

## Case Report

# A case series of mamushi bite and adverse effects of antiserum injection in several cases

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## ABSTRACT

Eight cases of mamushi bite and associated adverse events, including serum sickness diseases, delayed response, and adverse effects of antivenom were reported at hospital from May to September 2015. Adverse effects were seen in cases 3, 6 and 7 during treatment for mamushi bite. The underlying causes for the high frequency and variety of adverse effects of mamushi antivenom, including adverse reactions and serum sickness disease, are still not fully elucidated. Mamushi antivenom can be a major contributing factor to reducing hospital stay duration. However, healthcare professionals should be aware of the potential adverse reactions to mamushi antivenom.

**Keywords:** Adverse reaction, Mamushi bite, Serum sickness diseases

## INTRODUCTION

The incidence of *Gloydus blomhoffii* (mamushi) bite is approximately 1000 cases with 10 deaths annually.<sup>1</sup> Mamushi venom typically causes local pain, subcutaneous bleeding, and rapidly progressive swelling. Commercially available antivenoms neutralize both the hemorrhagic and lethal effects of the mamushi venom. However, healthcare professionals should be aware of the potential adverse effects of mamushi antivenom injection.

## CASE REPORT

We report eight cases of mamushi bite and associated adverse events, including serum sickness diseases, delayed response, and adverse effects of antivenom at hospital from May to September 2015. Grade classifications for mamushi bites used to clinically determine bite severity. Pharmacological treatment was administered to patients denoted by “+”. Serum creatine

phosphokinase (CPK) levels were measured at 1 or 2 days after admission. (Table 1).

Mamushi bite was diagnosed on the basis of characteristic skin puncture wounds, progressive swelling, laboratory findings, snake characteristics reported by patients. All patients with bites to the arms or legs were hospitalized for treatment.

### Cases of adverse effects to antivenom injection

Adverse effects were seen in cases 3, 6, and 7 during treatment for mamushi bite (summarized below).

### Case 3

The patient presented with progressive swelling and pain, requiring hospitalization because of a mamushi bite near dorsum of the left foot (Figure1). Antivenom was injected for a grade 3 mamushi bite at the time of presentation. The patient was discharged from our

hospital 8 days after initial admission following complete recovery. However, she subsequently presented to our hospital 4 days after discharge with a chief complaint of a swollen left leg, joint pain/arthritis, and numbness affecting the hands and toes (Figure 2).

Serum inflammatory markers, creatine phosphokinase, and blood cell counts were within normal limits, and nerve conduction velocity studies were normal. Accordingly, the patient was readmitted to our hospital. Serum sickness disease was diagnosed following a consultation with a specialist neurologist.

**Table 1: Recurrent swelling, affecting the left gaiter region.**

Cases	1	2	3	4	5	6	7	8
Age	7	9	61	8	49	71	91	68
Sex	M	M	F	M	M	M	F	F
Month	May	May	July	August	August	August	August	September
Location	Finger	Finger	Instep	Finger	Ankle	Finger	Wrist	Finger
Grade	1	1	3	3	2	2	3	3
Anti-venom	+	-	+	-	-	+	+	+
Steroid	-	-	-	-	-	-	+	-
CEP	-	-	-	-	-	-	-	+
CPK at first	148	N.D.	147	182	117	86	151	165
CPK follow up	202	58	1396	94	N.D.	49	89	82
Hospitalization	4	5	8	5	4	3	6	4

Bold letter of CPK shows above the normal range; N.D=Not done; Normal range of CPK is from 50 to 200 IU/l.



**Figure 1: Mamushi bites typically leave two very small puncture wounds approximately 1 cm apart. swelling affecting the left acrotarsium is seen. The bite site indicates by arrows.**

#### Case 6

The patient presented with recurrent swelling, affecting the finger one week after discharge (Figure 4). The patient was closely monitored without treatment following a diagnosis of delayed reaction to the antivenom or venomous substances of mamushi based on normal laboratory data, normal vital signs, and the absence of inflammation at the puncture site.

Swelling, affecting the finger, subsequently resolved without treatment a few days later.



**Figure 2: Recurrent swelling, affecting the left gaiter region.**



**Figure 3: Finger swelling, resulting from a mamushi bite at initial presentation. The bite site indicates by arrows.**



**Figure 4: Recurrent swelling at the affected finger with no local erythema one week after discharge.**

#### **Case 7**

The patient developed decrease in blood pressure, mild hypotension and nausea with diffuse erythema following antivenom injection and was treated with intravenous fluids, steroid administration, and systemic antihistamine treatment.

#### **DISCUSSION**

Mamushi venom can occasionally cause life-threatening symptoms. In severe cases of mamushi bite (grades III, IV, and V), antivenom should be injected in order to neutralize the effects of mamushi venom.<sup>2</sup> The incidence of adverse reactions to mamushi antivenom is reportedly 2.4% - 9.0%.<sup>1,3</sup> Serum sickness diseases were also reported.

Treatment with antivenom was apparently effective in reducing the length of hospital stay in case 3. However, the patient was readmitted at our hospital following the subsequent development of serum sickness disease, leading to longer hospitalization duration. The underlying causes for the high frequency and variety of adverse

effects of mamushi antivenom, including adverse reactions and serum sickness disease, is still not fully elucidated. Informed consent should be obtained from patients prior to conducting procedures or treatments for mamushi bite. Cepharanthine (CEP) administration lessens the inflammation and pain associated with mamushi bites and has been proposed as a possible alternative treatment for antivenom. CEP was only administered to case 8 in the present series. The use of CEP may have reduced the use of mamushi antivenom in the present case series.

#### **CONCLUSION**

Eight cases of mamushi bite were experienced at our institution between May and September 2015. Mamushi antivenom can be a major contributing factor to reducing hospital stay duration. However, healthcare professionals should be aware of the potential adverse reactions to mamushi antivenom.

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