

Preplacing tarsorrhaphy sutures for bulbus oculi proptosis in Pomeranian dogs

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ABSTRACT: Proptosis of the bulbus oculi is a disorder of the eyeball protruding from the orbit, which generally occurs due to trauma. This paper reports the treatment of bulbus oculi proptosis in Pomeranian dogs using tarsorrhaphy. Tarsorrhaphy is a surgical procedure used to unite part or all of the upper and lower eyelids to close part or all of the eyes. After tarsorrhaphy, the dog was administered an antibiotic combination of penicillin and streptomycin, anti-inflammatory and analgesic meloxicam, and fluid therapy using Ringer's lactate. The antibiotic amoxicillin/clavulanic acid and the blood-boosting drug Fufang E'jiao Jiang were administered orally for 14 days after tarsorrhaphy as prophylactic treatment. Methylprednisolone was also administered orally as an anti-inflammatory agent for 3 days after tarsorrhaphy. Hospitalization was performed for 24 h, and during observation, discharge was observed in the tarsorrhaphy area. Weekly monitoring at the clinic is recommended for owners to observe the condition of the dog's eyes and tarsorrhaphy sutures.

Keywords:

bulbus oculi, Pomeranian, proptosis, *tarsorrhaphy*

■ INTRODUCTION

Bulbus oculi prolapse, or proptosis, is an abnormality in the form of an eyeball protruding from the orbital cavity or eye socket (Mitchell 2008; Dada *et al.* 2019). Trauma is the most common cause of proptosis (Pe'er *et al.* 2019). Prolapse can also be caused by excessive eye pressure that is too high, infection, tumor, and abnormalities in the eye muscles. This condition commonly occurs in brachycephalic breeds such as Shih-tzu, Pug, and Pekingese owing to their shallow orbits, protruding eyes, and poor eyelid closure. The prognosis of bulbus oculi prolapsus is good if the eye can still see mild proptosis, mild extraocular muscle damage, and normal fundus examination (Fossum 2019).

This damage can disrupt eye function as an important and sensitive sense of sight in animals. Early treatment should be performed to prevent permanent damage to the balls. Actions that can be taken to treat this case include enucleation and tarsorrhaphy can also be performed to return the eyeball to the orbit. Tarsorrhaphy is the joining of part or all of the upper and lower eyelids to close part or all of the eyes (Pe'er *et al.* 2019). This paper reports a case of bulbus oculi proptosis in a Pomeranian dog treated with tarsorrhaphy suture at the Royal Purple Vet Clinic, Bojongsoang, Bandung Regency, West Java.

■ CASE

Signalmen: A male Pomeranian dog named Galan, white hair, 8 years old, and body weight of 2.1 kg. **History:** The

dog had bulbus oculi proptosis. The owner suspected that this occurred due to trauma after the dog had played or fought with another dog. **Physical examination:** The axillary temperature was 37.9°C and the mucous membrane was slightly pale. **Diagnosis:** Proptosis of the oculi bulb. **Prognosis:** Fausta. **Therapy:** Part of the eye experiencing proptosis is repositioned by pushing the eyeball back into the orbit of the eye. Next, a temporary tarsorrhaphy procedure was performed using a 4-0 non-absorbable suture and a small intravenous tube to keep the eye in position.

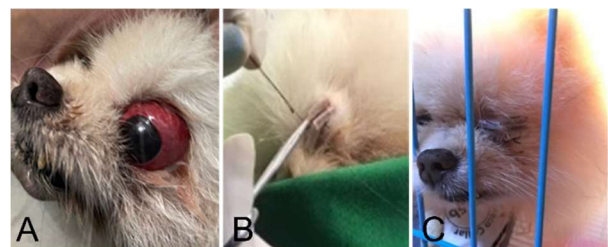


Figure 1. A dog's with eyeball proptosis (A), tarsorrhaphy procedure (B), and condition after treatment for bulbus oculi proptosis (C).

An antibiotic combination of penicillin and streptomycin was administered by intramuscular injection, and the anti-inflammatory and analgesic preparation meloxicam was administered by subcutaneous injection, as well as fluid therapy

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using Ringer's lactate after the surgical procedure. Amoxicillin/clavulanic acid and the blood-boosting drug Fufang E'jiao Jiang® were administered orally for 14 days after surgery as prophylactic treatment. Methylprednisolone was administered orally as an anti-inflammatory agent for 3 days after surgery. Dogs were fitted with Elizabethan collars to reduce the risk of dogs scratching their eye area.

■ RESULTS AND DISCUSSION

Physical examination revealed protrusion of the left eyeball from the orbit, hemorrhage in the subconjunctiva, and swelling of the tissue around the eyeball. Based on the anamnesis, this incident of proptosis was not too long, so it was decided to undergo treatment in the form of eyeball repositioning and tarsorrhaphy. Tarsorrhaphy is a surgery on the upper and lower eyelids to cover part or all of the eyes. The main goal of tarsorrhaphy is to protect the cornea and ocular surface and to support corneal healing (Rajak *et al.* 2015).

Treatment begins with cold compression on the inflamed part of the eye to make it easier to reposition or shift the eyeball into the orbit during the surgical process. After the animal was anesthetized, the ocular surface and periocular skin were rinsed with saline solution, and the eyeball was repositioned by pushing the eyeball back into the eye socket. Next, a temporary tarsorrhaphy procedure was performed, namely horizontal mattress sutures with 4-0 non-absorbable thread and a small intravenous tube in the eyelid to unite the upper and lower eyelids. Small pieces of tubing are used to help prevent necrosis due to pressure on the skin by reducing suture tension (Miller 2013).

Immediately after surgery, antibiotics were administered in combination with penicillin and streptomycin (0.2 ml, intramuscular) to prevent secondary infections, meloxicam (0.2 mg/kg, subcutaneous) as an anti-inflammatory and analgesic, and Ringer's Lactate fluid therapy. Treatment was continued with the administration of amoxicillin/clavulanic acid for 14 days as postoperative prophylaxis, the blood-boosting drug Fufang E'jiao Jiang®, and methylprednisolone for 3 days as anti-inflammatory and analgesic agents (Plumb 2011).

Elizabeth collars are also installed to prevent animals from scratching the eye area. Hospitalization was performed for 24 h, and any discharge or accumulation of mucus was observed in the operation area. Weekly check-ups are recommended to observe the condition of the eye and sutures because the tarsorrhaphy suture often loosens as periocular swelling decreases. A gap between the upper and lower eyelids can cause the suture thread to rub the eye surface, resulting in corneal ulceration.

■ CONCLUSION

Bulbus oculi proptosis can be treated with tarsorrhaphy to protect the cornea and ocular surface as well as to administer antibiotics and anti-inflammatory drugs.

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