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Surgical management of a lacerated wound and rehabilitation of a rescued Indian rat snake (*Pythas mucosa*): A case report

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Abstract

A clinical case of Indian rat snake was presented with a laceration at ventral and lateral surface of the cranial one third portion of the body. The snake was anaesthetized with inj. Midazolam HCl @ 1.5 mg/kg I/M and Ketamine HCl @ 20 mg/kg I/M cranial half of its body. The wound was irrigated with diluted lukewarm normal saline solution and scales were sutured using polyglactin 910 (2-0) in a simple interrupted pattern. The snake recovered successfully after 10 days of close management and supportive care and was later handed over to the local Forest Department for released in the nearby forest area.

Keywords: Indian rat snake, laceration wound, ketamine anesthesia, wound suturing, wildlife rehabilitation

1. Introduction

The Indian rat snake, is a widely distributed non-venomous colubrid species occurring across South and Southeast Asia, ranging from sea level up to elevations of 4000 m (13,120 ft.). This species inhabits diverse environments including forest floors, wetlands, rice fields, agricultural lands and suburban regions, where it feeds primarily on small reptiles, amphibians, birds and mammals (Whitaker and Captain, 2004) ^[9]. These snakes are commonly encountered in highly urbanized regions as well as rural settlements, primarily due to the abundance of rodents associated with human habitation. Consequently, they are frequently involved in human-wildlife conflicts, often resulting in traumatic injuries. Such cases are regularly reported to wildlife veterinarians and rehabilitation centers across India (Muliya, 2013) ^[7]. The present case study describes the successful surgical management of a lacerated wound in an Indian rat snake followed by its successful rehabilitation and release back into the wild.

Case presentation

A rat snake rescued by a local volunteer was presented to the School of Wildlife Forensic and Health, Jabalpur. Upon clinical examination, transverse laceration was observed on the ventral and lateral surface of the cranial one third portion of the body, just above the cardiac area. The snake weighed 0.74 kg and measured approximately 5.4'ft length. Despite the trauma, the snake remained alert and exhibited defensive behavior, although the wound was fresh and contaminated with mud and debris (Fig. 1). A preanesthetic combination of Inj. Ketamine @ 20mg/kg IM (Ketmin® 50) and Midazolam @1.5mg/kg IM (MedzolTM) was administered in cranial half of the body. Local anesthesia with inj. Lignocaine @1.5 ml was infiltrated locally.



Fig 1: Transverse lacerated wound

Induction took place after 20 minutes noted by the loss of muscle tone. The anesthesia was maintained with isoflurane at 2% (ISOTROY® 250). The heart rate remained relatively stable at approximately 95 beats/min, as determined by auscultation, while the respiratory rate was maintained at around 5 breaths/min throughout the procedure. After induction, the wound was irrigated with diluted lukewarm normal saline solution and scales were sutured using polyglactin 910 (2-0) in a simple interrupted pattern (Fig. 2). The surgical wound was subsequently covered with an antiseptic



Fig 2: Scales were suture with simple interrupted pattern

bandage to prevent contamination and promote proper wound healing. Post operatively, the snake was administered with 18ml of Reptile Ringer's solution subcutaneously along with Inj. Meloxicam was administered @0.2mg/kg b. wt. I/M. Enrofloxacin was administered at @5mg/kg subcutaneously and continued for 3 days. Wound dressing was done alternate day and an antiseptic spray was also used to prevent contamination and support wound healing. The snake recovered completely from anesthesia without any complication. The snake recovered successfully after 10 days of close management and supportive care and was later handed over to the local Forest Department for released in the nearby forest area.

Discussion

Traumatic injuries in reptiles, particularly snakes, present significant challenges in both diagnosis and clinical management (Modi *et al.*, 2025) ^[6]. In reptiles, the administration of safe and effective anesthesia and analgesia poses considerable challenges for veterinary practitioners. Most anesthetic protocols in reptiles are formulated using inhalational anesthetic agents for both induction and maintenance of anesthesia (Dubey *et al.*, 2016) ^[2]. Maintaining appropriate thermal support during anesthesia is crucial in reptile patients to ensure that body temperature remains within the optimal physiological range. A heat pad was used to maintain the preferred body temperature

throughout the procedure (Herrin, 2017) ^[4]. A hypothermic reptile will have compromised metabolic function and induction as well as recovery from the anesthetic event will be delayed (Kischinovsky *et al.*, 2013) ^[5]. The snake was restrained and anaesthetized using inj. Ketamine @ 20mg/kg b.wt IM and Midazolam @ 1.5 mg/kg IM. Ketamine can be used in reptiles at dosages of 10- 20 mg/kg and Midazolam can be used upto 2 mg/kg (Sladky *et al.*, 2022) ^[8]. In most reptile species, inhalational anesthetics are considered the agents of choice, with induction typically occurring within 6-20 minutes and recovery usually achieved within 30-60 minutes. In the present case, inj. Enrofloxacin was used for its antimicrobial effect against post-surgical infection. However, IM administration may cause pain, tissue necrosis, or sterile abscesses, while SC administration may lead to skin discoloration; therefore, dilution with sterile NaCl before SC administration is recommended (Griffioen *et al.*, 2020) ^[3]. Divers *et al.* (2010) ^[1] reported that inj. Meloxicam appears to be a safe and effective drug in snakes and does not produce adverse effects even at high doses. After treatment, the snake was handed over to the local rescue team.

Summary

Human-wildlife conflict commonly results in traumatic injuries in the Indian Rat Snake. An Indian rat snake was rescued with a lacerated wound near the cardiac region was presented for treatment and successful surgical management was performed. Surgical repair was performed under general anesthesia, followed by antimicrobial therapy, analgesia, fluid support and wound management. Complete recovery was observed within 10 days, after which the snake was released into its natural habitat.

Conflict of Interest

Not available

Financial Support

Not available

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