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Successful management of an open vertebral fracture in a rescued green vine snake (*Oxybelis Fulgidus*)

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Abstract
An adult *Oxybelis fulgidus* (green vine snake) that had been rescued had an open vertebral fracture from blunt trauma. Clinical, radiographic, and therapeutic measures were employed to restore mobility and guarantee effective rehabilitation under veterinary supervision. The snake's wounds healed well, and it was able to move normally again before being released. This case demonstrates that conservative management comprising antisepsis, external stabilization, and pharmacological support can result in successful recovery of wild snakes with vertebral fractures. The case also shows how important it is to act quickly and think about the species when treating reptile injuries.

Keywords: *Oxybelis fulgidus*, vertebral fracture, reptile medicine, wildlife rehabilitation, wound healing, ecdysis

Introduction
The green vine snake (*Oxybelis fulgidus*) is a slender, arboreal colubrid native to tropical forests across South and Central America and southern India. Due to their elongated morphology and delicate skeletal structure, these snakes are predisposed to traumatic injuries such as vertebral fractures resulting from anthropogenic activity or environmental hazards (Mader 2006, PetMD 2016) [4]. Fractures in reptiles differ from those in mammals because of slower bone metabolism, lower vascularization, and temperature-dependent healing (Fowler and Miller 2015) [3]. Bone healing can take months to over a year depending on environmental and nutritional status (Rinaldi *et al.* 2013) [6]. Despite the wide distribution of colubrids, reports describing vertebral trauma management in snakes are rare compared to limb or shell fractures in chelonians and lizards. A recent meta-analysis documented a 0.21% prevalence of spinal deformities in wild reptiles globally, although data on acute vertebral fractures remain limited (Biology 2025) [1]. Here, we describe the successful clinical management of an open vertebral fracture in a rescued *O. fulgidus* using conservative wound care and external stabilization, adding to the limited literature on reptilian vertebral injury management in wildlife practice.

Case Description
Signalment and History
An adult *O. fulgidus* was rescued after accidental blunt trauma from a metal pipe. Open wound with active bleeding and impaired mobility of the caudal third of the body was reported.

Clinical Examination
The snake appeared alert with clear spectacles (eye caps). On distant examination, no ectoparasites were seen (Figure 1). A small open wound (0.5 cm) exposing vertebral tissue was observed near the caudal region with active bleeding (Figure 2). Locomotion was impaired, and the posterior segment exhibited poor movement coordination.

Diagnostic Evaluation
A dorsoventral radiograph of the lumbosacral region revealed a fracture at the 137th vertebra, and the case was confirming as a traumatic open vertebral fracture (Figure 3 & 4).

Treatment and Management

Wound Care

The wound was flushed with sterile normal saline to remove debris and clots, disinfected with 5% povidone-iodine, and treated topically with BotroClot to control hemorrhage. A sterile, customized surgical bandage was made using a thin layer of sterile plastic sand witched between double layer of Hansaplast aqua protect band-aid was applied, to provide antimicrobial protection, breathability, and water resistance while preventing infection and permitting limited mobility (Figure 5).

Pharmacological Support

- Enrofloxacin 5 mg/kg IM (antibiotic).
- Meloxicam 0.3 mg/kg IM (analgesic, anti-inflammatory).

The snake was monitored until it demonstrated coordinated coiling and locomotion. Upon full functional recovery, it was released at the rescue site (Figure 6).

Discussion

Traumatic fractures in reptiles may result from compression, torsion, or shear forces (Mader 2006) [4]. Healing proceeds more slowly than in mammals due to ectothermic physiology and limited bone vascularity (Fowler and Miller 2015) [3]. Many reptile fractures heal without surgical fixation when external immobilization and infection control are maintained (Rinaldi *et al*. 2013) [6]. Reptile orthopedic management emphasizes external coaptation and minimal invasive techniques to prevent stress and preserve thermoregulation. Internal fixation, though successful in larger species such as iguanas (Stejskal *et al*. 2007) [7] and Komodo dragons (Varanus komodoensis; Coleman *et al*. 2023) [2], is often impractical for small snakes due to anatomical constraints and anesthesia risk. Open vertebral fractures carry a high risk of contamination and neurological compromise; therefore, conservative management focusing on antisepsis and external stabilization is preferred (Vetlexicon 2020b) [9]. In the present case, wound irrigation, antiseptic care, and antimicrobial therapy promoted healing without complications. Wound healing in reptiles occurs primarily via epithelial migration from cranial to caudal direction, with fibroblast proliferation and macrophage activity removing necrotic tissue. ECDYSIS (shedding) facilitates epidermal regeneration and accelerates healing (Winter Park Veterinary Hospital 2018). This case supports the viability of conservative wound management in small snakes with vertebral injuries and highlights the need for clinical guidelines tailored to reptilian physiology and environmental dependencies such as humidity and temperature.

Fig 1: Picture showing rescued *Oxybelis fulgidus*

Fig 2: Picture showing bleeding wound on dorsum

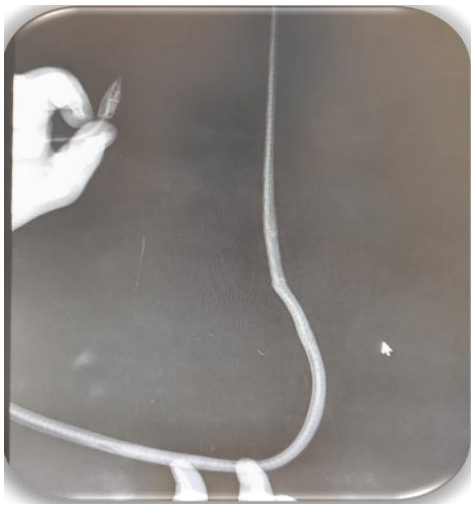

Fig 3: Radiographic image of the rescued *Oxybelis fulgidus*

Fig 4: Radiographic image showing fracture of 137th vertebra

Fig 5: Picture showing the showing customized bandaging on the affected site

Fig 6: Picture showing release of the treated snake back into the rescued area

Conclusion

The successful treatment of an open vertebral fracture in O. FULGIDUS demonstrates that conservative care combining antisepsis, immobilization, and appropriate pharmacologic therapy can yield full recovery. Prompt intervention, minimal handling, and habitat-appropriate release are crucial for positive outcomes in reptilian trauma rehabilitation.

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Conflict of Interest

Not available

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Reference

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