

## Surgical Correction of Bilateral Lens Luxation in an African Lion

AN ADULT MALE African lion (*Panthera leo*) in a local wildlife park was examined because it had a suspected visual defect and did not mix with other members of the pride. Ophthalmic examination revealed mildly responsive pupils, bilateral posterolateral lens luxation, and slight enlargement of the globes (as compared with other members of the pride; Fig 1). Fundus ex-

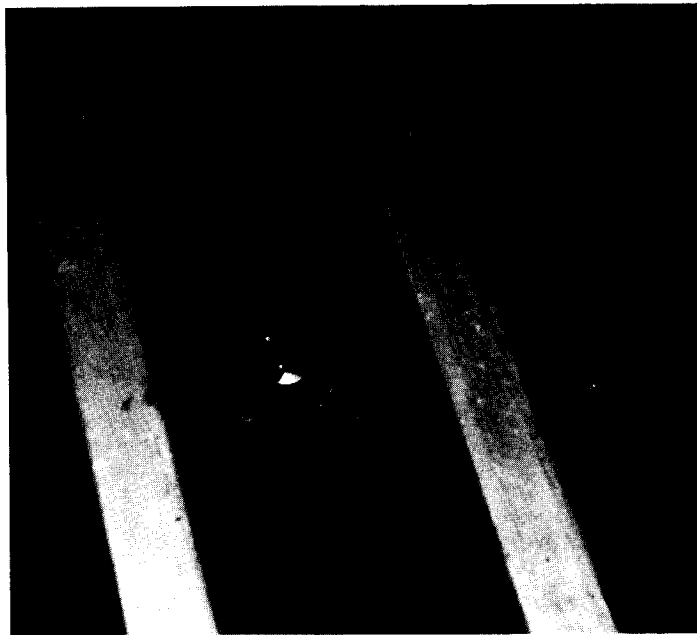


Fig 1—African lion with bilateral lens luxation. The posterolateral lens luxation is seen here in the right eye.

amination was not possible, nor was tonometry attempted. Corneal striae were observed and it was believed that the lion was developing glaucoma secondary to the lens luxation. Surgical removal of the luxated lens was advised in an attempt to preserve the remaining vision, and the lion was transported to the National Zoological Park for surgery.

Prior to surgery the lion was placed on a regimen of chloramphenicol orally (4 g twice a day) for 5 days. Sedation sufficient for intubation was accomplished by an intramuscular injection of 300 mg of tiletamine hydrochloride and zolazepam (Tilazol [CI744], Parke, Davis & Co), in a 1-to-1 combination. Intubation was accomplished 14 minutes later. A semiclosed system of anesthesia was used, utilizing halothane and nitrous oxide. Re-

covery time after the surgery (which lasted 1½ hours) was prolonged (nearly 18 hours).

After routine presurgical preparation and draping of the orbital area, disposable speculums (Self-adhering Lidholders, Medical Workshop, The Netherlands) were used to expose the left eye. The cornea was incised and the lens was delivered, using a sterile lens loop. An interrupted pattern of sutures (Five O Dexon, Davis & Geck, American Cyanamid Co) was used to close the corneal incision.

The nictitating membrane was used to create a flap over the cornea. An ointment containing atropine, neomycin, polymixin, and dexamethasone (Maxitrol, Alcon Laboratories) was applied to the globe at the end of the surgery. The corneal flap remained in place for 2 days. The eye looked excellent at 14 days, when the lion was again placed under anesthesia. There was mild corneal vascularization and edema. The sutures were still in place and were removed at that time.

The right lens was removed in similar fashion and recovery from anesthesia was uncomplicated. Postsurgical vascularization and edema eventually cleared to the point where iris details were evident (Fig 2).

The use of an injectable dissociative anesthetic facilitates manipulative procedures on many large and potentially dangerous exotic species. If further or prolonged anesthesia is necessary, inhalation anesthesia can be used.

Ocular surgery is feasible in lions and the limitation of postoperative ocular medication should not be considered a deterrent.

Four months after surgery, the lion still failed to mix with the other lions and was euthanatized. The eyes were examined histologically. No

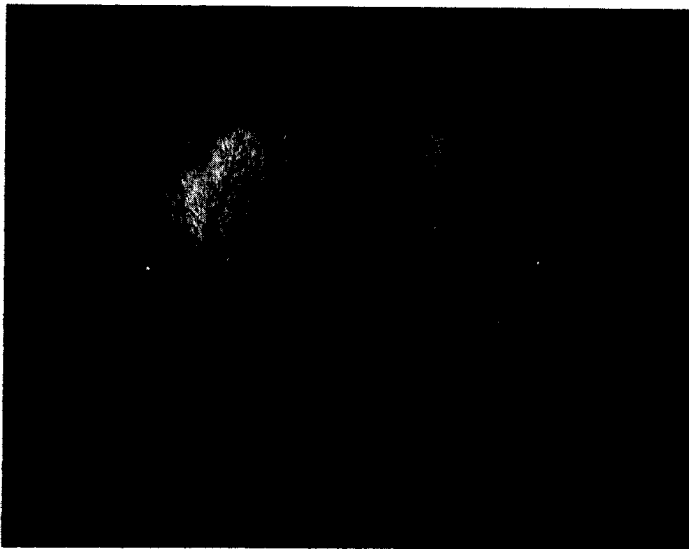


Fig 2—Lion 2½ months after surgery on right eye. Notice scarring and vascularization of both corneas.

obvious abnormality was revealed, except for the changes related to the surgery.

Although surgical intervention was successful in resolving what was suspected to be secondary glaucoma, the lion, on recovery, still did not mix with the pride. The inability of this animal to mix with the pride was believed to be related to its visual defect. The social structure of a lion pride depends on many degrees of visual communication,<sup>1</sup> which may have led to this lion's ostracization.

Even though the lion's vision was not improved, we believe the surgery was helpful in preventing further deterioration of the lion's ocular condition. The decision for ocular surgery should include consideration of the behavioral problems induced by impaired vision.—*Mitchell Bush, DVM, and Seth A. Koch, VMD, National Zoological Park, Smithsonian Institution, Washington, DC 20009.*

1. Schaller, G. B.: *The Serengeti Lion*. University of Chicago Press, Chicago, IL (1972): 92.