Auricular Abscessation in Red-Eared Sliders
(Trachemys scripta elegans)

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Summary

Four red-eared sliders (Trachemys scripta elegans) at the age of 2 to 5 years old were presented with histories of abscess formation at the base of the auricular area becoming larger over time. Pasteurella testudinis was diagnosed on microbiological examination of the abscessed material in all cases. Treatment included surgical intervention confined to surgical debridement and removal of abscess contents. Enrofloxacin was administered in all operated cases. As a result, lesions resolved with surgical treatment, coinciding with regression of the infection.

Keywords: Auricular abscessation, Red-eared sliders, Pasteurella testudinis

INTRODUCTION

Aural abscessation, swelling due to pue in the tympanic cavity or middle ear, was recently reported to be cause of morbidity and mortality in free-living Eastern box turtles (Terrapene carolina carolina) 1. Mucin-secreting epithelium lining the upper respiratory tract and middle ear of free-living box turtles with aural abscess exhibit varying degrees of pathologic changes, including squamous metaplasia, hyperkeratinization, mucosal hyperplasia, inflammation, and mucosal erosion 2,3. The objectives of the present case report were to describe the treatment, gross and histopathological changes of the four red-eared slider (Trachemys scripta elegans) with aural abscess, and to discuss the relationship of the lesions to the proposed and bacteriologically verified etiological agent.

CASES HISTORIES

Four red-eared slider (Trachemys scripta elegans) had aural abscessation (three unilateral (Fig. 1a) and...
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one bilateral. The ages of the cases were 2, 4, 3 and 5 years respectively. All of them were female and living in a semi-aquatic hobby aquarium with their male mates. The clinical diagnoses were made on the basis of physical examination with microbiological isolation and identification. All were anesthesized with intramuscularly injection of 20 mg/kg ketamine HCl (Alfamine 10%, Egevet, Izmir, Turkey). A 4-5 mm long linear skin incision was performed to the peak point of the swelling. After removal of the pus, the pouch was lavaged with sterile saline and the incision line was sutured. In order to eliminate the infection enrofloxacin (Baytril-K 5%, Germany) was administered at the dose of 10 mg/kg/72 h for 4 times by intramuscular route. None of the cases showed recurrence after the treatment.

Cultures of specimens from which *P. testudinis* was recovered, were inoculated onto 5% bovine blood agar and then incubated at 37°C under 95% air - within 5% CO₂. *Pasteurella testudinis* was identified as gram-negative pleomorphic rods on the basis of hemolytic activity developed at beef blood agar, indole production in tryptose broth, positive oxidase reaction, and lack of motility.

The allocation of the abscesses were unilateral in three and bilateral in one case. Consistencies of the abscess contents were fluctuant in three and caseified in one, bilateral case (*Fig. 1b*). That bilateral case was brought immediately after death for necropsy examination so that this case did not evaluated in the treatment group. But, because the clinical outlook wholly resembled to the study cases, postmortem macroscopic and microscopic evaluation was performed in order to shed light on the study.

Macroscopically, at the cut surface of the 5 mm diametered, firm, bulged swelling; caseified, yellowish coloured, chronic abscess formation surrounded with fibrous capsula was observed.

At the microscopic examination, some of the stratum spinosum cells were seen to be swelled and rounded, with their cytoplasms show a granulary outlook whilst some of which contained cytoplasmic vacuol formations. Also significant thickening in the keratin layer was observed. In dermis; distinct hyperemia, lymphocyte infiltration accompanied by heterophils and microhemorrhagic foci were seen (*Fig. 1 c,d*).

**DISCUSSION**

The effects and the role of those bacteria on free-ranging green turtle populations are not very well recognized. The presence of potential pathogenic bacteria in free-living turtle tissues everytime does not show illness and should be evaluated with regard to the various stressor conditions. During mating behaviour, the superficial tissues of female turtles may be injured by male bites and claws. Especially skin lesions and sea water aspiration are the most common routes for the entrance of microorganisms in sea turtles ⁴,⁵. Therefore the microorganism found in this study may be considered to be an opportunistic pathogen. It is also possible that concomitant diseases and/or environment-associated,
reproductive, hormonal or other stressors, may affect the immune system and result in abscess formation. Disrupted vitamin A metabolism, poor water quality and/or contaminated water are emphasized as to be pre­disposing factors for the formation of aural abscesses 3,6.

In a retrospective study carried out in Wild Life Center of Virginia between 1991-2000, 50 of 694 reptiles were (7%) examined for aural abscessation 1.

In this study, P. testudinis was the common micro­organism. In most of the reptiles, the latter microbe has been considered a resident flora, where as it has also been associated with ulcerative stomatitis, abscess, hypopyon, necrotizing dermititis, and pneumonia in turtles and reptiles 7-10.

According to the latter authors discussed the assessment of P. testudinis as a similarly commensal agent with at most opportunistic pathogenic potential. However it should be mentioned that the presence of P. testudinis in turtle abscesses does not always indicate to a specific pathogenic role of this agent in this condition, as it may be a common commensal. Sparsely abscess due to P. testudinis of turtles and tortoises was previously reported. Therefore in the authors experience P. testudinis may play a more specific role in abscess formation of turtles 11.

In present study, death was thought to be occured due to septicemia origining from chronic abscess at the auricular area with inflammatoric changes and progressive hyperemia of liver and intestines.

During the last decade there has been a significant increase in the number of red-eared slider (Trachemys scripta elegans) as a pet in Turkey. Therefore the present authors interest to the diseases of those turtles was aroused following recognizing the present cases. Further studies with larger turtle populations with abscess formation may be valuable in order to establish the nature and pathology of those diseases in Turkey.

REFERENCES