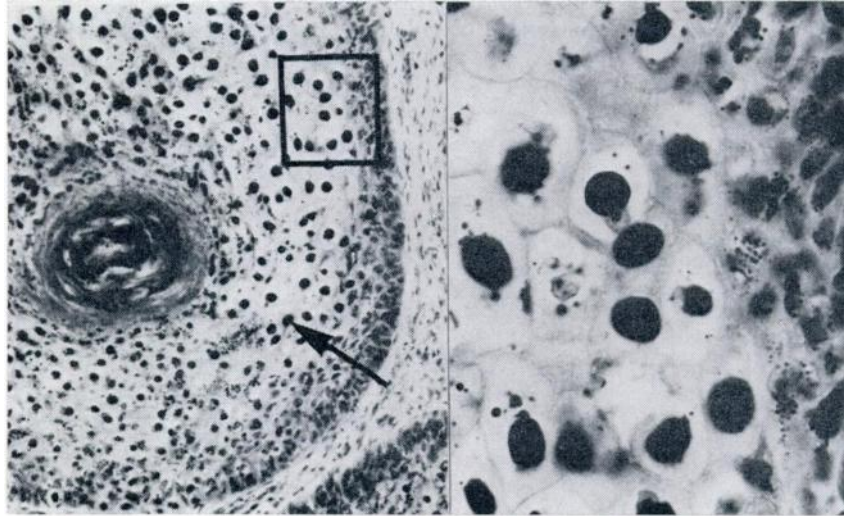


FIGURE 1 (a) (left). Section of skin from golden eagle with pox infection. Cells of the stratum spinosum are ballooned and contain Oil-Red-O-positive cytoplasmic bodies (arrow), Oil-Red-O Stain; x 125.

FIGURE 1 (b) (right) Inset. Higher magnification of Figure 1 (a) to illustrate ballooned cells containing Oil-Red-O-positive cytoplasmic inclusion bodies. Oil-Red-O Stain; x 450.

#### LITERATURE CITED

1. BIESTER, H. E., and L. H. SCHWARTE. 1965. Diseases of Poultry. Edition 5, pp. 788-812. Iowa State University Press, Ames, Iowa.
2. COOPER, J. E. 1969. Two cases of pox in recently imported Peregrine Falcons (*Falco peregrinus*). Vet. Rec. 85: 683-684.
3. KIRMSE, P. 1966. New wild bird hosts for pox viruses. Bull. Wildl. Dis. Assoc. 2: 30-33.
4. KIRMSE, P. 1967. Host specificity and long persistence of pox infection in the Flicker (*Colaptes auratus*). Bull. Wildl. Dis. Assoc. 3: 14-20.
5. KIRMSE, P., and H. LOFTIN. 1969. Avian pox in migrant and native birds in Panama. Bull. Wildl. Dis. Assoc. 5: 103-107.
6. LEIBOVITZ, L. 1969. Natural occurrence and experimental study of pox and *Haemoproteus* infections in a Mute Swan (*Cygnus olor*). Bull. Wildl. Dis. Assoc. 5: 130-136.
7. RANDALL, C. C., and L. G. GAFFORD. 1962. Histochemical and biochemical studies of isolated viral inclusions. Am. J. Path. 40: 51-62.
8. RHODES, A. J., and C. E. van ROOYEN. 1958. *Textbook of Virology*. Edition 3, pp. 18-20. Williams and Wilkins. Baltimore, Md.

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