



Associate : Canine : Paintball Toxicity

Paintball Toxicity

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Contributors:

Linda Shell, DVM, DACVIM (Neurology)

Tina Wismer, DVM, DABVT, DABT, ASPCA Animal Poison Control Center

Synonyms:**Disease description:**

Paintball ingredients vary depending on the manufacturer and may include polyethylene glycol, glycerol (glycerin), gelatin, sorbitol, dipropylene glycol, mineral oil, dye, ground pig skin, and water. Paintballs come in various colors and one box may contain more than 1,000 paintballs. The toxic dose of paintballs is not known. In one documented case, a 41 kg Labrador retriever showed clinical signs after ingesting 15 paintballs. ¹

The mechanism of toxicity is not completely understood but may be related to hypotonic fluid loss secondary to osmotically-active ingredients in paintballs (such as polyethylene glycol, glycerol, and sorbitol), which causes body water to move into the intestinal lumen. Metabolic acidosis and electrolyte changes, particularly hypernatremia, develop.

CLINICAL SIGNS AND DIAGNOSTICS

The most commonly reported clinical signs are vomiting, ataxia, diarrhea, and tremors. These can occur as early as one hour after ingestion. The vomiting and diarrhea may be discolored by the color of the paintballs that were ingested. Other clinical signs may include tachycardia, weakness, hyperactivity, hyperthermia, polydipsia, blindness, depression, seizures, and coma. In 44 reported cases, two dogs were euthanized because of severe central nervous system signs. ¹

Ingestion of paintballs has been associated with acid/base imbalances and electrolyte disorders notably hypernatremia and hypokalemia. Abdominal radiographs may show circular masses with soft tissue opacity in the stomach.

Clinical findings:

ANOREXIA, HYPOREXIA
 ANXIETY
 ATAXIA, INCOORDINATION
 BEHAVIOR CHANGE
 BLINDNESS
 Cachexia, weight loss
 CENTRAL NERVOUS SYSTEM (CNS) SIGNS
 Collapse of patient
 Coma, unconsciousness
 CONVULSIONS, SEIZURES, FITS
 Dehydration
 Depression
 DIARRHEA
 FEVER
 GAIT ABNORMAL
 Hyperpnea
 Hypersalivation
 Hyperventilation, tachypnea
 Malaise
 Nausea
 Onset sudden, acute
 TACHYCARDIA
 Tonic or clonic seizures
 VOMITING
 ZZZ INDEX ZZZ

Diagnostic procedures:

Blood bicarbonate of EDTA blood

Serum chemistry

Blood pH on EDTA blood

Diagnostic results:

Blood bicarbonate decreased, metabolic acidosis

Hypernatremia
 Hypokalemia

Blood pH decreased, acidosis

Treatment/Management/Prevention:**SPECIFIC SOON AFTER INGESTION**

- 1) If ingestion has been recent (within minutes to an hour), and if there are no signs of respiratory distress, seizures, or comatose state, induce emesis using one of the following:
 - Apomorphine: 0.04 mg/kg IV or 0.08 mg/kg IM, SC or crush up one tablet and place it in conjunctival sac; flush remainder of tablet out of sac as soon as emesis occurs. Link to [apomorphine discussion](#) on VIN:
 - Hydrogen peroxide 3%: 5-10 ml PO, may be repeated once. Make sure the hydrogen peroxide is active i.e. it should bubble and fizz. Feeding a few pieces of bread may improve vomiting efficiency and give bulk to push out the agent.
 - Ipecac syrup: 2.2 ml/kg PO once. Dilute with equal parts water and administer by stomach tube. Note that this is no longer available for purchase in the United States.
- 2) Activated charcoal is contraindicated as it will pull more fluids into the GI tract.

- 3) If paint balls are radiographically evident in the stomach, gastric lavage should be done with the patient anesthetized and intubated with a cuffed endotracheal tube. A volume of 5-10 ml/kg of lavage solution should be used and lavage repeated until the fluid coming out is clear.
- 4) Warm water enemas may help stimulate movement of paintballs through the GI tract and will help correct hyponatremia.
- 5) Monitor electrolytes carefully and correct any imbalances. In symptomatic animals, monitor electrolytes and acid-base values every 2-4 hours until clinical signs resolve and values normalize.
- 6) In hyponatremic patients, administer IV fluids (D5W, 2.5% dextrose + 0.45% NaCl) until serum sodium levels return to normal. Fluid rates may need to be quite high due to the loss of fluids into the GI tract.
- 7) Although paintball toxicosis is potentially fatal, most affected animals recover within 24 hours.

SUPPORTIVE

1) Control seizure activity:

- Diazepam: 0.5-2.0 mg/kg IV. If more than 3 doses are required to control seizures, use CRI diazepam at 0.5-2 mg/kg/hr mixed with 5 % dextrose or 0.9% saline solution.
- Pentobarbital: 30 mg/kg IV to effect.
- Propofol: CRI at 0.1 to 0.6 mg/kg/min.

2) IV fluids as needed.

3) Monitor and control temperature.

Differential Diagnosis:

Tremorgenic mycotoxins
Strychnine
4-aminopyridine
Pyrethrin overdose
Methylxanthines (chocolate/coffee)
Pseudoephedrine
Amphetamines
Cocaine
OP/carbamates (disulfoton/methomyl)
Bromethalin

References:

1) Donaldson CW: Paintball toxicosis in dogs. Vet Med 2003 Vol 98 (12) pp. 995-998.

Feedback:

If you note any error or omission or if you know of any new information, please send your feedback to Associate@vin.com.

If you have any questions about a specific case or about this disease, please post your inquiry to the appropriate message boards on VIN.

Address (URL): <http://www.vin.com/Members/Associate/Associate.plx?DiseaseId=2993>



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800.700.4636 | VINGRAM@vin.com | 530.756.4881 | Fax: 530.756.6035
777 West Covell Blvd, Davis, CA 95616
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