

Treatment of Bath with Enrofloxacin in Red-Eared Sliders (*Trachemys scripta elegans*) Suffer from Conjunctivitis and Its Results ^[1]

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Abstract

Conjunctivitis is frequently seen in red-eared sliders (*Trachemys scripta elegans*). If the diseases are untreated, it can cause starvation and death. This study was performed on eleven red-eared sliders with conjunctivitis. Clinical findings were closed eyes, chemosis and unilaterally or bilaterally tear secretion, loss of sight and anorexia. Conjunctival swap samples were taken for bacterial examination. *Aeromonas hydrophyla* and *Pseudomonas* spp. were detected in microbiological analysis. In treatment were performed bath with enrofloxacin solutions (5 mg/L), 3% boric acid solution and oral Vitamin A (5.000 IU/L). In all cases, full recovery was seen following the treatment. This is the first report about enrofloxacin bath for using conjunctivitis in red-eared sliders. As a result; bath with enrofloxacin solutions may be a suitable alternative treatment for red-eared sliders with conjunctivitis.

Keywords: Conjunctivitis, Red-eared slider, *Trachemys scripta elegans*, Enrofloxacin, Bath treatment

Kırmızı Yanaklı Su Kaplumbağaları (*Trachemys Scripta Elegans*) Konjunktivitis Olgularında Enrofloksasin ile Banyo Sağaltımı ve Sonuçları

Özet

Kırmızı yanaklı su kaplumbağalarında (*Trachemys scripta elegans*) sık görülen konjunktivitis vakaları tedavi edilmediği takdirde açlık ve ölümle sonuçlanabilir. Bu çalışma konjunktivitis teşhisi konan 11 kırmızı yanaklı su kaplumbağası üzerinde yapılmıştır. Klinik muayenede kaplumbağaların göz kapaklarında ödem, korneada bulanıklık, tek veya iki taraflı gözyaşı akıntısı ile görme kaybı ve iştahsızlık tespit edilmiştir. Göz konjunktivasından alınan sıvaptan yapılan mikrobiyolojik ekimlerde *Aeromonas hydrophyla* ve *Pseudomonas* türleri belirlenmiştir. Tedavide oral vitamin A (5.000 IU/L), %3'lük asit borik ve enrofloksasin (5 mg/L) solüsyonlarıyla banyo uygulandı. Tedavi sonrası tüm olgularda tam bir klinik iyileşme görüldü. Bu çalışmada banyo tarzında enrofloksasin uygulaması kırmızı yanaklı su kaplumbağalarının konjunktivitis tedavisinde ilk defa denenmiştir. Sonuç olarak; kırmızı yanaklı kaplumbağalar ve egzotik hayvanların göz hastalıklarında enrofloksasin solüsyonu ile banyo tedavisi alternatif bir tedavi metodu olabilir.

Anahtar sözcükler: Konjunktivitis, Kırmızı yanaklı su kaplumbağası, *Trachemys scripta elegans*, Enrofloksasin, Banyo tedavisi

INTRODUCTION

Conjunctivitis is a common disease in turtles and it can be the result of septicemia. For this reason it can be result in reptiles ^[1,2].

It was reported that the damage to soft tissue can cause infection from opportunistic microfloral bacteria

in turtles ^[3]; vitamin A deficiency is seen as the most important predisposing factor ^[1]. Conjunctivitis treatment cover in turtles, antibiotic applications and vitamin A supplementation are recommended ^[1,4].

In this study, a total of eleven red-eared sliders with conjunctivitis, brought to our clinics by their owners, were cured with oral vitamin A and bath treatments with enrofloxacin, 3% boric acid.



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MATERIALS and METHODS

Animals and Management

A total of 11 red-eared sliders with conjunctivitis were evaluated at the Department of the Surgery Clinics, Faculty of Veterinary Medicine, University of Mustafa Kemal. All subjects were female. Out of four cases conjunctivitis was bilaterally affected (*Fig. 1*). Ophthalmological examinations were performed via direct and indirect ophthalmoscopy, due to the subjects' eyes were closed and eye examination was very difficult (*Fig. 2*). The ophthalmological examinations were repeated periodically over five days. Our patient is conjunctivitis, not seen keratitis. Another tissue of eye such as cornea is seen normally. When healing was observed, treatment was finished (*Fig. 3*).

Bacterial Isolation

Samples were taken with non-invasive conjunctival swabs. For this purpose, the seared exudate layer on the eyelid was removed aseptically and conjunctival swab samples were collected. The conjunctival swabs were streaked across blood agar. For the each sample, two blood agar samples were used: one of which was incubated at

37°C, and the other was incubated at 25°C. Isolated strains were identified biochemically^[5].

Therapy

A complete ophthalmological examination was made as part of the conjunctivitis therapy. Initially, a diet high in vitamin A, regular clean water and an appropriate



Fig 1. Appearance of bilaterally conjunctivitis in case 3
Şekil 1. Olgu 3'te bilateral konjunktivitisin görünümü



Fig 2. Appearance of eye examination in case 2
Şekil 2. Olgu 2'de göz muayenesinin Görünümü



Fig 3. Appearance post of the treatment in case 3
Şekil 3. Olgu 3'te tedavi sonrası görünüm

environment was provided. We are suggested use of water with distilled and ambient temperature. The treatment was planned in four stages. In the first stage, the turtles were kept in an empty box for five minutes in order to dry their skin. Second, the turtle's heads were flushed with a 3% boric acid solution. Third, the turtles were treated with baths of enrofloxacin solutions (5 mg/L, Baytril 2.5%, Bayer, Turkey) for five minutes. Fourth, the first applications were repeated, and the turtles were returned to their cages. Finally, the turtles were fed with oral Vitamin A (Deepfix reptivit 30 ml, Mar Kimya Ltd. Turkey). This treatment was applied twice daily.

RESULTS

Water pollution and infrequent water exchange were serious problem in our patient. We recommended of clean distilled and ambient temperature water and water changed daily. Excessive discharge, swollen and closed eyelids, anorexia and deadness were seen both unilaterally and bilaterally in patient. Our six patients is recovery in first five days, another patient is recovery second five days. Cornea is seen normally in repeated periodically over five days, there is not seen keratitis. In the result of the bacteriological examination, *Aeromonas hydrophyla* was isolated from all of the examples; at the same time, *Pseudomonas* spp. were isolated from three of the samples. Bath treatment with 3% boric acid and enrofloxacin were successfully. Eye problems in exotic animals can lead to serious health problems if left untreated. Treatment with enrofloxacin solutions may be suitable for wild and exotic animals, such as sea turtles, in this case red-eared sliders with conjunctivitis.

DISCUSSION

Eye problems are a common ailment among pet turtles. Conjunctivitis in reptiles may be due to foreign bodies, dirty water in its box, air currents, nutritional imbalances, trauma or genetic predisposition [6]. A total of eleven red-eared slider turtles with conjunctivitis were brought to our clinic. Clinical symptoms, bacterial isolations, water pollution and infrequent water exchange were same in our patient. Traumatic factors and air currents were caused unilaterally and another factors such as dirty water caused bilaterally conjunctivitis.

Conjunctivitis in turtles is not only an eye disease,

but also a symptom of respiratory disease or septicemia. Intramuscular antibiotic implementations and vitamin A supplementation are an effective treatment [6-8]. In this study, turtles with conjunctivitis were treated by applying bath-style antibiotics and antiseptic. Furthermore, adding green vegetables to the diet as a source of vitamin A was recommended. We reached that the same conclusion that enrofloxacin use successfully exotic animals [2,5-8]. Bath treatment of antiseptic and antibiotic showed synergic effect. Our patients have been treated, and no recurrence of disease in the post-treatment examinations was observed.

Nowadays red-eared sliders (*Trachemys scripta elegans*) as a pet has been a significant increase in Turkey. For this reason we are noted this cases for the authors interest to the disease and turtles were noted present cases [9]. This study was first valuated turtle populations with conjunctivitis. In conclusion, the bath type of application was considered because, its ease of application, in addition to its reduces the effects of stress and it can eliminate dosing or overdosing risks. This study has concluded that for a turtle with conjunctivitis, simple and successful treatment may be performed with administrations of bath-style.

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