INTERNATIONAL JOURNAL OF CURRENT ADVANCED RESEARCH
ISSN: O: 2319-6475, ISSN: P: 2319-6505
Available Online at www.journalijcar.org
Volume 14; Issue 05; May 2025; Page No.233-236
DOI: http://dx.doi.org/10.24327/ijcar.2025.236.0049

Subject Area : Emergency Medicine

SELF-EXCISION OF FINGER FOLLOWING SNAKEBITE : MISCONCEPTION DRIVEN MISMANAGEMENT RAISING PUBLIC HEALTH CONCERN

Devansh Goyal, Sharique Alam, Haider Abbas, Mukesh Kumar, Pranay Gupta

King George's Medical University Lucknow

ARTICLE INFO

Received 14th April 2025
Received in revised form 21st April, 2025
Accepted 18th May, 2025
Published online 28th May, 2025

Key words:

Self-amputation, Snake bite, Misconception

ABSTRACT

Envenomation due to snakebite is a major public health concern in India, causing a large amount of morbidity and mortality. Misinformation regarding treatment of snakebite, especially in rural settings, usually contributes to inappropriate handling practices and delayed medical intervention that can contribute to a large amount of morbidity and mortality. This case report is of a man in his late 20s who came with self-amputation of his left index finger following a snakebite, bringing to the fore the risks of such beliefs and the need for specific public health awareness campaigns

INTRODUCTION

Snakebite envenomation is a significant public health issue, particularly in tropical and subtropical regions such as South Asia, Southeast Asia, and Sub-Saharan Africa (World Health Organization, 2021)[1], with an estimated 5.4 million snake bites occurring annually, leading to around 138,000 deaths and numerous cases of long-term disability. Despite advances in medical management, widespread misconceptions and harmful traditional practices often result in poor patient outcomes. Desperate to prevent venom spread, many victims resort to ineffective and often dangerous interventions, including incisions, tourniquets, herbal treatments, and even self-amputation, often exacerbating the injury and delaying proper treatment[2].

We present a case of a middle-aged male who, after being bitten on the finger by a snake, self-amputated the affected digit in an effort to halt venom dissemination. Such drastic measures not only lead to unnecessary complications like infection and excessive blood loss but also delay definitive medical care. This case highlights the ongoing need for community education on evidence-based snakebite first aid and the importance of timely hospital-based treatment[3].

MATERIAL AND METHODS

This case was managed at the Emergency Department of King George's Medical University (KGMU), Lucknow. The patient, a 28-year-old male farmer, was brought in by his relatives about four hours after sustaining a suspected snakebite on his left index finger. In a panic-driven response, he had amputated the distal part of his own finger using a sickle, believing it would prevent the venom from spreading.

*Corresponding author: **Dr. Devansh Goyal**

King George's Medical University Lucknow

On arrival, a complete clinical evaluation was performed. He was conscious but drowsy, with notable signs of neurotoxic envenomation-bilateral ptosis, dysarthria, and pooling of oral secretions. Local examination revealed a clean amputation at the distal phalanx level without major tissue damage. Initial investigations included a full blood count, coagulation profile, arterial blood gas analysis, renal function tests, serum electrolytes, and a 20-minute whole blood clotting test (WBCT). An X-ray of the affected hand confirmed that the amputation was limited to the distal part of the finger without proximal bony involvement.

Given the patient's symptoms and the regional prevalence of venomous snakes, envenomation by a Common Krait (Bungarus caeruleus) was suspected. Treatment was initiated promptly. The patient received 10 vials of polyvalent anti-snake venom (ASV) intravenously over one hour. To address the neurotoxic effects, atropine and neostigmine were administered as per standard protocol. Supportive care included intravenous fluids, broad-spectrum antibiotics, tetanus toxoid, and analgesia for pain relief.

Throughout his stay, the patient was closely monitored, and neurological symptoms improved significantly within 24 hours. All relevant clinical data and treatment details were recorded. Written informed consent was obtained from the patient for both treatment and the publication of his case details, including clinical images.

CASE PRESENTATION

A **28-year-old male farmer** was brought to the **Emergency Department (ED)** by his relatives **four hours after a suspected snake bite** on his **left index finger** while working in the fields at night. The **attendant provided the history**, stating that the patient, in a **state of panic**, had **amputated the distal phalanx of his own finger** using a sickle, fearing that the venom would spread. Patient was not taken to any nearby primary healthcare center and was straightaway brought to our centre which took them approximately 2 hours to reach.

On arrival, the patient was **conscious but drowsy**, with **progressive difficulty in speaking (dysarthria), bilateral ptosis, and pooling of oral secretions which was cleared with suction**. His **vital signs were stable**, with a **heart rate of 92/min, blood pressure of 120/78 mmHg, respiratory rate of 18/min, and SpO of 96% on room air**. **20 WBCT (20 second whole blood clotting test) was found to be negative .**

Neurological examination revealed bilateral ptosis, ophthalmoplegia with restricted extraocular movements, but no limb weakness or paralysis. His **local wound examination** showed a **clean amputation at the level of the distal phalanx** without significant swelling or tissue necrosis as shown in figure 1 and 2. The wound was cleaned and dressed and the amputated part was not available for examination.

Figure 1: Photograph showing the clean amputation of the left index finger at the level of the distal phalanx, performed by the patient following a snakebite.

Figure 2. Photograph showing dorsal aspect of the left hand showing the amputated left index finger distally.

Based on the **attendant's description of the snake** and **regional epidemiology**, the bite was suspected to be from a **Common Krait (*Bungarus caeruleus*)**, a highly **neurotoxic snake**.

Laboratory Investigations - The investigations were done to assess the patient condition and for monitoring need for complications and are shown in **table 1 and 2**

Table 1. Arterial Blood Gas Analysis of the patient

Arterial Blood Gas (ABG)		
Parameter	Result	Reference Range
pH	7.38	7.35 – 7.45
pCO_2	41 mmHg	35 – 45 mmHg
pO_2	85 mmHg	80 – 100 mmHg
HCO_3	24 mEq/L	22 – 26 mEq/L

Table 2. Routine blood investigations of the patient.

Investigation	Result	Reference Range
Complete Blood Count (CBC)		
Hemoglobin (Hb)	14.2 g/dL	13.0 – 17.0 g/dL
Total Leukocyte Count (TLC)	8,200/mm^3	4,000 – 11,000/mm^3
Platelet Count	2.1 lakh/mm^3	1.5 – 4.5 lakh/mm^3
Coagulation Profile		
Prothrombin Time (PT) / INR	13.2 sec / 1.0	12 – 14 sec / 0.8 – 1.2
Activated Partial Thrombo-plastin Time (aPTT)	30 sec	25 – 35 sec
Whole Blood Clotting Time (WBCT)	< 20 min	< 20 min
Biochemistry		
Serum Urea	24 mg/dL	15 – 40 mg/dL
Serum Creatinine	0.9 mg/dL	0.7 – 1.2 mg/dL
Serum Sodium (Na^+)	138 mEq/L	135 – 145 mEq/L
Serum Potassium (K^+)	4.1 mEq/L	3.5 – 5.0 mEq/L
Serum Chloride (Cl^-)	104 mEq/L	98 – 107 mEq/L

X ray of the left index finger showed no bony injury beyond the amputation site. (Figure 3)

Management

The patient received 10 vials of polyvalent ASV intravenously, diluted in 500 mL normal saline and infused over 1-hour time period. Atropine and Neostigmine therapy to reverse the postsynaptic neuroparalysis was also initiated.

Figure 3: X-ray left hand showing remaining bony fragment of the distal phalanx with no bony injury proximal to the site of amputation

Atropine 0.6 mg IV single dose was given followed by 4 doses of Neostigmine 0.5 mg IV slow push every 30 min and 4 doses given thereafter every 3 hourly.

Supportive therapy consisted of a normal saline 500 mL IV, broad-spectrum antibiotics (IV Ceftriaxone and IV Metronidazole), tetanus toxoid prophylaxis, and pain control using IV Paracetamol.

Clinical Course & Outcome

Within the next 6 hours, ptosis and dysarthria of the patient improved markedly. By 12 hours, ophthalmoplegia improved, and the patient regained normal extraocular movements. Within 24 hours, neurological symptoms completely disappeared, and no respiratory distress was observed. The patient was discharged at 48 hours with a clean wound, wound care advice, and was booked for follow-up in the outpatient department.

DISCUSSION

This case brings to light the hazardous effects of myths related to snakebite treatment, specifically the self-amputation done by the patient. The perception that cutting off the infected limb would avoid venom spread is a common but false belief among most rural communities, usually resulting in unwarranted and damaging interventions. Reports have been documented where patients took extreme measures, like using tight tourniquets, incising wounds, or even amputating limbs, under the misguided belief that such actions would trap venom and enhance survival rates [4,5]. Yet studies have shown that venom disseminates quickly along the lymphatic channels instead of being localized at the site of the bite and thus such procedures are ineffective [6]. Indeed, self-amputation not only did not protect against envenomation in this patient but also imposed extra risks such as hemorrhage, infection, and psychological disturbance. More proximal amputation would have jeopardized the life of the patient by causing potentially fatal hypovolemic shock or devastating overwhelming sepsis. Moreover, the delay in seeking proper medical treatment might have deteriorated the patient's outcome.

Neurotoxic snake bites, like those caused by the Common Krait (Bungarus caeruleus), require immediate medical attention to avoid respiratory failure and neurological impairment. The patient's initial panic response, while understandable, underscores the necessity of mass public education on evidence-based first aid. Proper management of snakebite involves wound cleansing, immobilization of the limb, and evacuation to a health facility that can provide antivenom treatment as per guidelines of the Ministry of Health and Family Welfare (MOHFW) [7]. Some research has shown that early use of anti-snake venom (ASV) decreases morbidity and mortality in neurotoxic snake bites, especially when supported with symptomatic management, including atropine and neostigmine for neurotoxic manifestations [8]. In this instance, in spite of the self-amputation, the patient was helped by early hospital intervention. Atropine and neostigmine were given to counteract the neurotoxicity, and ASV was given to inactivate circulating venom. Supportive care in the form of pain relief, tetanus prophylaxis, and monitoring of respiration helped in a good outcome without intubation.

The patient's perception of self-amputation highlights the prevalence of misinformation about snakebite management, especially in rural India. Misconceptions, including the effectiveness of tourniquets, herbal treatment, and incision of wounds, have been found to cause increased complications and delay definitive treatment [7]. Public health education and community-based programs are critical to eliminate such myths and ensure proper first-aid practices. Indian and Southeast Asian studies indicate that awareness programs on snakebite can improve outcomes considerably by reducing injurious traditional practices and facilitating early medical intervention [9].

The MOHFW guidelines recommend the following evidence-based practices in the management of snakebite [7]:

Do's

- **Reassurance and Immobilization**: Immobilize the limb at or below heart level and reassure the patient.
- **Rapid Transport**: The patient should be transferred immediately to a hospital that has ASV.
- **Antivenom Administration**: Species-specific or polyvalent ASV is the first line of treatment.
- **Supportive Care**: Pain control, tetanus prophylaxis, and surveillance for complications like respiratory distress or acute kidney injury.
- **Wound Care**: Antiseptic clean the bite area and dress it accordingly.

Don'ts

- **Do Not Use Tourniquets and Incisions:** Wound cutting and tourniquets do not avert venom dissemination and can even aggravate results.
- **No Electric Shock or Conventional Remedies:** Suction, electric shock therapy, or herbal remedies are ineffective and harmful.
- **Do Not Postpone Seeking Medical Care:** Prompt hospital treatment dramatically enhances prognosis.

This case sharply depicts the hazards of treating a snakebite case on one's own. Evidence-based, expert medical management based on MOHFW and WHO guidelines continues to be the gold standard of treatment for snakebites. Efforts aimed at dispelling prevalent myths by focusing on public educational programs can contribute significantly toward avoiding morbidity and mortality following a snakebite.

CONCLUSION

This case highlights the devastating effect of misinformation and cultural beliefs around snakebite management. The self-amputation by the patient to prevent spread of venom not only caused avoidable loss of tissue but also retarded proper medical management by providing a false sense of security, potentially resulting in significant complications. In this case, however, the timely administration of anti-snake venom and support therapy resulted in a successful outcome. It also underscores the imperative need for extensive public health education among rural communities to eliminate fatal snakebite myths and encourage evidence-based first aid. Improved accessibility of healthcare, first responder training, and specific awareness campaigns can dramatically curtail morbidity and mortality from snake envenomation. With proper knowledge and enhanced access to timely medical care, we can avoid such cases and enhance the overall outcome of snakebite victims.

Reference

1. World Health Organization. Snakebite envenoming. WHO website. Published September 12, 2023. Accessed February 18, 2025. https://www.who.int/news-room/fact-sheets/detail/snakebite-envenoming.
2. Alirol E, Sharma SK, Bawaskar HS, Kuch U, Chappuis F. Snake bite in South Asia: A review. *PLoS Negl Trop Dis.* 2010;4(1):e603. doi:10.1371/journal.pntd.0000603.
3. Gutiérrez JM, Warrell DA, Williams DJ, et al. The need for full integration of snakebite envenoming within a global strategy to combat the neglected tropical diseases: The way forward. *PLoS Negl Trop Dis.* 2013;7(6):e2162. doi:10.1371/journal.pntd.0002162
4. Warrell DA. Snake bite. *Lancet*. 2010;375(9708):77-88. [DOI:10.1016/S0140-6736(09)61754-2]
5. Mohapatra B, Warrell DA, Suraweera W, et al. Snake-bite mortality in India: A nationally representative mortality survey. *PLoS Negl Trop Dis*. 2011;5(4):e1018. [DOI:10.1371/journal.pntd.0001018]
6. Chippaux JP. Snakebite envenomation turns again into a neglected tropical disease! *J Venom Anim Toxins Incl Trop Dis*. 2017;23:38. [DOI:10.1186/s40409-017-0127-6]
7. Ministry of Health and Family Welfare, Government of India. (2020). *Guidelines for management of snakebites*. Retrieved from https://nhm.gov.in/images/pdf/guidelines/nrhm-guidelines/stg/Snakebite_Full.pdf
8. Seneviratne U, Dissanayake S. Neurological manifestations of snakebite in Sri Lanka. *J Postgrad Med*. 2002;48(4):275-278.
9. Williams D, Gutiérrez JM, Harrison R, et al. The global burden of snakebite: A literature analysis and modelling based on regional estimates of envenoming and deaths. *PLoS Med*. 2019;16(11):e1002851. [DOI:10.1371/journal.pmed.1002851]

How to cite this article:

Devansh Goyal, Sharique Alam, Haider Abbas, Mukesh Kumar, Pranay Gupta. (2025). Self excision of Finger following Snakebite: Misconception Driven Mismanagement Raising Public Health Concern, International Journal of Current Advanced Research, 14(05), pp.233-236.

****