Bristol Publishers

Case Reports and Case Series in Cardiology Journal

Editorial Letter | Open Access | Volume: 01 Issue: 01 (April-June 2025) Pages: 31-32

ISSN: 3107-6416 (Online) | DOI: doi.org/10.64874/crcscj.v1i1.2025.006

Snake Bite and Arrhythmia

Yasemin Geben, Anıl İflazoğlu, Mustafa Polat and Ali Karakuş ✉

Hatay Mustafa Kemal University Faculty of Medicine, Department of Emergency Medicine, Hatay, Turkey

Corresponding author: Prof. Dr. Ali Karakuş, Hatay Mustafa Kemal University, Faculty of Medicine, Department of Emergency Medicine, Hatay, Turkey. E-mail: drkarakus@yahoo.com.

Received: 11 May 2025; **Revised:** 22 May 2025; **Accepted:** 30 May 2025; **Published:** 05 June 2025

Academic Editor: Dr. Dou Huang

Dear Editor

Snake bites are an emergency condition that can result in mortality. There is a particularly high incidence of cases during the summer months. Hematological, pulmonary, cardiovascular, local findings, gastrointestinal, central nervous system symptoms and findings may be present. As previously outlined, the following parameters were meticulously monitored: auscultation of heart and lung sounds, follow-up with a bedside heart monitor, evaluation of clinical examination findings, evaluation of oedema level, vital signs, complete blood count (CBC), biochemical and coagulation tests. Numerous studies have documented the occurrence of arrhythmias following snake envenomation. Electrocardiograms (ECGs) in affected individuals often display nonspecific alterations, like sinus arrest with a junctional escape rhythm as well as retrograde P-waves at a heart rate of 40 beats per minute, indicating possible sinus node dysfunction. However, by third day of hospitalization, ECGs can return to normal sinus rhythm. Sinus tachycardia and bradycardia have been observed in envenomated patients. Additionally, T-wave inversion, as well as bradycardia is common ECG finding. Atrial fibrillation, frequently reported in these cases, may present with rapid ventricular rate of 126 beats per minute and typically resolves within 24hrs of antivenom administration. In certain patients, ECGs recorded 3hrs after the bite—despite the absence of initial cardiovascular symptoms-have indicated new-onset atrial fibrillation, which was effectively treated using amiodarone. This underscores the importance of extended cardiac monitoring, even beyond acute phase. Moreover, a pre-existing first-degree atrioventricular block (AVB) has been identified as a risk factor for developing atrial fibrillation in some individuals bitten by snakes [1].

A 57-year-old female patient presented to emergency room after snake bite. The patient complained of pain in the bitten foot and had no other systemic complaints. She has known diagnoses of type 2 diabetes and asthma. There is a tooth mark, edema and ecchymosis on the dorsal surface of the left foot. The edema has progressed to below the knee. Blood pressure (BP): 130/70mmHg, SpO_2: 97%, Pulse:82/min, Temperature:36.6°C, ECG: Normal sinus rhythm. The bitten foot was put in a long leg splint and elevation was applied, a Foley catheter was inserted, urine output was monitored, and cardiac monitoring was performed (splint and elevation are common medical procedures for snake bites). Tetanus and antibiotic prophylaxis were performed. Analgesia and hydration were started. In the first tests, the platelet count was seen as 130,000/µl. The patient was given 2 doses of snake antivenom due to thrombocytopenia. In the control blood tests, it was seen that the thrombocytopenia had regressed.

Citation: Geben Y, İflazoğlu A, Polat M, Karakuş A. Snake Bite and Arrhythmia. Case Rep Case Ser Cardiol J. April-June 2025; 01(01): 31-32.

DOI: doi.org/10.64874/crcscj.v1i1.2025.006.

On the 4th day of the patient's emergency room follow-up, (patients who presented to emergency service due to snake bite are following up in the observation room at the emergency services) tachycardia was observed on the monitor at night. An ECG was performed when the pulse was 140/min. The patient did not feel palpitations, and other vital signs were within normal limits. The ECG taken was found to be consistent with AF with rapid ventricular response. During follow-up, the patient was in sinus rhythm and AF was detected in the morning scan. The patient was sedated with 5 mg midazolam and synchronized electrical cardioversion was performed with 100 joules. It was observed that the patient's ECG returned to normal sinus rhythm. During the observation in the emergency room, the patient did not develop arrhythmia again, the edema in the foot decreased and the platelet values came within normal limits, and were discharged with recommendations.

Atrial fibrillation is a prevalent conduction disorder observed in snake bites with rapid ventricular rate of 126beats/min, which resolves 24hrs after AVS injection. Two snake bite cases were evaluated in this study and seen early cardiac arythmia as AF [2]. In addition, although pre-existing AV block is independent risk factor for AF after snake bites, AF may also develop in patients with normal sinus rhythm as in this case [3]. Although there are some differences depending on the species of snake, all studies recommend close cardiac rhythm monitoring, particularly in terms of life-threatening rhythm disturbances [4,5]. In this case, we wanted to emphasize the importance of clinical follow-up, especially in advanced stages, stages 2-3 of snake bites. Cardiac effects may occur in the following days, as in our case. Atrial fibrillation detected within 48 hours can be returned to sinus rhythm with medication or electrical cardioversion without the need for anticoagulants and TEE.

Keywords: Snakebite atrial fibrillation; Cardioversion

REFERENCES

1. Inesse Pouokam. Electrocardiography Patterns of Snake Envenomations. PAMJ-One Health. 2020; 2: 23.
2. Tianyil F-L, Agbor VN, Tochie JN, et al. Community-based Audits of Snake Envenomations in a Resource-challenged Setting of Cameroon: Case Series. BMC Res Notes. 2018; 11: 317.
3. Uhm JS, Shim J, Wi J, et al. First-degree Atrioventricular Block is Associated with Advanced Atrioventricular Block, Atrial Fibrillation and Left Ventricular Dysfunction in Patients with Hypertension. J Hypertens. 2014; 32: 1115-1120.
4. Gupta P, Mahajan N, Gupta R, et al. Cardiotoxicity Profile of Snake Bite. JK Science. 2013; 15: 169-173.
5. Agarwal A, Kumar T, Ravindranath KS, et al. Sinus Node Dysfunction Complicating Viper Bite. Asian Cardiovasc Thorac Ann. 2015; 23: 212-214.

Citation: Geben Y, İflazoğlu A, Polat M, Karakuş A. Snake Bite and Arrhythmia. Case Rep Case Ser Cardiol J. April-June 2025; 01(01): 31-32.
DOI: doi.org/10.64874/crcscj.v1i1.2025.006.