

Bilateral Parotid Enlargement and Trismus: An Unexpected Clinical Finding in a Patient with Common Krait (*Bungarus caeruleus*) bite

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Abstract

We report a case of bilateral parotid enlargement and trismus due to the bite of common krait (*Bungarus caeruleus*). These clinical findings have not been reported in literature after the bite with this species.

Keywords: *Bungarus caeruleus*, common krait, parotid gland, trismus

INTRODUCTION

Snake bite was recognized as a neglected tropical disease by the WHO in 2009, but removed from the list in 2013. It has been re-recognized as a neglected tropical disease on June 9, 2017. The magnitude of the problem is predominantly confined to the population living in poor, rural, and tropical countries where more than 95% of cases manifest.^[1] Existence of venomous snakes, called the common “Big 4” – the Indian cobra (*Naja naja*), the common krait (*Bungarus caeruleus*), the Russell’s viper (*Daboia russelii*), and the saw-scaled viper (*Echis carinatus*), has been documented throughout India. Diverse species of venomous snakes present with local and/or systemic symptoms and signs. Common krait envenomation classically causes descending neuroparalysis with minimal or no local clinical features, abdominal pain, vomiting, hypertension, and pulmonary edema.^[2] Parotid enlargement and trismus are not described with common krait bite.^[2] A PubMed search with MeSH words and keywords of “parotid gland,” “trismus,” “common krait,” and “*Bungarus caeruleus*” did not find any items. The case is reported for two reasons. First, to present the clinical finding of bilateral parotid enlargement and associated trismus as a feature of common krait bite. Second, to describe the excellent prognosis on the contrary to previous publications where bilateral parotid enlargement was associated with a poor prognosis.

CASE REPORT

A 31-year-old male was admitted to our hospital after 4 h of snake bite. The patient had felt a pinprick sensation in his right foot at 12.30 a.m. while sleeping. He thought that he had been bitten by some insect. He got up from his bed, looked around, and found a snake lying near his cot. He applied a tourniquet on the leg and rushed to the nearest community health center where tetanus toxoid and intravenous fluids were administered. Within an hour of bite, he developed severe pain in the bitten limb and all over the abdomen. There was no history of vomiting. On arrival to our hospital, the patient was complaining of abdominal pain and generalized myalgia. Per abdomen guarding was present and tenderness was elicited. At 7.30 a.m., the patient developed features of neurotoxicity in the form of bilateral ptosis and external ophthalmoplegia [Figure 1a]. Rest of the neurological examination was normal. The patient received 200 ml of antivenom. Ptosis and pain abdomen improved by 3.30 p.m. on the same day. Twenty-four hours after the snake bite, the patient developed trismus [Figure 1a]. Both parotid glands were enlarged and tender to touch. No local symptoms or

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Figure 1: (a) Photograph of the patient showing bilateral ptosis and trismus. (b) Enlarged and edematous right parotid gland. (c) Enlarged and edematous left parotid gland

signs were observed at the site of bite. Review of other systems was normal. Serial estimation of the whole-blood clotting time remained <20 min throughout the hospital stay. On investigation, hemogram was normal. Renal and liver function tests, serum amylase, lipase, urine examination, and electrocardiogram were normal. Creatine phosphokinase was 237 U/L (normal – up to 171 U/L). Ultrasound of the parotid glands revealed diffusely enlarged glands measuring 5.8 cm × 2 cm on the right side and 6.3 cm × 2.1 cm on the left side with edematous features in the form of decreased echogenicity [Figure 1b and c]. Chest X-ray was normal. The patient remained hemodynamically stable throughout admission without any other sequelae and was discharged on the 5th day of admission after symptomatic improvement. The patient was shown the atlas of snakes prevalent in the state and identified common krait (*B. caeruleus*) as the culprit. It was confirmed by his colleague who was sharing the same room and had observed the snake.

DISCUSSION

Common krait bite is very common in Himachal Pradesh, the sub-Himalayan region of northern part of India, particularly in the months of monsoons and harvesting season.^[3,4] The envenomation features described include nocturnal bite usually unnoticed being painless, descending neuroparalysis, abdominal pain, vomiting, hypertension, and pulmonary edema. There are minimal or absent local symptoms of pain, swelling, or necrosis.^[2] Early-morning neuroparalysis has been reported as a common presentation from this region. Bilateral parotid enlargement and trismus had not been reported with common krait bite in the literature.^[2] Parotid enlargement is described with Russell's viper (*D. russelii*) bite and is considered a poor prognostic feature. The mechanism described is generalized increase in capillary permeability (capillary leak syndrome) due to systemic vascular endothelial damage.^[5,6] Capillary leak syndrome could be a possible reason for enlarged parotid glands in our patient also, but there were no features such as chemosis,

periorbital edema, hypotension, albuminuria, hypoalbuminemia, and hemoconcentration. Trismus has been described as a feature of envenomation due to the bites of sea snakes, krait species like *B. niger* and *B. candidus* as well as *D. russelii*.^[6] However, this patient had no feature of myoglobinuria, hyperkalemia, cardiac arrest, acute kidney injury, and the other features of rhabdomyolysis. The toxins responsible for capillary leak syndrome are disintegrin and metalloproteinases which are present in both Elapidae and Viperidae snakes. Is it the same toxin which led to parotid enlargement and trismus in this patient or is it phospholipase A2 (β -Bungarotoxins) present in krait species and responsible for neuroparalysis, myotoxicity and inflammation?^[7] The identity of common krait is established by three factors in this case: (a) the snake was identified by two separate persons including the victim from the atlas of snakes, (b) records of reptilian fauna of Himachal Pradesh have not revealed the presence of any Krait species other than the common krait (*B. caeruleus*) in Himachal Pradesh,^[8] and (c) good response to antsnake venom which is a polyvalent vaccine and among various Krait species, only common krait (*B. caeruleus*) is covered. Our patient had a favorable outcome with full recovery. Parotid enlargement was not associated with a poor outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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