Veterinary Letters
ISSN 2581-2416
DOI: https://dx.doi.org/10.29244/avl.8.3.49-50
https://journal.ipb.ac.id/index.php/arshivetlett

Clinical diagnosis and therapeutic approach for stomatitis in an albino-reticulated python (*Malayopython reticulatus*) at Gembira Loka Zoo, Yogyakarta, Indonesia

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ABSTRACT: This case report highlights effective treatment strategies for stomatitis in reticulated pythons, providing valuable insights into veterinary care in reptile conservation. Albino-reticulated pythons (*Malayopython reticulatus*) play a crucial role in maintaining ecological balance as predators, making their health essential for conservation. At Gembira Loka Zoo, Yogyakarta, Indonesia, an albino python was reported by the zoo keeper to have been off feed for approximately 1-2 months. An attending veterinarian from the reptile unit conducted a thorough examination, revealing inflammation in the mouth and mucosal tissue, along with missing teeth. The affected tooth was extracted to prevent further aggravation of the condition. Treatment included the application of an antiseptic spray containing 0.2% chlorhexidine digluconate and Oxyfresh Dental Gel to the inflamed areas of the mouth. Additionally, supportive therapy with Hematodin was administered. Python showed significant improvement after nine days of treatment, with reduced inflammation and a gradual return to health.

Keywords:
snake, *Malayopython reticulatus*, stomatitis, mouth rot

■ INTRODUCTION

Nature conservation is critical in preventing animal and other organisms' extinction. In conservation efforts, maintaining animal health is essential to ensuring the success of these initiatives. Healthy and thriving wildlife are more likely to survive, reproduce, and sustain their species' populations. Reptiles, particularly snakes, are a crucial focus of conservation. Indonesia is home to 16% of the world's reptile species, with over 1,100 species recorded (Iskandar & Erdelen 2006). Snakes, significant in conservation because of their role as natural predators, play a vital role in controlling populations of species that could become agricultural pests, such as rodents and pigs (Mullin & Seigel 2009). However, limited knowledge of snake biology poses challenges in managing sick snakes in conservation institutions. This case study details the treatment of an albino-reticulated python (*Malayopython reticulatus*) suffering from chronic stomatitis in Gembira Loka Zoo Yogyakarta, Indonesia.

Chronic or ulcerative stomatitis, commonly known as '*mouth rot*', is prevalent in snakes. It often results from trauma to the skin and mucosa of the upper lip, caused by cage strikes or injuries during predation, followed by secondary bacterial infections. If left untreated, stomatitis can lead to severe health issues such as gingivitis, dermatitis, and osteomyelitis, causing severe deformation of the jawbones. Aspiration of debris from the infected oral cavity can also result in pneumonia or septicemia, ultimately leading to death (Legowo *et al*. 2012). This case study underscores the need for the immediate and effective treatment of stomatitis. Conventional treatments for stomatitis, such as hydrogen peroxide and mouthwash, are commonly used but have significant drawbacks. Both are cytotoxic and can harm healthy tissue as well as diseased areas. Wijayakusuma (2008) noted that the use of non-cytotoxic antiseptics on snake skin and gum tissues is crucial. This case study aims to guide conservation organizations in selecting appropriate treatments for stomatitis in snakes, emphasizing the need for caution and the search for safer alternatives.

■ CASE

The initial step in the treatment process involved thorough physical examination. The python was carefully restrained by securely holding its head while the mouth was gently opened using a stainless-steel mouth gag to prevent biting (Figure 1). Once the mouth was safely opened, tooth extraction was performed in the areas affected by stomatitis using sterile tweezers to minimise the risk of further infection. The prescribed treatment included the application of an antiseptic spray containing 0.2% chlorhexidine digluconate and

Received: 24-05-2024 | **Revised:** 21-06-2024 | **Accepted:** 25-06-2024

Oxyfresh Dental Gel, with oxygen as the active ingredient. These medications were applied topically to the affected areas of the snake's mouth to ensure targeted treatment and to promote healing.

■ RESULT AND DISCUSSION

Snakes, whether in captivity or in the wild, can develop chronic or mucosal stomatitis, particularly in the upper lip, due to trauma from cage strikes or injuries sustained while preying on rodents. Secondary infections often lead to these injuries. In this case, blood tests did not indicate systemic infection, suggesting that the stomatitis resulted from trauma rather than bacterial causes. Figure 1 illustrates the clinical diagnosis and treatment of stomatitis in an albino-reticulated python (*Malayopython reticulatus*) in Gembira Loka Zoo, Yogyakarta, Indonesia. In Figure 1A, there is visible inflammation of the mucosal tissue, indicative of the initial stage of stomatitis. Figure 1B shows healing progression, with a notable reduction in mucosal bleeding and inflammation following treatment. These visual representations highlight the effectiveness of the treatment regimen in addressing the condition of the snake.

During the examination, a missing tooth was identified and promptly removed to prevent further aggravation of the inflammation. The treatment regimen included the application of an antiseptic spray containing 0.2% chlorhexidine digluconate, along with Oxyfresh Dental Gel (Oxyfresh USA), to the affected areas. Supportive therapy with Hematodin (PT Romindo Promavetcom, Indonesia) was administered to promote healing and stimulate the snake's appetite. Chlorhexidine digluconate 0.2% was utilized to inhibit bacterial growth in the oral cavity, while Oxyfresh Dental Gel, containing chlorine dioxide, provided antimicrobial action. Additional ingredients, such as Matricaria extract (*Chamomilla recutita*), helped reduce swelling (Widagdo *et al*. 2015), and glycerin played a role in infection management. Hematodin further supported wound healing and appetite restoration, contributing to the overall recovery of the snake.

In cases of bacterial stomatitis, supportive therapies such as vitamins A and C can accelerate healing, and enrofloxacin may be administered intramuscularly along with topical treatments such as sodium sulfamethazine (Singh *et al*. 2018). After nine days of treatment, the python showed significant improvement, regaining its appetite and consuming two whole chickens, just slightly below the typical intake of three chickens. The snake showed a moderate degree of infection and a positive recovery trajectory.

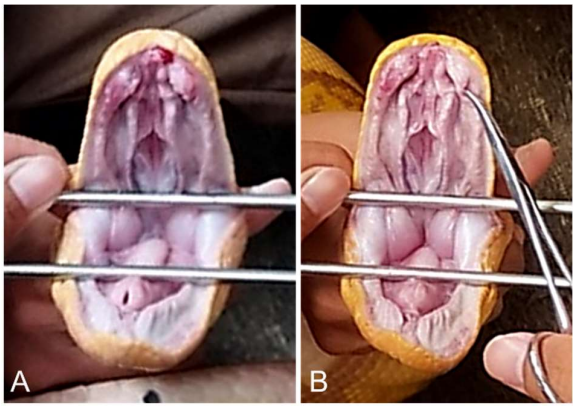

Figure 1. Clinical diagnosis and post-treatment revealed stomatitis in an albino-reticulated python (*Malayopython reticulatus*) at Gembira Loka Zoo, Yogyakarta, Indonesia. (A) Inflammation of the mucosa. (B) Bleeding and inflammation of the mucosa that has improved.

■ CONCLUSION

Stomatitis in snakes can result from trauma or bacterial infections. Proper treatment, including the administration of antibiotics, antiseptics, and supportive therapies, can significantly accelerate healing and improve recovery outcomes.

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