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General Medicine

CONTACT DERMATITIS WITH SEVERE HEADACHE SECONDARY TO SNAKE SPITTING: A RARE AND UNREPORTED PRESENTATION

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ABSTRACT Spitting cobras are known for their ability to eject venom towards the eyes of a perceived threat. While ocular complications like conjunctivitis and corneal erosion are well documented, cutaneous reactions and systemic symptoms following venom exposure to intact skin are extremely rare. We report the case of a 48-year-old female who developed a localized facial rash followed by severe headache after exposure to cobra venom spat on her face. This unusual presentation may represent a hypersensitivity or cytokine-mediated systemic response in the absence of neurotoxic envenomation or ocular involvement. Many species of snakes exist in Himachal Pradesh. Several are venomous[1] and an encounter usually involves a bite to the victim. We describe her clinical presentation and subsequent management, highlighting some of the practical considerations in managing such a case.

KEYWORDS : Cobra venom spitting, facial rash, headache, contact envenomation, Naja species, snake venom hypersensitivity

INTRODUCTION:-

Spitting cobras (genus Naja) possess the unique ability to eject venom towards the eyes of threats as a defensive mechanism. Most documented complications involve the eyes, resulting in conjunctivitis, keratitis, or temporary visual impairment.[2] Systemic effects are rare and typically associated with snakebite envenomation. There is a paucity of literature describing skin reactions or neurological symptoms following facial exposure without ocular or bite involvement. We present a rare case of a woman who developed both a facial rash and delayed-onset severe headache after cobra venom was spat on her face. The ability of airborne inhaled snake venom of the spitting cobra to induce asthma in snake handlers was described by Prescott and Potter,[3] with the underlying mechanism postulated to be that of immunoglobulin E-mediated hypersensitivity reaction to the venom. In our case, the patient had a local skin reaction to snake venom from a spitting cobra without any systemic, inhalational, or ophthalmic effects.

Case Presentation:-

A 48-year-old previously healthy female presented to our emergency department with complaints of a burning rash over the face and a severe, diffuse headache. The patient reported an incident approximately 24 hours prior in which a cobra, identified as [Naag,naja], spat venom at her face from a short distance while she was working in her garden. Initial symptoms: Immediate burning sensation over right cheek, redness, mild edema, and rash within 1 hour (Figure 1) . Next day severe throbbing headache, not relieved by analgesics. She was otherwise well and did not complain of any systemic symptoms of weakness, dizziness, diplopia, nausea, vomiting, or diarrhea. Before coming to the emergency department, She had neither washed her face nor applied any cream to the affected region. On examination, the patient was alert and comfortable. Her vital signs were unremarkable apart from slightly increased pulse rate. There was no ptosis, and her pupils were equal and reactive. She was not diaphoretic and did not exhibit drooling of saliva. Swallowing and speech were noted to be normal. Neurological evaluation did not reveal any deficits. Her neck was supple and flexible, and she did not have any stridor or wheezing. Her abdomen was soft and non tender with normal bowel sounds. Numerous discrete pruritic red papules were noted over her right side of face without involvement of area around the eye. There was no associated blistering, weeping of the skin, cellulitis and necrotic changes. The affected side of face got swollen or tender.There was parotid enlargement of affected side of face , no cervical lymphadenopathy A full blood count, serum electrolytes, coagulation profile were unremarkable, only CRP was mildly elevated. Urine analysis was normal.Whole blood clotting test was also done at rate of six hourly for three times to rule out any systemic manifesration. The diagnosis was that of local skin reaction to Elapidae venom. She was treated with intramuscular promethazine, and tetanus toxoid. She was admitted for observation. Few hours into the observation period, the rash was noted to have gradually coalesced and spread upto zygomatic area of face. She was complaining of headache, for that fundus examination was done, There was no abnormal finding in fundus examination, CT head plain done to rule out any intracranial bleed. It revealed normal report. Headache was throbbing but no neck rigidity and other signs of meningitis. CSF was done s/o normal pressure, cytology and biochemistry, no organisms on culture. MRI Brain done to rule out any vasculitis and thrombus formation. MRI Brain came normal study. There was no further deterioration in her condition, A marked improvement was also noted in the appearance of the rash. Headache subsided after 2 days without recurrence, No neurological or ocular complications developed. She was subsequently discharged six days after her exposure, with topical steroid cream, oral antihistamines, and oral antibiotics, and was given a follow-up appointment with a dermatologist.

DISCUSSION:

Spitting cobras are found in parts of India, particularly in the northeast (e.g., Naja kaouthia), and can cause venom ophthalmia. However, dermal exposure without ocular involvement is rarely reported to cause systemic symptoms.In Singapore, and Hong Kong the most common spitting cobra is the black spitting cobra, *Naja sumatrana*, which is able to spit venom up to a few meters away[4,5,6] Although not aggressive by nature, this snake can spit venom if it is cornered or threatened. Like other cobras, its venom is largely neurotoxic, although cardiotoxic and cytotoxic components may be found as well[7]. This case illustrates a rare presentation likely caused by: Local cutaneous inflammation due to venom enzymes (e.g., phospholipase A2, cytotoxins), Systemic inflammatory response triggering cytokine-mediated headache and possible hypersensitivity reaction. No similar case with both facial rash and delayed-onset headache has been documented in Indian or international literature to date.

Figure 1:- Contact Dermatitis Secondary to Snake Spitting(cobra spitting)

CONCLUSION:

We hypothesize that the cutaneous reaction resulted from the cardiotoxic components of the venom, which may possess lytic properties on the epidermis. Furthermore, there may be an element of immunoglobulin E-mediated hypersensitivity involved in such cases. In managing these instances, it is imperative to initiate early decontamination by irrigating the affected dermal surfaces with abundant amounts of normal saline, along with the prompt administration of antihistamines, topical corticosteroids and oral antibiotics coupled with vigilant monitoring of the patient to ensure favorable outcomes. This represents the first documented case in North India reporting a facial rash and severe headache following cobra venom spitting, devoid of bite or ocular exposure. Awareness of such atypical presentations is crucial for timely recognition, management, and the prevention of over treatment with antivenom in the absence of systemic envenomation.

Declarations

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Conflicts of interest:None

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