

The Case: A Dental Accident, Potential Blindness

Dental procedures, specifically those involving the caudal maxillary teeth, are associated with risk of damage to the globe and periorbital structures. Brachycephalic breeds are at an increased risk. In dogs, the floor of the orbit contains only soft tissue and not bone, making it susceptible to penetration during a dental procedure.

This case study followed a 5-year-old Tibetan terrier treated medically after a suspected globe penetration during dental extraction. Four days after the procedure, which involved removal of the upper left and right molar teeth, the dog presented with a 24-hour history of blepharospasm and periorbital swelling of the left eye. The eye was mildly exophthalmic and had an elevated nictitans membrane and positive dazzle reflex; menace and papillary light reflexes were negative. Other findings included hyperemic and chemotic conjunctiva, pancorneal edema, miotic pupil, and aqueous flare in the anterior chamber.

Ultrasound examination was consistent with a penetrating wound in the globe, most likely from a root elevator during the dental procedure.

Treatment included oral prednisolone, marbofloxacin, and tramadol, as well as a topical treatment applied to the left eye with prednisolone acetate 1%, atropine sulfate 1%, and brinzolamide. Significant improvement was seen in the first week. Oral and topical steroids were gradually decreased over 10 weeks and marbofloxacin stopped after 3 weeks. Ten months after the dental procedure, the left globe was visual and the ocular exam almost completely normal. The long-term use of steroids likely significantly contributed to the positive outcome by reducing the severe inflammation caused by globe penetration.

■ Commentary

This case illustrated the care necessary

when performing dental extractions, particularly in brachycephalic breeds, and the potential for even a severely affected globe to respond favorably to medical treatment. Penetrating globe trauma, particularly involving the sclera, usually requires surgery either to repair or remove the globe. Surgery may preserve a cosmetic globe but not visual function; however, in this case, medical therapy with topical and oral antibiotics and corticosteroids achieved both. It is possible that carprofen may have resulted in a similar outcome, but in conjunction with an oral antibiotic (with a spectrum appropriate for oral flora), oral prednisolone allowed long-term therapy with a tapering dosage to ensure no recurrence of inflammation and discomfort.—*Alison Clode, DVM, DACVO*

■ ■ Source

Successful medical treatment for globe penetration following tooth extraction in a dog. Guerreiro CE, Appelboom H, Lowe RC. *VET OPHTHALMOL* 17:146-149, 2014.

Blood Transfusion Restriction in Ferrets



Blood transfusions have been used in ferrets to treat multiple causes of anemia. Using fresh donor blood within 4 hours poses little clinical risk, even without cross-matching of blood groups; however, blood banking is not routine for ferrets. This study aimed to determine the stability of ferret blood stored at 4°C in an anticoagulant citrate-phosphate-dextrose solution with adenine (CPDA).

Blood samples were taken from 2 male donors once a month for 5 months and stored for 4 weeks in polyethylene terephthalate (PET) blood tubes at a ratio of 6 mL blood:1 mL CPDA. Glucose, pH, lactate, potassium, and sodium were measured in samples at days 0, 7, 14, 21, and 28. Hematocrit measurement and microscopic blood smear examinations were also performed.

Evidence of RBC deterioration was observed more rapidly in the ferret samples than in that previously described for canine or human samples, with significant biochemical and morphological changes by day 7 and hemolysis evident by day 21. Although further studies are needed, these results indicate that ferret blood stored in CPDA should not be transfused after 7 days.

■ Commentary

Veterinary blood transfusions are not new science, but bank programs are currently limited to dogs, cats, and other domestic animals. Successful transfusions have been reported in many exotic species (eg, ferrets, tortoises, rodents, birds). However, little is known about storing blood from nontraditional species; with advancements in exotic animal medicine, this research is immediately usable in practice. With continued research, routine transfusions should be an option in virtually any species.—*Adolf Maas, DVM, DABVP (Reptile & Amphibian)*

■ ■ Source

Assessment of a blood preservation protocol for use in ferrets before transfusion. Pignon C, Donnelly TM, Todeschini C, et al. *VET REC* 174:277, 2014.

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