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Research Article

Trauma healing and post-trauma rehydration in a *Boa constrictor*: case report

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ABSTRACT - Dehydration is a common clinical situation, especially in sick or traumatised reptiles. The objective of this paper was to report procedures of trauma handling and post-trauma rehydration in *Boa constrictor*. On visual inspection, a laceration was observed on the right ventro-lateral region. The wound handling demanded local antisepsis and healing antibiotic balm. The snake had perfect healing of the lacerated area; however, there were episodes of inappetence, severe dehydration and emaciation. It was prescribed oral rehydration, multivitamin supplement, assisted feeding and water soaking baths. After six weeks from admission, the snake had regained around 83% of its lost weight, performed ecdysis and started spontaneous feeding.

INTRODUCTION

Dehydration and weight loss are common clinical conditions in sick or traumatised reptiles. These conditions might be the result of anorexia or pathological processes of several aetiologies, and they could be noticed on physical examination (Paranzini et al., 2008). Rehabilitation in captive reptiles is rarely recorded. This paper describes rehydration and body mass rehabilitation of a traumatised *Boa constrictor,* received by the Núcleo Regional de Ofiologia da Universidade Federal do Ceará.

CASE HISTORY

A young, female, wild common boa (*Boa constrictor)*, measuring SVL = 58.8 cm / TL = 6.7 cm and weighing 105 g, was collected on Taíba Beach, municipality of São Gonçalo do Amarante, Ceará. It was brought to Núcleo Regional de Ofiologia da Universidade Federal do Ceará (NUROF-UFC), a scientific snake collection and herpetological research laboratory, after sustaining an injury from a collision with a tractor.

On visual inspection, the snake seemed alert, with normal movements, body condition and hydration status. A laceration was noticed at the right ventro-lateral region, measuring 3.0 x 1.4 x 0.4 cm, 7.0 cm from the snout. An oesophagic probe was passed through the oral cavity, and no discontinuity of the oesophagus was noticed. A 10 g young mouse was offered to the snake, which showed normal senses and reflexes, including normal strike and constriction. However, during deglutition, eventration of the oesophagus could be observed (Fig. 1), due to the lesion of muscle tissue of the body wall. The prey remained in the injured portion of the oesophagus for an abnormal length of time, and so, regurgitation was stimulated.

Treatment of the laceration comprised local antisepsis with saline solution and application of penicillin/urea balm once a day, achieving good results (Fig. 2). Within 25 days of treatment, the laceration had healed perfectly; nevertheless, there were some inappetence episodes, which were most likely associated to

Figure 1. Oesophagus eventration. Note the sacculation by the time of deglutition of a 10 g mouse (arrow).

Figure 2. Trauma healing. Note the scar, 20 days after the start of the treatment (arrows).

general stress linked to trauma in the oesophagus wall. During the next four months, some procedures were used to improve the snake's body condition and hydration status. In the first three weeks after admission, the snake lost 30% of its initial body mass, reaching 69 g. It became lethargic and anorexic, with dry, folded skin.

Oral fluid therapy was applied for twenty days, using a steel feeding tube with mineral water and multivitamin supplement (Vitamins A, B complex, D and E). In addition, assisted

feedings with newborn mice were performed weekly (2-5 g). Fluid therapy dosage varied between 10 to 30 ml/kg daily, as per Donaghue (2006), being progressively adjusted in line with the increment in body mass. 10 ml/kg were used in the first five days of treatment; 20 ml/kg in the next ten days and 30 ml/kg in the final five days of the period of rehydration. The stress was assumed to have aggravated the general condition of the snake, which had dysecdysis secondary to anorexia and dehydration. Its skin became very fragile and started to disrupt, because of the frequent handling. The shed skin started to be retained, especially around the skin disruptions.

Soaking baths in tap water at 30ºC were performed as per Fitzgerald and Vera (2006) to help the shedding (twenty minutes daily / ten days) and babosa leaf resin (*Aloe vera*) was applied to the skin and its disruptions (five days). Sunbathing (30 minutes daily) was also performed. After six weeks from the beginning of treatment, the snake reached a body mass of 96 g, recovering 83% of its lost weight. Complete ecdysis had developed imperfectly and more slowly than normal, occurring within fifteen days, but the new skin appeared fresh and without folds. One month after the end of the therapeutic procedures, four months after its arrival in NUROF-UFC, the snake started to feed on young mice (10-15 g) without assistance. It exhibited weak constriction at first, but regained strength in the following weeks.

DISCUSSION

Reptile's nutritional needs are greatly affected by its metabolism which in turn is greatly affected by its diet. Variations in temperature also play a key role in the metabolism of reptiles (Craft, 1997). Captivity does not always provide the best conditions for keeping reptiles in good health; thus, many clinical situations occur due to husbandry failures.

Secondary anorexia was diagnosed in this snake, because it was not related to the appetite centre of the nervous system. Traumatic oesophagitis was most likely the direct cause, because the inflammatory response usually affects the neuroendocrine regulation of feeding (Kuininger, 1990; Dunn, 2001). Another possible determinant was the change in deglutition biomechanics in the subject snake. The oesophagus in snakes has no important muscle layers acting in peristalsis, unlike in mammals, so deglutition is performed by the movements of axial musculature and skeleton (Funk, 2006).

Anorexia in wild reptiles is influenced by specific physiological states, such as reproductive season and ecdysis, and environmental factors like seasonality (Lourdais et al., 2002; O'Donnell et al., 2004; Funk, 2006).

As reported by Donaghue (2006), energy requirements increase in proportion to the complexity of each metabolic process, for instance feeding, locomotion, growth and healing wounds. Therefore, trauma was another factor, requiring adjustment to the food and water consumption of this snake.

According to Fitzgerald & Vera (2006), dysecdysis is not a primary disease, but a symptom of a subjacent pathology. They advise soaking baths daily until the skin can be totally removed, which usually resolves the dysecdysis within two days, and also contributes to the snake's water consumption. These last authors warn that pieces of shed skin can be retained around scars of wounds, and should be gently removed. The use of babosa *(Aloe vera*), natural or in topical formulation, is indicated for treatment of several dermatopathies. Babosa resin was efficient, strengthening the healing wounds and acting as an emollient in sites of retained pieces of shed skin (Chithra et al., 1998; Fitzgerald & Vera, 2006; Hernandez-Divers, 2006).

The correction of hydration status and body mass in captive snakes does not demand complex procedures, but the understanding of connections between thermoregulation, nutrition and ecdysis was very important to the composition of the treatment.

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