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Popular Article

The Heavy Metal Hazard: Lead Toxicity in Dogs and Cats

Sanjay Vaghela
Ph.D. Scholar, Department of Veterinary Pharmacology & Toxicology,
College of Veterinary Science & Animal Husbandry,
Kamdhenu University, Anand - 388001, Gujarat, India
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Introduction

Lead is a heavy metal that can be found in various sources, such as paint, batteries, toys and contaminated soil. While lead poisoning is not very common in pets, it can cause serious health problems if they ingest or inhale enough of it. Lead poisoning can affect the nervous system, the gastrointestinal tract, the immune system, the reproductive system and the kidneys. In this article, we will explain the causes, symptoms, diagnosis and treatment of lead toxicity in dogs and cats.

Causes of Lead Poisoning

Lead poisoning can occur when pets chew on or swallow objects that contain lead, such as paint chips, linoleum, grease, lead weights, lead shot or fishing sinkers. Pets may also be exposed to lead by licking or breathing dust from old paint or contaminated soil. Young animals, especially puppies and kittens, are more likely to develop lead poisoning because they have a higher absorption rate and a tendency to explore and mouth things. Some breeds of dogs, such as Beagles and Labrador Retrievers, are also more prone to pica, a condition that causes them to eat non-food items.

Symptoms of Lead Poisoning

The symptoms of lead poisoning depend on the amount and duration of exposure, as well as the individual sensitivity of the pet. Some pets may show signs within hours or days of exposure,

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while others may take weeks or months to develop symptoms. The most common signs of lead poisoning include:

- Loss of appetite
- Vomiting
- Diarrhea
- Abdominal pain
- Lethargy
- Weight loss
- Behavior changes, such as aggression, anxiety or depression
- Ataxia (loss of coordination)
- Tremors
- Seizures
- Blindness
- Anemia (low red blood cell count)
- Leukocytosis (high white blood cell count)
- Kidney failure

Diagnosis of Lead Poisoning

The diagnosis of lead poisoning in dogs and cats involves a comprehensive evaluation encompassing physical examination, medical history, consideration of the environment and identification of potential sources of lead exposure. A crucial aspect of the diagnostic process is the measurement of lead levels in the blood. A blood lead level equal to or exceeding 0.6 ppm (60 µg/dL) is indicative of lead poisoning. Radiographs (X-rays) are utilized to examine the pet's stomach or intestines for the presence of lead objects and to assess bone changes resulting from chronic exposure. Additional tests, such as urine analysis, liver and kidney function assessments and blood smear examinations, may also be conducted to evaluate the extent of organ damage.

Treatment of Lead Poisoning

The treatment of lead poisoning depends on the severity of the condition and the source of exposure. The main goals of treatment are to remove the lead from the body, to prevent further absorption, to correct the organ damage and to control the symptoms. The treatment options include:

- **Removal of lead objects from the gastrointestinal tract:** This may be done by inducing vomiting, performing gastric lavage, giving cathartics or enemas or using bulking agents. In some cases, surgery may be needed to remove the lead objects.

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- **Chelation therapy:** This is the use of drugs that bind to the lead and help eliminate it from the body. The most common chelators used for lead poisoning are calcium disodium ethylene diamine tetra-acetate (Ca-EDTA) and succimer (DMSA). These drugs are given by injection or orally, respectively, for several days or weeks. Chelation therapy may have side effects, such as nausea, vomiting, diarrhea, kidney damage or allergic reactions, so it should be done under close veterinary supervision.
- **Supportive care:** This includes fluid therapy, electrolyte correction, anti-emetics, anti-convulsant, sedatives, thiamine supplementation and blood transfusions, depending on the needs of the pet.
- **Environmental decontamination:** This involves identifying and removing the source of lead from the pet's environment, such as replacing old paint, disposing of lead-containing items or avoiding contaminated areas.

Prevention of Lead Poisoning

The best way to prevent lead poisoning in pets is to avoid exposing them to lead in the first place. You can do this by:

- Keeping pet away from old paint, batteries, toys or other items that may contain lead.
- Storing lead-containing items in a secure place where pet cannot access them.
- Cleaning up any paint chips, dust or soil that may be contaminated with lead.
- Providing pet with a balanced diet and plenty of fresh water.
- Monitoring pet's behavior and appetite and seeking veterinary attention if notice any signs of illness.

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