

Acute Glaucoma in a ShihTzu dog

Apurv Kaushik¹, Kanchan Walwadkar², Sapna Sharma^{1*} and Venkata Vinay Varma Manthana³

¹Teaching Associate, IPVS, DUVASU, Mathura, U.P. ²Assistant Professor, Co.V.Sc.&A.H., NDVSU, Rewa, M.P.

⁴Veterinary officer, EMRI Green Health Services, Konaseema, A.P.

Abstract

This case study describes the effective management of Acute Glaucoma in a 2-year-old female Shih Tzu named Kelly. The dog presented with sudden ocular discomfort and impaired vision in the left eye, displaying signs of pain and irritation. Clinical examination revealed elevated intraocular pressure, conjunctival hyperaemia and corneal edema. Diagnostic tests confirmed Acute Glaucoma with gonioscopy and ophthalmic ultrasound revealing characteristic changes. Prompt treatment was initiated, combining topical medications (Timolol, Dorzolamide, Prednisolone), systemic therapy (Oral Mannitol), and pain relief (Carprofen). Follow-up appointments demonstrated significant improvement with normalized intraocular pressure and alleviated discomfort. Medication adjustments were made progressively, and after one month, Kelly's left eye exhibited marked improvement, warranting positive long-term prognosis. This case underscores the importance of swift intervention, comprehensive treatment, and diligent follow-up in managing Acute Glaucoma, ensuring both short-term relief and long-term eye health.

Keywords: Acute Glaucoma, Intraocular Pressure (IOP), Gonioscopy

Case History and Observations

Kelly, a 2-year-old female Shih Tzu, was presented to the Teaching Veterinary Clinical Complex, DUVASU, Mathura, with acute onset of ocular discomfort and visual impairment in its left eye. The owner reported that Kelly had been showing signs of eye pain for the past 12 hours, including squinting, excessive tearing, bulge on cornea and rubbing its left eye. There was no history of recent trauma or eye infections. The eye of dog presented is shown in the Fig. 1.



Fig. 1

Physical examination revealed that the patient was alert and responsive. Vital signs, including heart rate, respiratory rate, and temperature, were within normal limits. No abnormalities were detected during the rest of the physical examination.

Ocular Examination: The left eye exhibited moderate conjunctival hyperaemia and chemosis. The

left cornea appeared hazy with extensive oedema. The left eye showed increased Intraocular Pressure (IOP) upon palpation compared to the right eye. The menace response was absent in the left eye. The pupillary light reflex was sluggish in the left eye.

Intraocular pressure (IOP) was measured using a tonometer, and the left eye's pressure was significantly elevated at 35 mm of Hg (normal range: 10-25 mm of Hg). The right eye's IOP was within the normal range at 15 mm of Hg. **Gonioscopy:** Gonioscopy was performed to assess the drainage angle of the affected eye. It revealed a closed or nearly closed angle in the left eye, confirming the diagnosis of primary or Acute Glaucoma. **Ophthalmoscopy:** Ophthalmoscopic examination through ophthalmoscope was performed to assess the status of the lens, optic disk and posterior segment of the eye. The examination showed a shallow anterior chamber and increased retinal thickness in the left eye, consistent with Glaucoma-induced changes. Based on the clinical findings, Kelly was diagnosed with Acute Glaucoma in its left eye. The elevated IOP and clinical signs were indicative of the disease, causing damage to the optic nerve and subsequent vision loss.

Treatment

Immediate intervention was required to alleviate pain and reduce the IOP. The treatment plan included:

*Corresponding author: sapna.perfect@gmail.com

1. Topical Medications:

- Timolol maleate 0.25% eye drops: Administered 2 drops every 12 hours to reduce IOP. Dorzolamide 2% eye drops: Administered 2 drops every 8 hours to further decrease IOP. Prednisolone acetate 1% eye drops: Administered 1 drop every 6 hours to control inflammation.

2. Systemic Medications include

- Oral Mannitol administered as an osmotic diuretic to rapidly reduce IOP. A dose of 1 g/kg body weight was given intravenously.

3. For Pain Management:

- Carprofen 2.2 mg/kg body weight was administered orally every 12 hours for pain relief and to reduce inflammation. The owner was instructed to administer all medications as prescribed and schedule a follow-up visit in 7 days.

Day 7: At the follow-up appointment (Day 7), Kelly's ocular discomfort had significantly decreased. The IOP in its left eye had normalized and the corneal oedema had reduced. The conjunctival hyperaemia was subsided and the mid-dilated pupil had shown some improvement.

Day 15: On the one-week follow-up (Day 15), Kelly's condition had improved further. The conjunctival hyperaemia had subsided completely, and the cornea had cleared upto much extent. The IOP in its left eye remained within the normal range, and the pupil had returned to its normal size with a slight pupillary light reflex. The eye at day 15 is shown in Fig. 2.

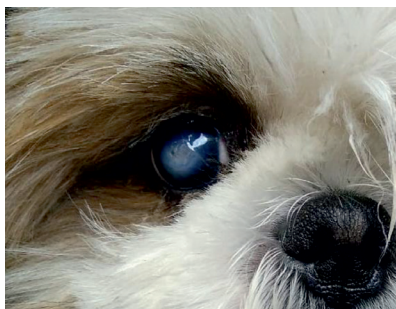


Fig. 2

On Day 30 after one month of continuous treatment, Kelly's left eye had shown substantial improvement. There was no pain or discomfort reported by the owner. Ocular examination revealed a fully responsive pupil, a clear cornea, and a normal IOP. The eye at day 30 is shown in Fig. 3.



Fig. 3

The topical medications were gradually tapered over the next two weeks. The Timolol eye drops were reduced to once daily for another week, while the Dorzolamide eye drops were continued once daily for two more weeks before being discontinued. The Prednisolone eye drops were tapered and eventually stopped after four weeks of initial treatment.

Conclusions

Kelly, the Shih Tzu dog, presented with Acute Glaucoma in its left eye, causing severe discomfort and visual impairment. Prompt and comprehensive treatment with topical and systemic medications, along with pain management, led to a successful resolution of its condition. Regular follow-up visits were crucial to monitor its progress and make appropriate adjustments to the medication regimen. Kelly's overall prognosis for a pain-free and functional left eye is excellent, but long-term monitoring will be necessary to ensure the condition does not reoccur.

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