Observations from the Readers’ Forum

- Guinea Pig “Cloaca”
- Rabbit Anesthesia
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Care of Domestic and Spiny Mice
Suspected Zinc Toxicosis in an Iguana

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A 5-year-old male iguana (Iguana iguana), weighing 4.08 kg and measuring 127 cm long, was referred to Washington State University Veterinary Teaching Hospital for assessment of recurring cloacal prolapse and removal of an intestinal foreign body. The iguana had been lethargic and anorexic for 2 days prior to presentation and had not passed fecal material during that time. Cloacorrhaphy performed 3 weeks previously had failed to correct the prolapse. The iguana roamed freely in the owner’s home where it had access to a 150-watt incandescent bulb for heat and a full-spectrum light source. The animal’s diet consisted of various green and yellow vegetables, fruits, legumes and a vitamin/mineral supplement. Water was available in a large bowl along with baths offered on alternate days.

Fig 1. Radiographs revealed a high-density circular object in the mid coelom, measuring approximately 1.9 cm in diameter, which was presumed to be a coin in the gastrointestinal (GI) tract. The tentative diagnosis was zinc toxicosis secondary to a zinc-containing GI foreign body. Blood was collected in a plastic red-capped tube and submitted for a serum zinc concentration, and an enterotomy was scheduled for the following day.
The enterotomy approach was routine for this species. Two corroded pennies, minted in 1984, were removed from the cecum. The descending colon was anchored to the left abdominal wall with 2 rows of 4 simple interrupted sutures, using 3-0 polydioxanone suture [PDS)], with the intent of preventing reprolapse. The iguana recovered uneventfully. Cloacal prolapse occurred 18 hours postoperatively and was reduced manually before the iguana was returned to the owner for home care and observation. The animal’s activity and appetite returned to normal 6 days after surgery.

Discussion

The serum zinc concentration was 3.6 ppm, compared to concentrations of 2.7, 2.8 and 2.3 ppm in 3 clinically normal iguanas (2 females and 1 male) aged 4, 7 and 10 years, respectively. Serum zinc concentrations in 15 clinically normal iguanas reported in another study were 2.3 ± 0.2 (standard error) ppm (range = 1.1-3.3 ppm).

Diagnosing zinc toxicosis in reptiles is difficult because of the significant variability of normal serum zinc levels among reptilian species and a lack of experimental studies correlating zinc concentrations with clinical manifestations. This is compounded by a frequently inadequate history, incomplete examination (including radiography) and failure to test for zinc in animals exhibiting nonspecific neurologic or GI signs.

The composition of US pennies changed after 1982 from 95% Cu and 4% Zn to 96% Zn and 2.5% Cu. Therefore, the mint date of 1984 on the pennies removed from the iguana supported the possibility of zinc toxicosis.

Chelation therapy for zinc toxicosis has been suggested but typically is not administered, because serum zinc concentration falls rapidly after removal of the source, and the effect of chelation on endogenous zinc, an essential trace mineral, is not known.

Anemia is a common sequela to zinc poisoning in mammals; unfortunately we did not evaluate the packed cell volume in this animal. In addition, we were unable to monitor serum zinc concentrations following removal of the pennies from the cecum. We hypothesized that by the time the pennies had passed through the stomach and reached the cecum, serum zinc concentrations might have begun to decline. The clinical signs, compatible with zinc toxicosis, resolved soon after removal of the penny foreign bodies.

Further Reading

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