Case Report—

Isolation of Streptococcus zooepidemicus from a Bald Eagle (Haliaeetus leucocephalus)

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SUMMARY

***Streptococcus zooepidemicus* was isolated from the intestinal tract of an adult male bald eagle *(Haliaeetus leucocephalus)* found dead in Minnesota in 1974.**

RESUMEN

Se aisló *Streptococcus zooepidemicus* del tracto intestinal de un águila adulta *(Haliaeetus leucocephalus)* que se encontró muerta en Minnesota en 1974.

INTRODUCTION

From 1960 to 1974, 307 bald eagles found dead at various locations in the United States were submitted to the U.S. Fish and Wildlife Service's Patuxent Wildlife Research Center (PWRC), Laurel, Maryland, for necropsy and subsequent chemical analysis for organochlorine pesticide residues. This note reports the isolation of *Streptococcus zooepidemicus* from the intestine of one of these eagles and is the first record of isolation of this organism from the American bald eagle.

CASE REPORT

An emaciated adult male bald eagle weighing 2.8 kg was found dead near Whiteface Reservoir, St. Louis County, Minnesota, on October 24, 1974. The eagle was collected, frozen, and shipped to PWRC for necropsy.

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Necropsy revealed that the eagle had no subcutaneous fat and that the pectoral muscles were markedly atrophied, resulting in the classic "hatchet-breast." Internally there was no coronary or abdominal fat; the heart (39.5 g) contained a large "chicken fat" clot in the left ventricle; the endocardium appeared normal, although the heart valves appeared thickened. No evidence of trauma was noted.

The liver (40 g) was chocolate in color and had prominent lobulations. No areas of focal necrosis were grossly visible.

The intestines were hyperemic, and the lumen was filled with reddish-brown material composed of sloughed tissue debris and fluids. Lungs and air sacs were normal, as were the empty esophagus, proventriculus, and ventriculus.

Bacteriological examination of the liver, heart blood, and venous blood yielded no pathogenic bacteria. Two organisms were isolated from the intestinal contents. One was identified as *Escherichia coli*; the other, a streptococcus, was tentatively identified by the Maryland Department of Agriculture's Animal Health Laboratory, College Park, Maryland, as possibly *Streptococcus zooepidemicus*.

The streptococcal isolate was submitted to the National Veterinary Services Laboratory, APHIS, Ames, Iowa, for identification. The organism produced acid with no gas from glucose, sucrose, lactose, and sorbitol. It was negative with inulin, arabinose, and mannitol. Esculin was not split. It was catalase-positive. Beta hemolysis was observed following 24 hours incubation on 5% sheep blood agar. Litmus milk was slightly acidifed. On the basis of these biochemical reactions, the isolate was identified as *Streptococcus zooepidemicus*.

Chemical analysis of the brain and the carcass remainder failed to demonstrate the presence of lethal amounts of organochlorine pesticides (brain: p, p′ DDE [Dichloro diphenyl dichloroethylene] = 45 ppm, wet weight; p, p′ DDD [1,1 -Dichloro-2,2-*bis* *p*-chlorophenyl ethane] = 0.67; p, p′ DDT [Dichloro diphenyl trichloroethylene] = 0.06 ppm; dieldrin = 2.5 ppm; heptachlor epoxide = 0.13 ppm; and PCB [polychlorinated biphenols] = 33.0 ppm, well beneath established lethal brain levels). The liver was analyzed for heavy metals and contained 0.85 ppm (wet weight) Pb, 2800 ppm Fe, 19 ppm Hg, and 3.2 ppm Se. Although the levels of iron and mercury in this eagle's liver are somewhat higher than usual, their diagnostic significance has not been established.

DISCUSSION

Although the necropsy and subsequent chemical analysis of the tissues of the eagle failed to clearly establish the cause of death, the isolation of *Streptococcus zooepidemicus* is of interest, as it is a recognized pathogen of domestic poultry (1,3) and more recently was reported as being responsible for the loss of several thousand eared grebes (*Podiceps nigricollis*) on the Great Salt Lake, Utah, in November and December 1977 (2).

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