Proptosis in a Nigerian indigenous bitch: A case report

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ABSTRACT

A Nigerian local bitch was presented to the Small Animal Clinic of the Veterinary Teaching Hospital of the Ahmadu Bello University, Zaria with unilateral proptosis traumatic in origin. Detailed examination of the proptosed eye revealed a permanent damage to the eyeball. Under general anaesthesia, the condition was managed by enucleation and tarsorraphy. Subconjunctival technique was done in order to preserve as much soft tissue as possible to minimize subsequent orbital depression. No postoperative complications were observed as healing was uneventful.

Case report

Introduction

Proptosis or protrusion of the eye is an anterior displacement of the eye, with subsequent posterior entrapment by the eyelids. It may be unilateral or bilateral (Pessoa and Norberto, 2016). The aetiology is usually traumatic but other causes have also been reported (Dinesh et al., 2010; Vikrant et al., 2012; Fossum et al., 2013; Singh et al., 2013). Proptosis is common in dogs especially in the brachycephalic breeds. Proptosis is a condition that can be treated and often preserve the animal’s vision. However, removal of the eye is indicated in animal which has lost its viability, with no signs of return of sight and it is very painful to the patient (Mitchell, 2008).

The present report puts on a record of an acute case of traumatic proptosis managed successfully by enucleation and tarsorraphy technique in a Nigerian local bitch.

Case report

A 2-year-old Nigerian local bitch weighing 14 kg was referred to the Small Animal Clinic Unit of the Ahmadu Bello University Veterinary Teaching Hospital, Zaria, with the complaint of trauma to the right eye which occurred a day prior to presentation. According to the owner, the bitch was hit by a moving car on the face when it suddenly jumped out of the truck that was conveying it. Immediately after the incident, the bitch was said to have bled profusely from the eye. The bleeding had to be stopped by padding with a piece of cloth. On physical examination, there were elevated pulse rate and respiratory rate while the temperature was within the normal reference value (Table 1).

Other clinical findings were protruded dried nonviable right eye-ball from the socket along with the conjunctiva and the extraocular muscles which was painful on manipulation. There was pain upon palpation around the socket, periorbital swelling, soiled face with dried blood from the haemorrhage (Plate IA). There was presence of ticks on the body of the bitch.

Based on the above clinical findings, a diagnosis of proptosis of the right eye ball was made. Two views (ventro-dorsal and lateral) survey plain radiograph of the head, neck, thorax, and abdomen was carried out which revealed no abnormal findings. Also a work up haemogram of the patient was carried out which revealed no unusual finding but reflective of normal inflammatory response due to the trauma. The patient was therefore scheduled for enucleation and tarsorraphy. In preparation for the surgery, the patient was premedicated with Atropine sulphate injection (Amopin®, Yanzhou Xierkangtai Pharma Ltd, China) at 0.02 mg/kg (0.1%) I.V and Chlorpromazine HCL injection 2.5% (Pauco Chlorpromazine HCL Injection®, Pauco Pharmaceutical Ltd, Nigeria) at 4 mg/kg I.V. The patient was prepared by washing the head, face and proposted right eyeball with copious amount of warm water and antiseptic soap (Dettol®). Thereafter the area around the socket of the right eye was shaved liberally and disinfected with 0.05% chlorhexidine (Plate IB). The patient was then anaesthetised with Thiopentone sodium injection 10% (Pentone® injection, Chandra Bhagat Pharma Pvt. Ltd, Mumbai, India) at 15 mg/kg (10%) I.V. The patient was then placed on the left lateral recumbency on the surgical table and the surgical field...
Table 1: Patients’ vital parameters on the day of presentation

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Patients’ values</th>
<th>Reference Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>39.4</td>
<td>38.5-39.4</td>
</tr>
<tr>
<td>Pulse rate (b/m)</td>
<td>116</td>
<td>70-90</td>
</tr>
<tr>
<td>Respiratory rate (c/m)</td>
<td>Rapid</td>
<td>15-30</td>
</tr>
</tbody>
</table>

* - Reference values provided were according to Hassan and Hassan (2003).

Plate I: A&B; Protruded dried nonviable right eyeball from the socket along with the conjunctiva and the extraocular muscles, with periorbital swelling; C; The protruded conjunctiva was dissected from the protruded nonviable globe along with the extraocular muscle insertions, D; The upper and lower eyelid margins excised to removed approximately 2-3 mm of the eyelid to perform tarsorraphy.

Plate II: A; The eyelids were sutured together using interrupted size 1-0 braided silk leaving a small gap near the medial canthus for drainage, B; Good condition of the wound with no drainage 1 week after the surgery.
draped appropriately. The protruding conjunctiva was dissected from the protruded globe along with the extraocular muscle insertions. Once the eye ball was freed, the optic nerve and the associated blood vessels were ligated using size 1-0 chronic catgut and then transected near the globe (Plate IIC). The upper and lower eyelid margins were excised to remove approximately 2-3 mm of the eyelid (Plate ID), and tarsorrhaphy was then performed by closing the conjunctiva with simple interrupted sutures of size 1-0 chronic catgut and the eyelids using interrupted size 1-0 braided silk leaving a small gap near the medial canthus for drainage (Plate IIA). Postsurgically, Oxytetracycline injection 20 % (Tetranor 20 ®, Shijiazhuang Guanghua Pharmaceutical Co. Ltd, China) at 20 mg/kg I.M, Piroxicam injection (Prazotam® injection, Hubei Tianya pharmaceutical Co., Ltd, China) at 0.3 mg/kg I.M. were all given and an improvised Elizabethan collar was applied on the head of the bitch to avoid self-mutilation. Daily evaluation and dressing of the surgical site was done and by day 7 post-operative, the wound was in good condition with no drainage (Plate IIB). The healing was uneventful and the stiches were removed on day 10 postoperative.

Discussion

Affections of the eye constitute an important part of small animal practice (Akinrinmade and Ogungbenro, 2015). The eye is a very delicate and sensitive organ, the function of which may be affected even with a mild insult due to direct injury or other local or systemic diseases. Several categories of ocular affections have been reported in literatures. In a report from Nigeria by Akinrinmade and Ogungbenro, (2015), proptosis accounted for about 22.94% of ocular affections presented to the clinic. Traumatic proptosis of the globe is always an ophthalmic emergency which requires proper medical and surgical management to prevent further complications (Mahesh et al., 2016). In this report, the case of proptosis in a Nigerian local bitch caused by automobile accident was managed surgically.

Several causes of proptosis have been reported. In humans, bilateral proptosis has been reported as a rare manifestation of acute myeloid leukemia (Dinesh et al., 2010). Vikrant et al. (2012) reported the occurrence of an acute bilateral proptosis in a cross bred calf sequel to natural infection with Theileria annulata. Proptosis has also been reported in cats following traumatic injury to eyeball due to infighting with another cat (Singh et al., 2013). Proptosis is an ophthalmic emergency condition which requires early intervention. Treatment has two goals, one is to maintain and preserve the vision and second is to achieve a cosmetic globe (Wilkie, 2003). In this present case we opted for enucleation because examination revealed a nonviable eye.

The three most commonly described enucleation techniques are the subconjunctival, lateral and transpalpebral approaches (Slatter and Wolf, 1993). In this present clinical case, the subconjunctival technique was conducted in order to preserve as much soft tissues as possible to minimize subsequent orbital depression thus achieving better cosmesis (Slatter and Wolf, 1993). Ali et al (2015) reported complications of intraoperative haemorrhage for enucleation, but in this present case no such complication was observed as ligation was practiced for optic nerve and associated blood vessels. Blindness of the contralateral eye as a postoperative complication have also been reported (Mitchell, 2008). This is usually caused by excess traction of the optic nerve of the damaged globe during enucleation. This traction force on the optic nerve is transmitted to the optic chiasm and may cause damage to the optic nerve of the second eye resulting in blindness. This may manifest as a fixed dilated pupil after surgery. In this present case, special care was taken to avoid traction of the optic nerve during the surgery. Post recovery, the contralateral eye was in good condition.

Conflicts of Interest

None

References


