

BILATERAL PHACOEMULSIFICATION AND IOL IMPLANTATION FOR THE TREATMENT OF BILATERAL CONGENITAL CATARACT IN A YOUNG LIONESS (*Panthera leo*)

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Purpose: To describe a case of bilateral congenital cataract in a lioness treated with bilateral phacoemulsification and implantation of foldable, acrylic, intraocular lenses (IOLs) (S&V Technologies AG Acrivet, Hennigsdorf, Germany) specifically studied for this species (Fig.1).

Methods: A 15 month-old lioness (Elsa) from a circus, who exhibited aggressive behaviour since birth, underwent a complete ocular examination. The diagnosis was bilateral congenital immature cataract (Fig.2 and Fig.3).



Fig.1



Fig.2



Fig.3



Fig.4



Fig.5

The IOL dioptic power and size that were specifically made for this lioness, were obtained using an A-mode ultrasound (BioLine, Optikon 2000, Roma, Italy) to determine the antero-posterior axis length, (which was of 27,92 mm and 28,31 for the right and the left eye respectively) (Fig.4 and Fig.5),

a B-mode ultrasound (MyLab, Esaote Piermedical, Italy) to determine the crystalline lens thickness (which was 0,86 mm),



Fig.6



Fig.7

and a corneal topographer (Keratron Piccolo, Optikon 2000, Roma, Italy) to calculate the corneal curvature (Fig. 8 and Fig.9). The IOLs were 22mm in diameter with a diopter power of 30-D (Fig.10).



Fig.8

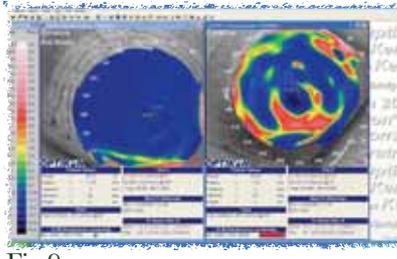


Fig.9

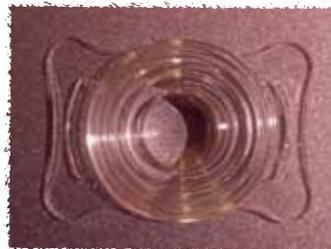


Fig.10

The 2 eyes were not operated at the same time but rather one week apart and by two different surgeons. Just before the first surgery electroretinography (ERG) (HM sERG, RetVetCorp, Columbia, MO, USA) in light and dark adaptation of both eyes was performed and revealed an apparent normal electroretinographic response (Fig.11 and Fig.12).



Fig.11

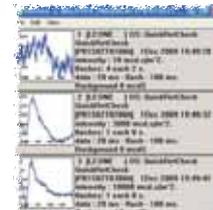


Fig.12

The lioness was anesthetized, intubated and maintained under anesthesia with isoflurane and oxygen before performing the ERG (Fig.13).



Fig.13

Results: Both eyes underwent phacoemulsification (Pulsar, Optikon 2000, Roma, Italy) and successful IOL implantation. The phaco time was 4 minutes and 42 seconds for the first (left) eye and 2 minutes and 52 seconds for the second (right) eye; the ultrasonic power used for both surgeries was 80%. The 2 IOLs were slightly oversized in both cases and, therefore, the haptics were partially cut to locate them centrally in the capsular bag. 20 mg of triamcinolone acetonide (Bristol-Myers Squibb, Italy) was administered subconjunctivally in both eyes at the end of each surgery and the same dosage was repeated after 3 weeks. After 9 weeks and 8 weeks from the first and the second surgery, respectively, both eyes appeared quiet with no apparent intraocular inflammation (Fig.14 and Fig.15). Retinoscopy was performed at this re-check examination and revealed both eyes to be within 1.5 D of emmetropia.

Conclusion: This is a first report of bilateral phacoemulsification followed by IOL implantation using intraocular, acrylic, foldable lenses specifically studied for this lioness. 5 months post surgery the patient, seemed to have a normal vision and her overall behavior improved dramatically.



Fig.14



Fig.15

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