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A cobra bite - uncommon site of bite

RMMKN Rathnayaka[1], SAM Kularathna[2], AGH Sugathapala[3], PMCK Pathiraja[4], PEAN Ranathunga[5]

Trainee, Medical Toxicology[1], Consultant Physician[3], Consultant Anaesthetist[4], Medical Officer, Emergency Treatment Unit[5], Provincial General Hospital, Ratnapura, Sri Lanka. Professor of Medicine[2], Faculty of Medicine, University of Peradeniya, Sri Lanka.

Corresponding author: namalrath10@yahoo.com

A 58yr old female patient presented with a history of cobra bite to right side of the face just below the eye. She was initially resuscitated with endotracheal intubation due to respiratory failure and was administered 20 vials of anti-venom serum (AVS). She died on 9th day in intensive care unit. This is an unusual presentation because 1) the bitten site was the face, 2) she developed coagulopathy and 3) she did not develop severe tissue necrosis at the bitten site.

Keywords: cobra, Naja naja, coagulopathy, snake bites, AVS

Introduction

Snake bite envenomation is an important public health problem in Sri Lanka and causes considerable illness and death. In 2012, 41538 patients were treated for snake bites in government hospitals, 76 patients died and the case fatality rate was 0.2.[1] Worldwide at least 421,000 envenomings and 20,000 deaths from snake bite occur every year. But this could be as high as 1.8million envenomings and 94,000 deaths.[2]

Case report

A 58yr old female patient presented to the emergency treatment unit with a history of cobra bite on the right side of the face just below the eye. The bite had occurred about 30min earlier and the offending live snake (Figure 1) was also brought to the hospital. Her past medical history was not significant and she had no previous allergies.

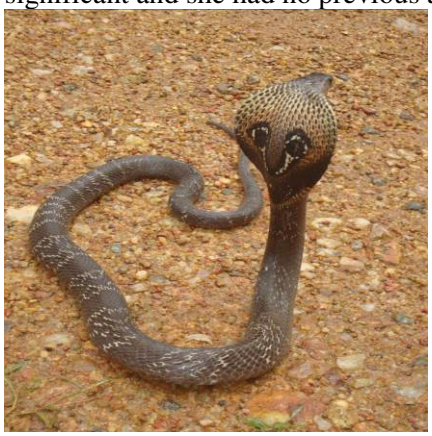

Figure 1: Offending snake (cobra) - female snake, 1287mm long

On admission she had vomiting and difficulty in breathing. She was conscious, rational and there was no ptosis or double vision. Her blood pressure was 147/93mmHg, pulse rate was 105/min; respiratory rate was 20/min and SpO_2 was 95% with 60% of O_2. Both lung fields were clear. 10min after the admission her oxygen saturation began to drop and she was resuscitated and intubated. Then she was given 10 vials of anti-venom serum (AVS-Lyophilised Polyvalent, Enzyme refined, Equine immunoglobulins, manufactured by ViNS bioproducts limited-India) and transferred to intensive care unit (ICU) for mechanical ventilation. Her whole blood clotting time (WBCT) was more than 20min on admission and other investigations were normal.INR 1.23, APTT 26/25sec,K^+ 3.5mmol/L, Na^+ 147mmol/L, white blood cell count-10.5 x 10^3/µL, neutrophils 46.3%, lymphocytes 49.1%, platelets 317 x 10^3/µL, Hb 11.5g/dL, blood urea 3.3mmol/L, creatinine 63µmol/L. As repeated WBCT was prolonged after 6 hours, another 10 vials of AVS was administered. 30 hours after admission to ICU, as she was awake (Glasgow coma scale 10/10 with ET tube) she was extubated after been on spontaneous mode on the ventilator but had to be reintubated shortly afterwards because she developed respiratory failure. On 3rd day she developed swelling over the right side of her upper

chest, neck and face. An ultrasound scan was done and it showed soft tissue oedema. As she also had unequal pupils on the 3rd day, computed tomography scan of brain was done which was normal. On the fifth day she developed T wave inversions in the chest leads of the ECG. Electroencephalography (EEG) was done on the 8th day and found to have some hypoxic features in brain. The patient was kept on synchronized intermittent mandatory ventilation (SIMV) mode during the ICU stay. On the 9th day, she developed cardio-respiratory arrest and died in spite of attempts at resuscitation.

Discussion

The spectacled cobra (*Naja naja*) belongs to family Elapidae. Its envenomation mainly causes neurotoxicity and severe local tissue necrosis. Some venom studies support the presence of haematoxins in cobra venom. For instance the Indian cobra (Naja naja) venom has hyaluronidase which has been shown to potentiate haemorrhagic activity.[3]

Our patient however did not develop severe local tissue necrosis at the site of the bite (Figure 2).

Figure 2: site of bite (right side of face) on day 3

It is known that the envenomation of cobra does not usually cause coagulopathy. But there are reported cases of having incoagulable blood with cobra bites.[3,4] Our patient's 20-min WBCT was increased on admission. It was repeated 6 hourly for 48 hours and in all these instances WBCT was more than 20 minutes. The prothrombin time (PT), international normalized ratio (INR) and activated partial thromboplastin time (APTT) were normal on admission and prolonged thereafter. This may be due to disseminated intravascular coagulopathy (DIC) or venom induced consumption coagulopathy (VICC) as suggested by blood picture and more evidenced by decreasing platelet count (5 x 10^3/µL) on 3rd day or impending sepsis. However D- dimer (FDP) and fibrinogen level could not be done at this stage but appropriate antibiotics were given according to culture reports. The possible reasons why the patient did not recover in spite of having all the treatments may be the severe sepsis secondary to snake bite or the lack of effectiveness of available AVS or both. Some studies have shown the ineffectiveness of polyvalent AVS on cobra envenomation.[5]

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