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Successful therapeutic management of swollen eye syndrome due to hypovitaminosis A in a red-eared slider turtles (*Trachemys scripta elegans*): A report of four cases

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Abstract

A One and half-year-old male, four years old female, ten years old male and fourteen years old female red-eared sliders (*Trachemys scripta elegans*) were presented to the Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram with a history of edematous swelling of lower eyelid of both eyes, sluggish movement and anorexia for the last three days. Clinical examination revealed puffiness of eye lids. The case was diagnosed as swollen eye syndrome based on History and clinical examination. Vitamin A and Enrofloxacin were administered intramuscularly, and several appropriate management changes were suggested. Within one month of treatment, the swollen eye became normal, and the turtles made an uneventful recovery.

Keywords: Red-eared slider turtle, swollen eye syndrome, hypovitaminosis A, therapeutic management

Introduction

Interest in exotic pets has been steadily increasing, with the red-eared slider (*Trachemys scripta elegans*), a semi-aquatic turtle, being one of the most commonly kept species. However, these turtles are highly susceptible to nutritional and infectious diseases, often resulting from poor dietary practices and inadequate husbandry (Varshney *et al.*, 2016) [7]. An unbalanced diet can lead to a range of health issues, including ocular disorders. The tissues of the ocular epithelium are prone to vitamin A deficiency (Jacobson, 2007) [5] is a predisposing factor for swollen eye syndrome (Henriksen, 1972 and Varshney *et al.*, 2016) [4, 7]. swimming sessions in warm water infused with tea or aquarium salts (Henriksen, 1972) [4].

Swollen eye syndrome is one of the most common problems of both aquatic and terrestrial turtles which may lead to serious respiratory tract infections if left untreated (Gelatt, 2008) [3]. This condition is most commonly attributed to a deficiency in vitamin A that leads to the gradual deterioration of the epithelial tissues in the eye, making them more susceptible to inflammation and swelling (Marie, 2020) [6]. Treatment typically involves vitamin A supplementation, accompanied by supportive care such as the application of antibiotic ointments, warm boric acid baths, or daily.

Case presentation & Diagnosis

A one and half-year-old male, four years old female, ten years old male and fourteen years old female red-eared sliders (*Trachemys scripta elegans*) weighing 1.3 kg, 1.4 kg, 2 kg and 2.7 kg respectively were presented to the Department of Veterinary Surgery and Radiology, NTR CVSc, Gannavaram with a history of edematous swelling of lower eyelid of both eyes (Fig. 1), sluggish movement and anorexia for the last three days. History revealed that the pet was housed in an aquarium and maintained on a commercially available turtle feed. Physical examination revealed swelling of the lower eyelids of both eyes, eye lids were completely

closed making them practically blind (Fig. 2) without any other detectable abnormalities. At this stage, the owner declined a complete blood count and multiple biochemical analyses, so based on the history and relevance of the symptom with vitamin A deficiency, the condition was diagnosed as swollen eye syndrome due to Hypovitaminosis A.

Treatment

The eyes of the animal were treated therapeutically using parenteral administration of antibiotic Enrofloxacin @ 7 mg/Kg B.wt daily for a week and Vitamin A @ 1500 IU/Kg B.wt weekly once (Varshney *et al.*, 2016) [4] along with topical administration of Moxifloxacin eye ointment twice a day. The owner was advised to change the aquarium water at one to two days interval with groundwater maintaining at 28-32 °C and the pet to be exposed to sunshine for about one hour every day. Advised to feed grated carrot and green leafy vegetables.

Results and Discussion

Re-examining the pet after one and half months revealed that the swollen eyelids had become normal, with no ocular discharge (Fig. 3).

Currently, red-eared slider turtles are popular among exotic pet enthusiasts due to their small size, long lifespan, affordability of care, and ability to adapt to various environmental conditions [Corum *et al.*, 2019] [2]. The symptoms observed in this case resembled those described for swollen eye syndrome in turtles/ tortoises in many reports. In the present case turtles were fed on commercial diet which could be a cause of hypovitaminosis A as stated by Bellhorn, 1973 [1] who mentioned that feeding on commercial diets containing meat and insects without green supplementation aroused suspicion of Vitamin-A deficiency as it has been considered as one of the important predisposing factors of swollen eyes in chelonians (Gelatt, 2008) [3]. The tissues of the ocular epithelium are prone to vitamin A deficiency is a predisposing factor for swollen eye syndrome (Jacobson, 2007) [5]. In this case turtles were treated by parenteral administration of antibiotic Enrofloxacin and Vitamin A as suggested by Henriksen, 1972 and Varshney *et al.*, 2016 [4, 7] who suggested that Vitamin A supplementation is suggested to be the most important aspect of management of hypovitaminosis A, along with regular changes of water. The owner was advised to feed green leafy vegetables and carrots as they are rich sources of vitamin A.

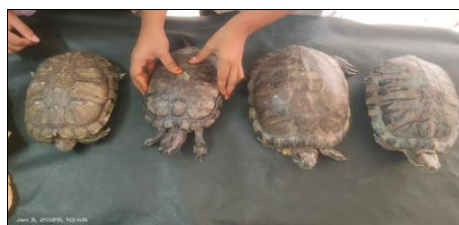


Fig 1: Turtles with swollen eyelids



Fig 2: Photograph showing swollen eyelids (Before treatment)



Fig 3: Photograph showing normal eyelids (After treatment)

Conclusion

The present case was swollen eye syndrome in four red-eared sliders due to deficiency of vitamin A in turtles which was successfully managed therapeutically by parenteral administration of Vitamin A and Enrofloxacin along with providing green leafy vegetables and carrots which were rich source of Vitamin A.

Conflict of Interest

Not available

Financial Support

Not available

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