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## Case Report

### Maxillofacial Trauma and Snake Bite - Incidence in Coincidence

Philip Mathew<sup>1</sup>, Thamil Amudhan C R<sup>2</sup>, Paul Mathai<sup>3</sup>, Roshin M Philip<sup>4</sup>, Sunil Kumar<sup>5</sup>, Jacob John Plackal<sup>6</sup>, Rahul Vinay Chandra Tiwari<sup>7</sup>

<sup>1</sup>MDS, HOD. OMFS & Dentistry, JMMCH&RI, Thrissur, Kerala, India;

<sup>2</sup>MDS, OMFS, KVGDC, Sullia, Dakshina Kannada, Karnataka, India;

<sup>3</sup>FOGS, OMFS & Dentistry, JMMCH&RI, Thrissur, Kerala, India;

<sup>4</sup>MBBS INTERN, JMMCH&RI, Thrissur, Kerala, India;

<sup>5</sup>Senior Lecturer, Oral and Maxillofacial Surgery, SGT University, Gurugram, Badli, Hajar, Haryana, India;

<sup>6</sup>Consultant Oral and Maxillofacial Surgeon, Believers Church Medical Centre, Konni, Pathanamthitta, Kerala, India;

<sup>7</sup>FOGS, MDS, Consultant Oral & Maxillofacial Surgeon, CLOVE Dental & OMNI Hospitals, Visakhapatnam, Andhra Pradesh, India

#### ABSTRACT:

Snake bite is a medical emergency which needs to be treated immediately. It is more common in South East Asian region and particularly in India. Southern part has more incidences. Here by we present a case report of incidence of snake bite which lead to a coincidence of maxillofacial trauma as mandibular condyle fracture due to fall post snake bite.

**Key words:** Snake Bite, Mandibular fracture, Maxillofacial Trauma, Incidence, Coincidence.

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**Corresponding author:** Dr. Philip Mathew, MDS, HOD. OMFS & Dentistry, JMMCH&RI, Thrissur, Kerala, India;

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#### INTRODUCTION

Farmers, plantation workers, fisherman, herdsman are commonly affected by snake bites.<sup>1</sup> All the snake bites are not poisonous<sup>2</sup>, but it needs immediate management to treat or prevent complications. Most common poisonous snakes in South India are Naga raja (Cobra), Krait (*Bungarus caeruleus*), Russel's Viper (*Dabola russelii*) and Saw-scaled Viper (*Echis carinatus*).<sup>2</sup> Identification of snake bite (includes species of snake), first aid, timely management and tackling of complications is a big deal for the patients as well as doctors. Hematotoxic envenomation by Vipers leads to intravascular coagulation and defibrination syndromes

due to procoagulant or fibrinolytic proteases.<sup>3</sup> The literature has several studies on snake bite in face<sup>4,5</sup> but not a single studies reported snake bite with maxillofacial trauma. We report a case of maxillofacial trauma secondary to snake bite and its management.

#### CASE REPORT

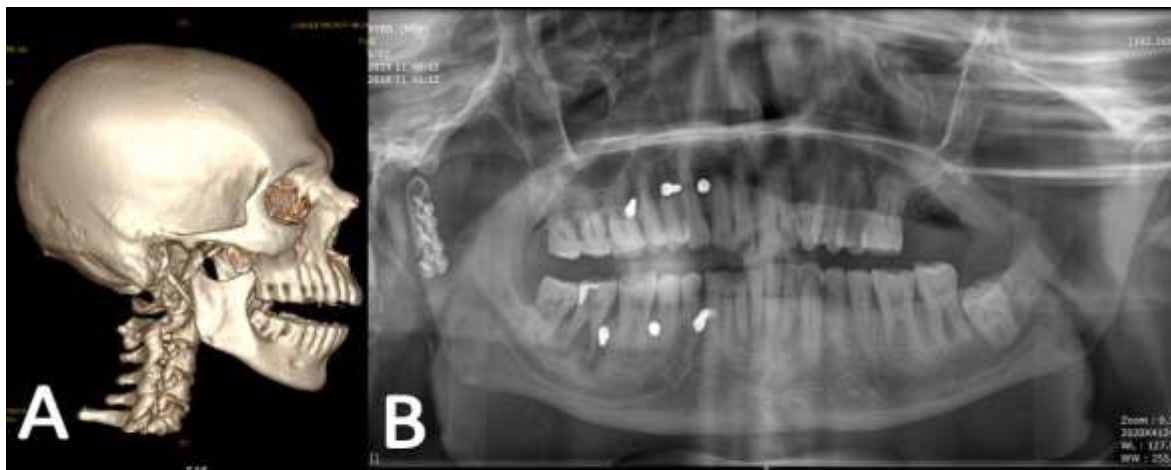
A 58 years old male brought to the department of emergency medicine of Jubilee Missions Medical College, Thrissur, Kerala by his wife and she gave us the history of snake bite in the right leg and fall in 1 feet depth pit. Patient had loss of consciousness for 5 minutes (approximately) with oral and nasal bleed. He

is known case of dyslipidemia and under medication and no other known comorbidities. On examination, patient had a abrasion in the right lateral aspect of ankle with slight bleeding. He had black eyes (periorbital edema and ecchymosis) on both the sides, which was more prominent in the left eye and ecchymosis noted in left inferior border of mandible (fig.). Laceration noted below the lower lip of size 2x1cm. He had bleeding from nose and oral cavity with reduced mouth opening and occlusal derangement. No neurological symptoms noted. Patient was intubated orally (Endotracheal intubation) due to threatened airway, oral bleeding and desaturation (spO<sub>2</sub> – 76%) and kept on ventilator support. Primary care was done to stop the nasal and oral bleeding through nasal packing with roller gauze (anterior nasal) and Foleys catheter (posterior nasal). Suturing of the laceration using 4-0 Nylon suture material. Patient is catheterized to monitor urine output and color (deep colored urine). Blood samples were sent for investigations. CT head and neck reveals Intraventricular hemorrhage, fractures of anterior and posterior walls of left maxillary and right subcondylar fracture with condyle pulled medially by lateral pterygoid muscle. USG chest (portable – poor acquisition window) shows normal study. USG abdomen and pelvis shows fatty changes in liver. Bleeding profile shows clotting time (>30 mins),

prothrombin time (>180 sec, control – 13.80 sec), APTT (>180 sec, control- 31 sec), INR (1.93), platelet count (145000) and fibrinogen (<10mg/dl). LDH – 511u/l, SGOT- 125u/l, SGPT- 106u/l, Creatinine- 1.4mg/dl, GRBS- 229mg/dl and other parameters within normal limits. Based on deranged coagulation profile, we come to a conclusion of snake bite as a VIPER bite and started 20 vials of Anti Snake Venom in 1L normal saline, 10 pint of Cryoprecipitate transfusion, 1 pint Packed Red Blood Cells and Inj. Tranexa 2g. Inj Levipil 2g and Inj Colihenz 500mg were added with it and kept patient under observation. Routine blood investigations repeated after 6 hours and shows marked improvements in the values. Repeat CT scan shows same size of intracranial bleeding. Nasal packs and endotracheal intubation were removed and attained hemostasis and patent respiration. Patient was clinically, hematologically and radiographically stable and fit for surgical reduction of right subcondylar fracture. But he was kept under observation for 3 days and reassured the patient and his hematological values were stable and taken up for the surgery. Open reduction and internal fixation done under General Anesthesia which was uneventful and post operatively stable. The patient was reviewed on 1<sup>st</sup> and 2<sup>nd</sup> week and he was improved well.



**Fig 1: A- Periorbital ecchymosis in left eye B- Ecchymosis noted in left lower 1/3<sup>rd</sup> of face without any trauma**



**Fig 2: A- CT scan shows right subcondylar fracture B- OPG shows fracture reduction with 2 miniplates and 6 IMF screws (3 in maxilla and 3 in mandible) to guide the occlusion.**

## DISCUSSION

Snake bite is an occupational disease which affects farmers, plantation workers, fisherman, herdsman in common. People who have open-style habitation and sleeping on the floor were more affected. Deforestation which affects the food cycle is also another reason for increase in snake bite cases in urban regions. South Asia has highest incidence of snake bite and India has highest death rate of 35k – 50k per year according to World Health Organization.<sup>6</sup> Existing data in literature are not completely fulfilled because of unreported cases of snake bites in rural areas and false belief in mantras and tantras which are not taken into count. These snake bites are more common in foot, leg and ankle during diurnals but bite in face and trunks in nocturnal.<sup>6</sup> All snake bites are not poisonous (includes both venomous and non venomous bites) but needs management. The Big four (mentioned by National Snakebite Management Protocol and WHO) venomous and common snakes in the country of India (more in South India) are Naga raja (Cobra), Krait (Bungarus caeruleus), Russel's Viper (Dabola russelii) and Saw-scaled Viper (Echis carinatus).<sup>1</sup> Krait bites generally occur at night, whereas viper and cobra bites mostly occur during daytime.<sup>6</sup> Venom of these snakes has unique property and effect. It has neurotoxic and hemo-nephrotoxic effect. In Kerala, almost 100 % of snake bites reported were hemo-nephrotoxic. Russel's Viper were hemonephrotoxic which can cause Local signs (Oedema of bitten limb, Pain at site of bite, Tenderness at site of bite, Fang marks, Local skin necrosis, Oozing of blood from bite mark, Severe blistering of bite area), Regional signs of envenoming (Tender regional lymphadenitis), Systemic signs (Vomiting, Abdominal pain, Anuria/oliguria, Hypotension, Spontaneous bleeding

tendency, Neurological signs, Syncope, Ventricular tachycardia, and Complications ( Acute renal failure, Intravascular haemolysis, Hypotension requiring inotropic support, Secondary infections, Compartment syndrome requiring fasciotomy, Intracerebral bleeding, Acute respiratory distress syndrome, Capillary leak syndrome, Respiratory paralysis, Ventricular tachycardia without heart disease).<sup>7</sup> Cobra bites are infrequent (snakes stay away from humans unlike Krait and Russel's viper) and are postsynaptic neurotoxic which can be reversed with Neostigmine with Atropine. Russel's viper bite should be suspected in addition of bleeding or nephrotxicity. Krait venom are more toxic than cobra bite, pre-synaptic neurotoxic which cannot be reversed with Neostigmine and needs ventilator support. Saw scaled vipers are hemo-nephrotoxic present with local swelling, mild bleeding and painful. In our case, patient have signs and symptoms of Saw Scaled viper bite such as bleeding from nose and oral cavity, ecchymosis in the subcutaneous tissue of face, clotting time >30 mins, increase in creatinine value (1.4mg/dl) and no other neurological effects.<sup>2</sup> First aid measures for a snake bite include reassurance of the victim, immobilization of the bitten limb, and rapid transport to a competent treatment centre. Tourniquet in the peripheries, sucking the wound, use of blades in the wound (incisions), application of herbal medicines or snake stones and delay of treatments by false belief in local traditional management or because of tantras and mantras were contraindicated.<sup>1</sup> The identification of snake species is much needed for optimal clinical management, because it allows clinicians to choose the appropriate treatment, anticipate complications, and therefore to improve prognosis. Anti Snake Venom (ASV) is the only specific treatment for snake bite

envenoming, but existing products cover only a very limited number of medically significant species.<sup>7</sup> Therapeutic Plasmapheresis can also be used in the treatment of snake bite poisoning particularly in hematotoxic envenomation.<sup>8</sup> Many literatures have shown cases of snake bite in face, eyes, head, neck and more but incidence of maxillofacial trauma is not reported yet. Snake bite along with maxillofacial trauma had increased the responsibility of the doctors. We may encounter complications such as paralysis, respiratory failure and in need of ventilator support in case of neurotoxic snake bite, but hemonephrotoxic snake bite will require correction of coagulopathy and dialysis along with appropriate ASV. Negligence to correct the coagulopathy will leads to massive uncontrolled bleeding, poor visibility of the operating site, difficulty in attaining hemostasis and even compartment syndrome. In our case, nasal and oral bleeding, ecchymosis over the left lower one-third of face shows the classical signs of hematotoxic nature of venom. Mechanical pressure packing, suturing of the lacerations and transfusion of cryoprecipitate, packed red blood cells, IM tranexamic acid had reduced all other complications and to prevent airway compromise/maintain patent airway, we intubated the patient orally.

## CONCLUSION

Snake bite is one of the commonest emergencies in South India which needs immediate care. Snake bite along with Maxillofacial trauma makes the situation even more worse and needs multidisciplinary approach. In case of Russel's Viper bites which is a hemonephrotoxic, will cause uncontrolled bleeding and multiple ecchymotic spots all over the body. It is clear that management of maxillofacial trauma in snake bite patients is not an emergency except control of bleeding. Awareness among the locally prevalent snakes, their manifestations, first aid do's and don'ts and centers with availability of ASV are important in management of snake bite. Avoidance of people in fake belief and delaying of treatment will improve the success rate.

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