

Therapeutic management of conjunctivitis and shell rot in a red-eared slider (*trachemys scripta elegans*)

Abstract

Conjunctivitis and shell rot in a Red-Eared Slider and its successful clinical management are described. The Red-Eared Slider was presented to Veterinary Polyclinic Mannarkkad with swollen eyes and white patches on the carapace. Bacteriological culturing and identification revealed the presence of *Pseudomonas* spp in the ocular swab thus identifying the cause of conjunctivitis. The turtle was treated with enrofloxacin bath along with oral metronidazole suspension for 10 days. Superficial lesions on the carapace were treated with diluted povidone-iodine wash followed by application of Chlorhexidine gel. 3% Boric acid was used for washing the eye. Oral vitamin A supplementation was also done. Several managerial changes were also made to hasten the recovery after one week of treatment improvement in the condition of eye observed. Within one month the white patches on the carapace completely disappeared and the turtle made an uneventful recovery. The case points towards the importance of managerial changes that plays a significant role in the health of exotic pet like Red-Eared Slider.

Keywords: red-eared slider, conjunctivitis, shell rot, pseudomonas

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Introduction

Red-Eared Sliders are semi-aquatic turtles that are very commonly kept as pets, due to lack of knowledge about their requirements and due to improper management; most of them are suffering from nutritional and infectious diseases. Among them, conjunctivitis and shell rot is common. High humidity, low temperatures, poor nutrition, and injured skin are all potential factors in the development of bacterial infections in turtles. Gram-negative bacteria that are normally present in the environment are the most common cause of bacterial infection.¹ Conjunctivitis in reptiles may be due to foreign bodies, dirty water, air currents, nutritional imbalances, trauma or genetic predisposition. Vitamin A deficiency can cause a lot of health problems for turtle, including eye infections, lack of sufficient levels of vitamin A can cause the gradual breakdown of epithelial tissues that can make eyes more prone to infection and swelling.² Shell rot is a common condition in turtle or tortoise caused by fungal or bacterial infection. If the infection is not controlled it can rot through the bone and into the body cavity.¹ This paper describes the Therapeutic management of conjunctivitis and shell rot in a Red-Eared Slider presented in Veterinary Polyclinic Mannarkkad, Palakkad.

Case history and observation

A Red-Eared Slider weighing 110g Figure 1 was presented to Veterinary Polyclinic Mannarkkad with the history of anorexia, swollen eyes and some irregular white patches on the dorsal aspect of the shell (carapace) which was noticed two days back. The turtle was housed in an aquarium tank along with other fishes for past one month. It was maintained on a commercially available turtle feed. After proper restraint, physical examination was carried out which revealed whitish spots on the carapace Figure 2 along with swollen and inflamed eyelids. No cracks or wound were present in the carapace. The eyes of the turtle were not visible due to the enlarged and swollen eyelids. Sterile swabs wetted with normal saline were used to collect samples from the eye for microbiological culturing. Before samples were collected the eyes were wiped clean of external secretions so that the samples were not contaminated. The water

sample from the aquarium was also collected for microbiological quality analysis. Bacteriological culturing and identification revealed the presence of *Pseudomonas* spp in the conjunctival swab. Microbial quality of the water sample was poor and contained a high quantity of organic matter.



Figure 1 Red-Eared Slider with swollen eyes and discolored carapace.



Figure 2 The extent of white patches over the carapace.

Treatment

The turtle was treated with enrofloxacin bath (5mg/L) for 30 minutes twice daily along with metronidazole orally at 50mg/kg body weight for 10 days. Superficial lesions on the carapace were

treated with diluted povidone-iodine wash followed by application of Chlorhexidine gel (0.25% Chlorhexidine) during basking period. 3% Boric acid eye wash was advised twice daily. Vitamin A drops were given along with commercial turtle food. The following managerial changes were also made.

- Advised to transfer the turtle from the fish tank to a separate tank.
- Provide a dry area in the tank for basking to prevent continuous wetting of carapace.
- Advised to use distilled water instead of household water to alter the environment microflora and thus eliminating potential opportunistic pathogens.
- Advised to keep the animal in sunlight one hour daily (sunlight is essential for the formation of vitamin D)
- Provide vegetables like carrot, peas etc. along with the commercial turtle food

After one week of treatment improvement in condition noticed, the area of white patches started to reduce in size Figure 3. The eyelids became normal and eyes were visible. One month after the initial presentation, the whitish patches have completely disappeared Figure 4.



Figure 3 Improvement in condition after one week of therapy (decreased area of white patches).



Figure 4 Red-eared slider after one month of treatment.

Discussion

The red-eared slider turtle (*Trachemys scripta elegans*), is a freshwater turtle, belonging to the suborder Cryptodira, family Emydidae. This reptile is one of the most widely distributed

vertebrate species in the world. Due to its small size and low purchase value they are now frequently used as pets.³ The ocular epithelial tissues were found to be very susceptible to vitamin A deficiency,⁴ which is considered as the most important predisposing factor for conjunctivitis in turtle.⁵ Conjunctivitis in turtles is not only an eye disease but also a symptom of respiratory disease or septicemia which can be managed using parenteral antibiotic therapy with vitamin A supplementation.⁶ Along with vitamin A supplementation, adding green vegetables to the diet as a source of vitamin A was recommended. The opportunistic pathogens found in water are responsible for the infection in turtles. *Pseudomonas aeruginosa* is a commensal organism which is found extensively in soil and water as well as in the oral cavity and intestines of reptiles.⁷ Immunosuppressed reptiles are susceptible to pneumonia, keratoconjunctivitis, dermatitis and septicemia caused by *P. aeruginosa*.⁸ In a study conducted by Wendt et al.,⁹ *Pseudomonas aeruginosa* isolated from pet turtles were resistant to amoxicillin, colistin sulfate, streptomycin, cephalothin, trimethoprim, chloramphenicol, imipenem, cefoxitin, and nalidixic acid but sensitive to ciprofloxacin and ofloxacin hence selected enrofloxacin for treatment in the present case. Using baths as the method of administration of antibiotics have an added advantage of reducing stress in animals. It also reduces the risk of overdosing the antibiotic. Antibiotic bath using enrofloxacin along with boric acid eye wash was effective in controlling conjunctivitis immediately, the result obtained was similar to that of İşler et al.,¹⁰ who stated that bath of antiseptic and antibiotic showed a synergic effect in managing turtles with conjunctivitis. The environment in which the turtle lives is very important in controlling stress in animals. A proper plane of nutrition and hygienic environment are more important in preventing diseases caused by opportunistic pathogens that flairs up during stress. In the present case, antibiotic therapy along with topical antiseptics and oral vitamin A supplementation was effective in eliminating the bacteria and early recovery of the animal. Compliance with the ethical standard

Ethical approval

This article does not contain any studies with human or animal participants performed by any of the authors. The article reports a clinical case presented at the Veterinary Polyclinic, Mannarkkad, Palakkad, Kerala. All protocols followed were as per the guidelines from the standard textbooks in Veterinary Medicine and were ethical.

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None.

Conflicts of interest

The author declares that there are no conflicts of interest.

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