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Surgical correction of periorbital abscess in Aseel birds: A report of three cases

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Abstract

Three Aseel birds aged two to five years were presented to the Department of Veterinary Surgery and Radiology, N.T.R. College of Veterinary Science, Gannavaram, with a history of eye swelling persisting for the past few days. Physical examination revealed a periorbital abscess involving the upper eyelid of affected eyes. Based on clinical findings, surgical intervention was planned following stabilization of the patient. The procedure was performed under general anesthesia, with appropriate intraoperative systemic analgesia. A carefully placed surgical incision allowed for adequate drainage of the abscess while avoiding damage to critical ocular structures. Postoperative care included close monitoring and administration of antibiotics to prevent secondary bacterial infection. Birds recovered uneventfully, with complete healing observed within 10-15 days. The aim of this case report is to describe the surgical management of a periorbital abscess in Aseel birds, highlighting a successful approach for pus removal and full recovery.

Keywords: Periorbital abscess, Aseel bird, general anesthesia, incision and drainage, recovery, post-operative care

Introduction

Pet birds are increasingly recognized as important patients in veterinary practice, making knowledge of avian ocular disorders essential. Like other animals, companion birds are susceptible to systemic illnesses, but their unique anatomy, physiology, and high metabolic rate make them particularly sensitive to dietary imbalances (Talavera *et al.* 2007) [6]. Birds fed predominantly seed-based diets are especially prone to vitamin A deficiency, which often leads to periorbital abscess formation (Das, 2022) [4].

A periorbital abscess is a localized pocket of inflammation containing pus, dead cells, and sometimes bacteria, surrounded by a tissue wall. While vitamin A deficiency is often the primary cause, trauma, foreign bodies, and secondary bacterial infections may exacerbate the condition. Birds that consume only one or two types of seeds are most at risk (Corrand *et al.* 2012) [2].

An understanding of avian ocular anatomy is vital for diagnosis and treatment. Birds have highly developed vision, with asymmetrical globes, 10-18 ossicles, and a large orbit. Their eyes are separated by a thin bony septum and closely related to sinuses. They possess three eyelids—the upper, lower, and a well-developed, voluntarily controlled nictitating membrane. Tear production mainly comes from the Harderian gland at the base of this membrane (Das, 2022 & Talavera *et al.* 2007) [4, 6].

In early stages, periorbital abscesses may respond to vitamin A supplementation. However, in advanced cases where pus accumulates and impairs eye movement, surgical drainage is necessary to restore function and prevent further complications.

Case Presentation

Three Aseel birds aged two to five years, weighing 2 to 3 kg, were presented to the Department of Veterinary Surgery and Radiology, N.T.R. College of Veterinary Science,

Gannavaram, with a history of eye swelling, discomfort, unable to open eyes for the past few days (Fig 1, 2 & 3). The birds had been maintained on a seed-based diet. Clinical examination revealed normal temperature, respiration, and pulse rate. However, the bird appeared dull, depressed, and had a reduced appetite. Ophthalmic examination revealed lagophthalmos, redness, squinting of affected eyes. Based on these findings, a detailed ophthalmic examination was planned to determine the underlying cause.

Ophthalmic Examination

Ocular reflex testing is essential for assessing vision in birds. The menace reflex was evaluated by rapidly approaching the eye with an object. A normal blink response was observed in the unaffected eyes, while the affected eye showed limited blinking, along with head withdrawal and aggressive pecking behavior. Palpebral reflex was assessed by gently touching the medial and lateral eyelid margins, and corneal reflex by lightly touching the cornea with moist cotton. Both reflexes were positive in the unaffected eyes, but restricted movement was noted in the affected eyes due to swelling. A fine needle aspiration biopsy (FNAB) was performed above the affected eyes to check for fluid accumulation; however, no fluid was aspirated from the swollen area.

Diagnosis and Treatment

For confirmatory diagnosis, gentle pressure was applied to the swollen upper eyelid, resulting in a noticeable indentation, indicating the presence of an abscess. Upon repeating the fine needle aspiration biopsy, pus was successfully aspirated from the area. Based on these findings, the condition was definitively diagnosed as a periorbital abscess. Surgical removal of the abscess was planned.

The birds were gently restrained in a towel to minimize wing flapping and struggling, then positioned on the surgical table. General anesthesia was induced with intramuscular administration of xylazine (1 mg/kg) and ketamine (20 mg/kg) into the breast muscle. The abscessed area above the affected eyes was clipped, shaved, and disinfected with povidone-iodine before draping.

A small longitudinal incision was made over the lower eyelid using a surgical blade to allow drainage. Pus in liquid form was expressed using gentle digital pressure, while solidified material was removed using cotton tipped applicator and gauze (Fig 4 & 5). The abscess cavity was further cleaned with cotton swabs. After thorough irrigation, a gauze soaked in tincture iodine was placed in the cavity, which was left open for continued drainage. The surrounding area was cleaned with povidone-iodine, and daily dressing with the same solution was advised for five days until complete healing.

Postoperatively, an antibiotic, multivitamin supplement, and antiseptic cream were administered to prevent infection and promote healing. Gentamicin (Inj. Genta, 0.05 ml) was given intramuscularly twice daily for five days to prevent secondary bacterial infection. A multivitamin supplement (Syp. Zipvit) was administered orally twice daily for ten days to support organ function, enhance immunity, improve appetite, and prevent vitamin deficiencies. An antiseptic cream (Intadine) was applied to the surgical site twice daily for ten days to promote healing and prevent contamination. The owner was advised to return for a follow-up after 15 days.

Dietary recommendations included switching from a seed-only diet to a balanced pellet-based diet, along with the inclusion of vitamin A-rich foods such as carrots, sweet

potatoes, mangoes, papaya, and dark green leafy vegetables. At the 15-day follow-up, no complications were observed, and the bird had recovered fully (Fig 6). The abscess had completely healed.

Discussion

The orbit—the bony structure that houses and protects the eye along with associated nerves, muscles, and blood vessels—can be vulnerable to injury and various pathological conditions (Das, 2022 and Kern & Colitz, 2013) [4, 5]. Among these, periorbital abscess is a significant ocular issue commonly observed in pet birds. Swollen eyes caused by periorbital abscesses are frequently reported in species such as budgerigars, African greys, various Amazon parrots, and nearly all other parrot species. These abscesses are also seen in canaries, finches, mynas, toucans, bulbuls, and many other lesser-known avian pets (Das, 2022; Kern & Colitz, 2013) [4, 5].

In the present case, the periorbital abscess was diagnosed through ocular reflex testing and fine needle aspiration. While these methods are effective, several advanced diagnostic tools are also available. Swab samples from the trachea, cloaca, choanae, sinuses, or eyes can be cultured and stained to identify infectious agents. Blood tests and PCR can further aid in detecting pathogens. The Schirmer tear test evaluates tear production, while direct or indirect ophthalmoscopy helps identify ocular injuries, often enhanced by staining techniques. Electroretinography assesses retinal function and detects orbital diseases. Imaging modalities such as X-ray, ultrasound, CT, and MRI provide detailed views of ocular and cranial structures. Additionally, fluorescein staining is essential for detecting corneal ulcers and must be performed before applying any topical ocular medications (Abrams *et al.* 2002 & Das 2022) [1, 4].

In this case, the abscess responded well to surgical drainage and vitamin A supplementation. While vitamin A deficiency is a common cause of periorbital swelling, other factors such as cysts, foreign bodies, trauma, and bacterial infections may also be involved. Periorbital abscesses can arise from local infection, injury, or the entry of foreign material into the eye. If left untreated, the infection may spread from the periorbital area into the orbit, increasing the risk of serious complications.

Although periorbital abscesses rarely cause severe outcomes, orbital abscesses can lead to vision loss or even death. Common causes of orbital involvement include hematogenous spread, trauma, insect bites, or foreign bodies. Bacterial pathogens like *Staphylococcus aureus* and *Streptococcus pneumoniae* are frequently implicated in such cases (Corrand *et al.* 2012) [2].



Fig 1: Bird with swelling of Right eye (Case I)



Fig 2: Bird with swelling of Right eye (Case II)



Fig 3: Bird with swelling of Left eye (Case III)



Fig 4: Removing of pus using cotton tipped applicator (Case I)



Fig 5: Removing of pus (Case II)



Fig 6: Bird on 15th post-operative day (Case I)

Conclusion

An abscess is a localized collection of pus that can significantly impact an animal's well-being. Surgical intervention is often necessary to prevent serious complications. In avian patients, surgery is particularly stressful, and every stage—from history taking and physical examination to preoperative preparation, anesthesia selection, and postoperative care—plays a vital role in ensuring a successful outcome. Abscess drainage is a safe and minimally invasive procedure. It typically requires only a small incision, resulting in reduced pain and quicker recovery for the patient.

Conflict of Interest

Not available

Financial Support

Not available

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