HEALTH & DISEASES

This column is taken care of by the "Studygroup for Diseases and the Optimum Keeping and Breeding of Terrarium Animals" of the Belgian Society "Terra". If there is a question concerning health or diseases, feel free to contact the President of the Studygroup: Mr. Hugo Claessen, Arthur Sterckstraat 18, 2600 Berchem, Belgium. He will try to answer your question in this column to the benefit of all members.

USE OF AN AUTOGENOUS VACCINE FOR THE CONTROL OF RECURRENT MOUTHROT IN *PYTHON MOLURUS BIVIITATUS*.

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SUMMARY

A python (*Python molurus bivittatus*) with chronic recurrent mouthrot (infectious stomatitis) was successfully treated with an autogenous vaccine. The vaccine was prepared using an *Aeromonas hydrophila* recovered from an active lesion in the snake's mouth and from nasal discharge. In view of the excellent response to the use of the vaccine, both in treatment and prevention of the condition,

it should now be considered as an adjunct or even an alternative to antibiotic therapy.

INTRODUCTION

Mouthrot or infectious stomatitis is a common condition in captive snakes (Burke et al, 1978; Draper et al, 1981; Ross & Marzec, 1984; Lawrence, 1985). In general the bacteria recovered from such cases are Gram-negative rods, with a restricted antibiotic sensitivity (Lawrence, 1983). The most common bacteria isolated are *Aeromonas hydrophila* and *Pseudomonas aeruginosa* (Cooper & Leakey, 1976; Burke et al, 1978; Cooper, 1981; Draper et al, 1981). Often the only antibiotic to which they are sensitive is gentamicin (Gentacin, Nicholas Laboratories), which is known to be nephrotoxic in snakes (Jacobson, 1976; Montali et al, 1979). However many snakes respond to a simple treatment regimen based on daily cleansing of the oral lesions with a povidone-iodine solution (Pevidene, Berk Pharmaceuticals), which may be augmented with parenteral antibiotic treatment. It is not uncommon, in large constricting snakes, to see an individual repeatedly with recurrent severe mouthrot which requires parenteral gentamicin therapy. Repeated use of gentamicin, even at the dose rate suggested by Bush et al (1978), can lead to fatal kidney damage. As long ago as 1974, Addison & Jacobson had shown that the use of an autogenous bacterial vaccine was effective in treating chronic severe mouthrot in a reticulated python (*Python reticulatus*). Jacobson (1985) has also shown that a vaccine can be used successfully to treat chronic, recurrent mouthrot and respiratory disease in pythons and boas.

CASE HISTORY

A five year old, male, python (*Python molurus bivittatus*) weighing 7.3 kg and measuring approximately 2.8 m was presented to one of the authors (KL) for clinical examination. The snake had been seen on a number of occasions over a three year period with similar clinical signs. The presenting symptoms included: mouthrot with excessive saliva production, bubbling respiration with excessive fluid in the trachea and nasal passages, slow tongue movements.

The repeated incidents had lead to intermittent loss of appetite which had resulted in a poor growth rate. This accounted for the low body weight of the snake.

On each occasion the mouth lesions and the fluids from the nose were sampled for bacteriological examination. *Aeromonas hydrophila* was isolated from all the swabs examined and each isolate had a similar antibiotic sensitivity. Treatment followed a similar pattern during each outbreak. The mouth was swabbed daily with full strength povidone-iodine surgical scrub (Pevidene, Berk Pharmaceuticals) and neomycin/corticosteroid drops (Betsolan ear and eye drops, Glaxovet) were instilled into the nostrils. In view of the severity of the condition a course of gentamicin (Gentacin, Nicholas Laboratories), by injection, was undertaken. The course consisted of three subcutaneous injections at intervals of three days at a dose rate of 2.5 mg/kg bodyweight (Bush et al, 1978). The snake was maintained at a temperature of 25^{0}C during therapy.

After each course of treatment the condition cleared up and the snake commenced eating. However over a period of three years the condition recurred with shorter and shorter time intervals between treatments. It became evident that the risks of kidney damage from protracted treatment with gentamicin,

the only effective antibiotic, were unacceptable. Therefore in late 1985 it was decided to try the use of an autogenous vaccine, based on bacteria recovered from the snake's mouth and respiratory tract.

USE OF AUTOGENOUS VACCINE

The Autogenous vaccine was produced as described by Jacobson (1985). A pure culture of the *Aeromonas hydrophila* recovered from the snake was grown in 100 ml of trypicase soy broth, followed by the addition of 3 ml of a 50% aluminium hydroxide gel and 0.3 ml of a 40% formaldehyde solution. The vaccine so produced was administered by intramuscular injection. The dosage regimen being 0.5 ml every 72 hours for 18 injections, weekly for 12 injections and a final dose one month later.
A total treatment of 31 injections spread over a period of 24 weeks. The injections were administered in the middle third of the body on alternating sides and injection reactions were noted. For the first three weeks the mouth was cleansed on injection days with povidone-iodine solution (Pevidene surgical scrub, Berk Pharmaceuticals).
Most of the injections caused a localised site reaction. The first sequence of injections caused marked reactions which took up to seven days to go down. After the sixth injection the degree of reaction diminished with the swelling disappearing within two to three days.

OUTCOME OF TREATMENT

After nine injections the mouth had completely resolved and from that time the general health improved markedly. The mouth and nasal passages were clear of infection and the wheezing had disappear-

ed. The snake has put on a lot of weight since the start of the treatment because it has been free of this recurrent infection for more than a year, this has lead to an increased food intake.

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