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Corneal foreign body in a Chippiparai and its successful surgical management

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Abstract

The successful surgical removal of a thorn from cornea of a Chippiparai dog is discussed here. Corneal foreign bodies are rarely encountered in dogs. A two-year old male Chippiparai dog was presented with a history of purulent discharge from the left eye. Close examination of left eye revealed a brown coloured foreign body entrapped in the cornea. There was localized corneal opacity around the foreign body. Under general anaesthesia, two hypodermic needles were utilized for removing the foreign body which was a thorn.

Keywords: Cornea, dog, eye, foreign body, hypodermic needle, thorn

Introduction

Chippiparai is a hound dog that is used for hunting. The shrubs in the forest are often equipped with sharp thorns that may accidentally penetrate the skin of the face, limbs or trunk in these animals. Corneal foreign bodies are rare because of the protective function of the eyelids. There are reports of rarely encountered cases of foreign bodies like grass awns, rose thorns, porcupine quills, air gun pellets and sticks in the corneal wounds. Incomplete penetration of the cornea had less complications in comparison to full thickness penetrating wounds. In the later cases, there were risks of uveitis, lens trauma as well as secondary bacterial and fungal infections [3, 4, 5]. The common clinical signs associated with foreign body penetration in the eyes are excess tear secretion, purulent discharge, and increased blood supply to the site of injury, constant rubbing of the eyes by the animal, blepharospasm, conjunctival hyperaemia and inflamed eyelids [2]. Mostly, penetrating corneal foreign bodies are removed under general anaesthesia and using hypodermic needles [5].

Materials and Method

A two-year-old male Chippiparai dog was presented to the small animal surgery unit, with a foreign body in the left eye which was noticed by the owner a day back. The dog had normal feeding and voiding habits but was dull for the past one day. Clinical examination revealed that there was mild purulent discharge from the left eye. A brown coloured foreign body was seen entrapped in the cornea (Fig 1.). A localized area of opacity could be noticed in the area of entrapment of the foreign body. Pupillary light reflex and dazzle reflex were normal in both the eyes, menace reflex was normal in the right eye, but in the left eye it was barely detectable. There was congestion of the conjunctival mucous membrane. All the physiological parameters were normal. Under general anaesthesia using Inj. Atropine @ 0.045 mg/kg body weight, Inj. Xylazine @ 1 mg/kg b. wt. and Inj. Ketamine @ 5 mg/kg b. wt. (intramuscularly), the foreign body was removed by double needle manipulation utilizing sterile hypodermic needles with minimal horizontal movement of the foreign body. One needle was attached to two millilitre syringe and another needle was used alone for holding the foreign body in position at right angles to the long axis of the foreign body from opposite directions and then, slow upward retraction of the foreign body was made.

Results and Discussion

The retrieved foreign body was a thorn of 0.6 cm length 0.05 mm width at its widest part (Fig. 2.). The thorn was seen lodged in an oblique position penetrating the cornea. After the removal of the thorn there was no oozing of aqueous humor suggesting a partial thickness penetration of the cornea. A wider tract could be seen after the removal of foreign body suggesting an

inflammatory response. Post-operative management included application of eye drops like Gatifloxacin, Hydroxy propyl methyl cellulose and Flurbiprofen TID. Owner was advised to apply an E-collar to prevent self-inflicted eye injury. The corneal opacity reduced after three days (Fig. 3.) and there was improvement in the vision as noticed by a positive menace response. Timely removal of the thorn with minimal manipulation led to prevention of corneal opacity, corneal perforation and infection.

A corneal foreign body may be removed with a cotton tipped applicator or hydropropulsion with eye wash if they are located superficially. Firmly adherent corneal foreign body may be removed using hypodermic needle. Use of single hypodermic needle at an angle parallel to the base of the corneal foreign body had been reported [5,6]. According to the authors, a syringe attached to the needle provided a stronger grip to remove the foreign body and a shorter needle rendered more precise control during manipulation. The extent of complication after the removal of foreign body mostly depends on the depth of penetration of the cornea, the type of foreign body and the technique adopted for removal of foreign body. A full thickness penetration of cornea carried the risk of development of uveitis, dyscoria, vitreous displacement into the anterior chamber, damage to lens, leakage of lens material, outflow of aqueous humor and anterior chamber collapse [3].

General anaesthesia is mostly recommended for removal of penetrating foreign bodies of cornea in dogs, but there are individual reports on use of physical restraint combined with the use of topical anaesthetics like 0.5% proparacaine [2,6]. Though Ketamine is to be avoided in cases of full thickness corneal injury due to its potential to increase intraocular pressure thereby predisposing to corneal rupture [1], there are reports on the safe use of ketamine for corneal surgery in dogs [7].

Use of hypodermic needles for removal of corneal foreign bodies had been reported, but double needle manipulation is not yet reported.

Summary

Corneal foreign body and its successful removal by the use of two hypodermic needles in a hound dog is reported.

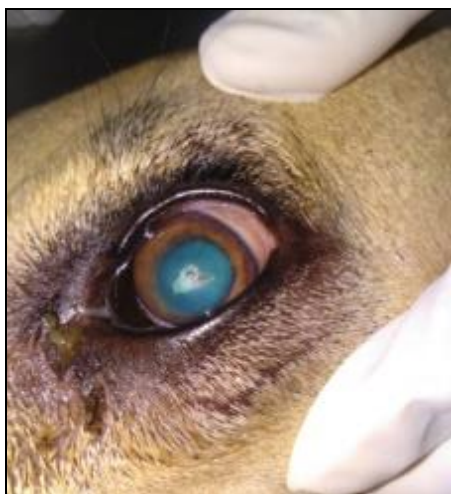


Fig 1: The corneal foreign body in the left eye of a Chippiparai

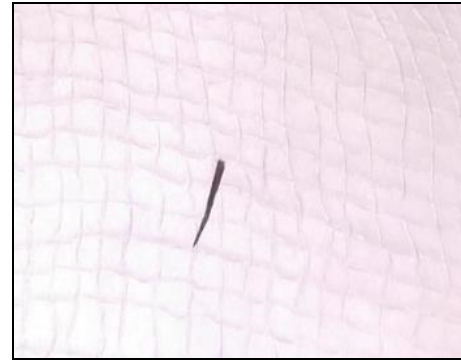


Fig 2: Retrieved thorn from left eye

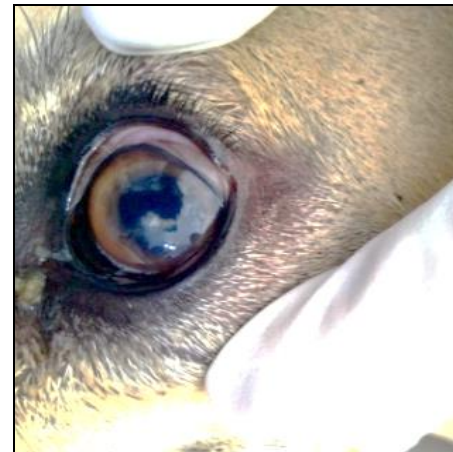


Fig 3: Three days post-operative photo showing marked reduction in corneal opacity

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