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PERIPHERAL LOCKED IN SYNDROME FOLLOWING SNAKE BITE: - A RARE AND ATYPICAL CASE.

Internal Medicine

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ABSTRACT

Snake bite is a terror in the tropical regions of India. Majority of patients following snakebite envenomation develop local or systemic complications. They present in varied ways, from a stable patient with no symptoms to a completely paralyzed with all features of brain death present, although for a brief time. This has been termed locked in syndrome in snake bite. Neurotoxic features of snake bite vary from early morning neuroparalytic syndrome to various cranial nerve palsies. Locked in syndrome (LIS) is a rare presentation. The locked in syndrome describes patients who are awake and conscious but selectively differenced, i.e., have no means of producing speech, limb or facial movements. If not detected early, it is not uncommon for children presenting with locked in syndrome being put to funeral pyre or buried alive. Sometimes there might not be bite mark making the diagnosis even more challenging. This case suggests that elapid snake bite should be suspected in unresponsive patient found in early morning in endemic areas of snake bite in monsoon season., A twenty-two years old adult admitted in complete LIS state with history restlessness and quadriparesis following unwitnessed neurotoxic snake envenomation. Later he developed rapidly progressive ptosis, diplopia, ophthalmoplegia, bulbar symptoms and quadriplegia with most features of brain death like absent dolls eye, absent corneal reflexes and a dilated and fixed pupil only within two hours following the bite. He was treated with a standard regimen of anti-snake venom (ASV) along with other supportive measures. He had remarkable recovery with ASV. **Objective:** - Main objective of this study is to know the necessity of recognizing this (LIS) syndrome and highlights the need of differentiation of complete LIS from coma and brain death in children and all aged patients following snake bite and continuing all supportive therapies till they regain their reflexes and muscle powers.

KEYWORDS

Neurotoxic snake bite, locked in syndrome (LIS), Ptosis.

INTRODUCTION

Snake envenomation is a major cause of mortality and morbidity all over the world but more so in developing countries because of lack of advanced life support equipment [1]. Various presentations of snake bite may include neuromuscular paralysis, bleeding disorder, renal failure and so on. Neurological manifestations are caused by elapidae group (Cobras, kraits). The common krait is nocturnally active snake with painless bite; so many patients with neurological manifestations present to emergency without history of snake bite [2]. In 60%-70% of cases, snakebite occurs when the patients were asleep and site of bite is undetectable in 17% cases [3]. Thus, high degree of suspicion is required in such cases to reach at a diagnosis. Locked in syndrome (LIS) is a neurological syndrome in which despite being conscious patient is unable to communicate [4]. It is rarely reported in snake bite [5,6]. We report an adult aged 22 years old with LIS following snake bite.

Case-Report

A 22-year-old male was admitted to medicine department of Tertiary care hospital Dr. RPGMC Tanda H.P. with complaints of pain epigastrium at 3.0 AM of July 2024. Pain was sudden in onset followed by generalized weakness, difficulty in walking, followed by altered sensorium and respiratory failure within two hours of initial complaints. At admission, patient had respiratory arrest, Glasgow coma scale (GCS) score of 3; pupils were fixed and dilated and doll's eye movements were absent. After initial resuscitation, he was noted to have some movement of right toe. Complete history and clinical examination revealed fang marks on right side of trunk, snake bite was suspected and polyvalent anti-snake venom (ASV) was administered. Routine base line tests were sent, which were within normal limits. 72 hours later, after receiving 20 vials, Patient had movements of eyebrows and eye opening but pupils were still fixed and dilated. There is toes movement and pupillary reactions became normal on day four, doll's eye movement appeared a day later but internal ophthalmoplegia persisted. CT head was normal and fundus examination did not show features of optic neuritis. MRI brain was done to exclude encephalitis of ventral pontine area and any lesion in corticobulbar and corticospinal tracts in cerebral peduncles shown in figure (1). CSF and nerve conduction study was done to exclude severe Guillain-Barre's syndrome, there was no pervious history of sudden onset of weakness of all limbs, Neuromuscular junction blockade caused by myasthenia gravis was ruled out.

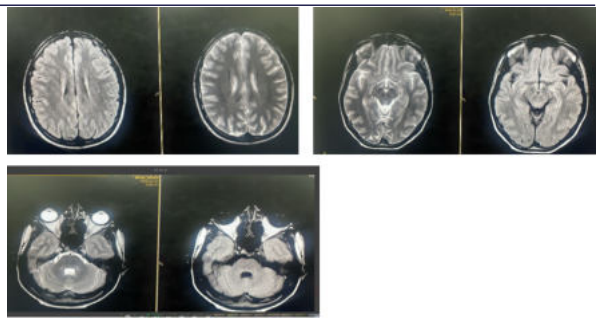

Figure (1) MRI brain of patient with snake bite induced LIS revealed normal study.

DISCUSSION: -

Neurotoxic manifestations of snake bite vary in severity but case reports of LIS due to snake bite are rare [7]. In LIS, patient is conscious yet unable to communicate. It can be of three types: classic, in which patient has quadriplegia and anarthria with preservation of consciousness and vertical eye movements. Incomplete LIS is similar to classic except remnants of voluntary movement other than vertical eye movement are present. In total LIS, there is total immobility and inability to communicate, with preserved consciousness [4]. Usual causes of LIS are stroke, trauma or encephalitis of ventral pontine area but it can also be caused by extensive bilateral destruction of corticobulbar and corticospinal tracts in the cerebral peduncles [8]. LIS can also be caused by peripheral causes such as severe Guillan-Barre's syndrome, neuromuscular junction blockade (myasthenia gravis, toxins, snake bite), etc. LIS in snake bite occurs due to neuromuscular paralysis of voluntary muscles which in turn is caused by neuromuscular transmission blockade (krait venom acts pre-synoptically while cobra venom acts postsynaptic ally) [2]. Irreversible binding of toxin to presynaptic portion makes clinical recovery slow in krait envenomation as recovery occurs only with the formation of new neuromuscular junctions [9]. as was seem it our cases. Duration of LIS varied from 30 hours to six days

CONCLUSION

Peripheral locked in syndrome following snake envenomation has an astounding recovery. So, all treating physicians should know that

snake envenomation can present with unresponsive but conscious and non-communicable state. Since differential diagnoses of unresponsive patient are exhaustive, high degree of suspicion is required in such cases, especially during rainy season. Fixed dilated pupils and absent doll's eye movement can easily be interpreted as brain death, if possibility of LIS is not considered. They should be able to differentiate it from brain death. Whether with history of snake bite or not, any patient with sudden onset of flaccid paralysis of unknown cause should be given a benefit of doubt and treated with ASV. The propensity of survival is almost 100 percent if properly managed.

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