



Contents lists available at ScienceDirect

Asian Pacific Journal of Tropical Biomedicine

journal homepage: www.elsevier.com/locate/apjtb



Document heading doi:10.1016/S2221-1691(13)60041-6 © 2013 by the Asian Pacific Journal of Tropical Biomedicine. All rights reserved.

Bilateral parotid enlargement following snake bite: A rare sign

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PEER REVIEW

Peer reviewer

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Comments

Clinical features of viper bite vary from cellulitis to life threatening systemic manifestations. Bilateral parotid swelling is an unusual sign after viper bite. There are limited published data about parotid enlargement even in world literature. This is an interesting case report documenting an unusual sign after snake bite.

(Details on Page 155)

ABSTRACT

Snakebite is a common medical emergency in India. Unusual complications may occur after viper bite. Bilateral parotid enlargement after viper bite is a rare entity. An 18-year old gentleman presented to our hospital with history of viper bite. On examination he had cellulitis of right lower limb. He developed swelling of both the parotid glands 12 h after admission. He developed coagulopathy, acute renal failure and died within 48 h of hospital admission. Development of parotid swelling after snake bite is associated with poor prognosis. This case is found worth reporting as it is an unusual complication having prognostic value.

KEYWORDS

Snakebite, Parotid swelling, Coagulopathy

1. Introduction

Snakebites cause considerable morbidity and mortality worldwide. Envenomation resulting from snake bite is an important public health problem in our country. Common venomous snakes in India are common cobra (*Naja naja*), saw scaled viper (*Echiscarinatus*), Russell's viper (*Daboia russelii*) and krait (*Bungarus caeruleus*). Local envenoming with bleeding or clotting disturbances is a feature of viper bite. Development of parotid swelling after snake bite is a rare entity. There are only two articles from India documenting such a complication. There are limited published data documenting parotid enlargement even in world literature. This case was found worth reporting as it was a very rare occurrence.

2. Case report

An 18-year old gentleman was admitted to our hospital 10 h following a viper bite (*Daboia russelii*) on his right foot. He was given four vials of anti-snake venom (ASV) at the local hospital and he was referred to our institution for further management. He complained of pain at the local site. Clinical

examination revealed cellulitis of right lower limb (Figure 1).



Figure 1. Cellulitis leg.

Lab investigations showed that Hb: 19300 g/L; TC: 25000/cmm with neutrophilia; Platelets: 76000/cmm. The whole blood clotting time (WBCT) was normal. Serum urea and creatinine were 43.0 g/L and 1.2 g/L. Microscopic examination of the urine showed plenty of RBCs. Bleeding time (BT), prothrombin time (PT) and APTT were normal. He was treated with ASV, Inj. tetanus toxoid and antibiotics.

Lab investigations (6 h after admission) showed prolonged WBCT. BT, PT and APTT were prolonged. Thrombocytopenia

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Article history:

Received 18 Nov 2012

Received in revised form 27 Nov, 2nd revised form 15 Dec, 3rd revised form 28 Dec 2012

Accepted on 20 Jan 2013

Available online 28 Feb 2013

worsened (Platelets: 23 000/cmm). ASV was again administered. Fresh frozen plasma and platelet transfusions were given.

He developed swelling of both the parotid glands 12 h after admission (Figure 2). The swelling was acute in onset. Other salivary glands were not enlarged. USG parotid confirmed the same. He developed oliguria and expired 48 h after admission.



Figure 2. Enlarged parotid gland.

3. Discussion

It is estimated that 1 200 000–5 500 000 snakebites occur annually worldwide. Of these bites, at least 421 000–1 841 000 envenomations occur resulting in 20 000–94 000 deaths worldwide[1]. Bites by venomous snakes are not always accompanied by the injection of venom. When envenoming does occur, it can be life-threatening.

The clinical features of viper bite may vary from minor local symptoms to life threatening systemic manifestations. Envenoming due to viper bites results in tissue damage, characterized by swelling and blistering at the bite site. Viper venom can also induce coagulopathy. A study conducted by Monteiro *et al.* from Southern India showed that local signs of envenomation was present in 96% cases of viper bite, while systemic signs of envenomation was present in 90% of cases[2]. Our patient developed cellulitis of limb, coagulopathy, thrombocytopenia and renal failure.

Apart from these usual clinical features, unusual complications such as hypopituitarism and myocardial infarction may occur following snake bite[3,4]. Bilateral parotid swelling is an unusual clinical feature of viper bite. A similar case of bilateral parotid swelling after Russell viper bite was reported by Chakraborty *et al.*[5]. Their patient developed parotid swelling about 8 h after snake bite. Paul *et al.* have mentioned that development of parotid swelling was associated with poor prognosis[6].

Exact cause of parotid enlargement after snake bite is not known. This unusual manifestation has been documented in the Indian National Snakebite Protocol 2007. Physicians must observe their patients carefully to detect this rare sign as it has prognostic value. More researches need to be done to determine the exact pathogenesis and establish the prognostic value of parotid enlargement following snake bite.

Bilateral parotid enlargement after snake bite is a rare entity. Such a case report would serve to sensitize the clinicians about this unusual sign which has prognostic value. Physicians must provide aggressive treatment to patients with parotid swelling without wasting time thereby decreasing morbidity and mortality.

Conflict of interest statement

We declare that we have no conflict of interest.

Comments

Background

Envenomation resulting from snake bite is an important public health problem in rural India. Local envenoming with coagulopathy is the usual clinical feature of viper bite. Apart from these usual clinical features, unusual signs may occur following snake bite. Bilateral parotid enlargement is an unusual sign after viper bite.

Research frontiers

There are only two articles from India documenting parotid enlargement after snake bite. There are limited published data about parotid enlargement even in world literature.

Related reports

Chakraborty *et al.* (2010) have reported a case of parotid enlargement after viper bite from West Bengal. Paul *et al.* (2004) have mentioned that development of parotid swelling after snake bite was associated with poor prognosis.

Innovations and breakthroughs

Hypopituitarism, myocardial infarction and ventricular tachycardia are unusual manifestations of snake bite. Bilateral parotid swelling is also an unusual sign.

Applications

Such a case report will sensitize doctors about this unusual sign. More researches need to be done to determine the pathogenesis of parotid enlargement after snake bite.

Peer review

Clinical features of viper bite vary from cellulitis to life threatening systemic manifestations. Bilateral parotid swelling is an unusual sign after viper bite. There are limited published data about parotid enlargement even in world literature. This is an interesting case report documenting an unusual sign after snake bite.

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