APPARENT FAVORABLE RESPONSE OF LEAD POISONING IN A DUCK TO TREATMENT WITH A CHELATING AGENT

Author: WOBESER, G.

Source: Bulletin of the Wildlife Disease Association, 5(2) : 120

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-5.2.120

APPARENT FAVORABLE RESPONSE OF LEAD POISONING IN A DUCK TO TREATMENT WITH A CHELATING AGENT

Mortality of waterfowl due to the ingestion of lead shot has been recognized as a threat to waterfowl populations for over half a century. Although numerous avenues have been explored to reduce the occurrence of this condition, to date no effective solution has been found. This report is presented, not as a clinical trial of a cure for lead poisoning, but rather as observations on a single bird treated with an agent that is regarded as standard treatment for lead poisoning in humans and domestic animals.

On June 13, 1968, an adult male Redhead *(Aytha americana)* was captured on Walpole Island, Lake St. Clair, Ontario. It was found to be emaciated and unable to sustain flight. When submitted for laboratory examination on June 14, the bird was bright and alert but showed general weakness, and inability to fly.

Radiography revealed three lead shot in the gizzard. A tentative diagnosis of lead poisoning was made and treatment was instituted with Ca EDTA[1] (calcium disodium ethylenediaminetetracetate).

One-half ml of a 6.6% solution was administered by intraperitoneal injection and instructions were given to repeat the dosage later in the day. Further treatment consisted of 1 ml of Ca EDTA twice daily for 2 days. By June 15 the bird was eating well, gaining weight and showing marked improvement. Treatment was discontinued at this time. No lead shot were found when radiography was repeated on June 24. The bird appeared to be fully recovered at this time and had gained a substantial amount of weight. The bird was released and was able to fly normally.

EDTA is a non-specific chelating agent which forms stable compounds with many metals; its use in lead poisoning depends upon the displacement of calcium from Ca EDTA to form stable Pb EDTA, which is excreted in the urine (Chisolm, 1968, Journal of Pediatrics, 73 (1): 1-38). In man and animals, parenteral EDTA has been found to increase urinary lead excretion 20 to 50 fold (op cit).

EDTA materially reduces the lead level in soft tissues but has little effect on lead deposited in bone. It is thus more effective in acute than in chronic lead poisoning, (Jones, 1965, Veterinary Pharmacology and Therapeutics, Iowa State University Press, Ames, Iowa).

This case report is presented to stimulate interest in what would appear to be rational therapy for lead poisoning in waterfowl. If this treatment should prove effective, it might provide a practical method of dealing with the large numbers of waterfowl involved in "epidemics" of lead poisoning.

I am grateful for the interest and cooperation of Dr. A. T. Cringan and Mr. B. Markham, who submitted the duck and to Mr. Gareth Jones, who cared for it during its recovery.

[1]Havidote—Haver-Lockhart Laboratories.

G. WOBESER,
Section of Zoonoses and
Diseases of Wildlife,
Ontario Veterinary College,
University of Guelph,
Guelph, Ontario, Canada

February 12, 1969