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Isolation of *Actinobacillus suis* from a Canada Goose (*Branta canadensis*)

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ABSTRACT: Blindness from conjunctivitis caused by *Actinobacillus suis* was found in a Canada goose (*Branta canadensis*) from a wildlife refuge in Kentucky. Lesions were not observed elsewhere and other body organs were grossly normal. *Actinobacillus* spp. in birds is rare and this is apparently the first report of conjunctivitis resulting from this infection in waterfowl.

Key words: *Branta canadensis*, Canada goose, *Actinobacillus suis*, conjunctivitis, bacteriology, case report.

On 20 December 1985 a live, adult female Canada goose (*Branta canadensis*) was submitted to the Murray State University Breathitt Veterinary Center, Hopkinsville, Kentucky. The goose had been captured by hand on the Sauerheber Wildlife Refuge near Henderson, Kentucky. The bird had matted eyes and appeared blind at the time of capture. There were approximately 13,000 geese and 12,000 ducks on the refuge at the time. According to the wildlife manager, no other birds appeared ill.

Prior to euthanasia the bird was bright and alert, although thin and moderately dehydrated. The upper and lower eyelids of both eyes were matted closed by a tenacious grey exudate. The conjunctivae were hyperemic and the corneas were clear. Lesions were not observed in the frontal sinuses or the lower respiratory tract. All other body systems were grossly normal at necropsy.

Selected specimens were submitted for bacterial culture and processed according to standard methods (Carter, 1984). Sections of liver, lung, intestine and ocular swabs were inoculated onto trypticase soy agar containing 5% sheep blood and incubated in 6–8% CO_2 at 37 C. Bacteria were not isolated from the liver. *Escherichia coli* was isolated from the lung, ocular swabs and intestine. The ocular and lung cultures produced small grey colonies of gram-negative rod-shaped bacteria exhibiting β-hemolysis. The organism was oxidase and catalase positive. On the basis of biochemical tests (Krieg and Holt, 1984; Lennette et al., 1985), the organism was identified as *Actinobacillus suis*. The isolate did not display the sticky and adherent properties characteristic of *Actinobacillus* spp. Pathogenicity to mice was demonstrated by intraperitoneal injection with 0.25 ml of a 6 hr broth culture. Death of the mice occurred within 12 hr and the isolate was recovered from the heart blood.

Microscopically, the cutaneous surfaces of the eyelids were hyperkeratotic and acanthotic. Accumulations of necrotic inflammatory cells mixed with cellular debris were on the skin surface and within the superficial keratinized layers. The conjunctival surfaces were thickened and hyperplastic. Numerous heterophils were migrating through the epidermis toward the surface. The dermal tissues contained numerous dense aggregations of mixed inflammatory cells. Heterophils and large mononuclear cells were predominant. The lower respiratory tract was normal.

Actinobacillus suis commonly causes arthritis, pneumonia, pericarditis, nephritis and subcutaneous abscesses in young swine. It is occasionally isolated from the upper respiratory tract of horses (Carter, 1984). The recovery of *Actinobacillus* spp.

from birds is rare. An *Actinobacillus lignieresii*-like organism has been reported to have caused salpingitis in Peking ducks by Bisgaard (1975). Hacking and Sileo (1977) reported a hemolytic *Actinobacillus* sp. from six waterfowl, three with periocular serous exudation and two with airsacculitis and bronchopneumonia. To our knowledge, the present case documents the first report of *A. suis* from a goose with conjunctivitis. Since *Actinobacillus* spp. infections can spread rapidly in young mammals, it was feared the recovery of *A. suis* from this bird could have epizootic significance. However, the geese left the refuge shortly thereafter and no further cases were observed.

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