

MANAGEMENT OF UNDIAGNOSED CASE OF SNAKEBITE PATIENT WITH RESPIRATORY FAILURE IN ICU: A CASE REPORT

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INTRODUCTION

Venomous snakebite is an acute life -threatening emergency. Snakebite is most common among agricultural workers and children especially in rural areas all over the world.¹ The snake venom can be neurotoxic, hematotoxic or myotoxic. Rarely, snakebite can be occult where history is not clear with no visible bite marks which delays the diagnosis and complicates management. In such cases, clinical suspicion is of utmost importance for unexplained neuromuscular paralysis. Sometimes, neuromuscular paralysis is so severe that it mimics brain death. In north India, the two important neurotoxic snakes leading to muscle paralysis are Cobra and Common krait. Due to respiratory muscle paralysis these patients require ventilator support in addition to anti-snake venom. We present a case of suspected snake bite presenting with loss of consciousness and h/o vomiting and remained in comatose state for over 4 days before gradual recovery.

CASE REPORT

A 20 years old male was brought to medicine emergency of Guru Nanak Dev Hospital, Amritsar on 19/8/2024 with sudden loss of consciousness.

GCS - E1V1M2 i.e.4/15 on arrival

Pupils - fully dilated and unresponsive to light.

O/E, BP- 136/90 mmHg, **PR**- 124/min, **Chest**- clear, B/L A/E equal, **CVS**- S1S2 normally heard.

HOPI- Patient had H/O 2 episodes of vomiting 2 hours back.

Past History- No significant past history.

ECG- normal

MANAGEMENT

The patient was immediately intubated and was mechanically ventilated using control mode of mechanical ventilation. Supportive treatment was

initiated. Enteral feeding was initiated via Ryle's tube after confirming bowel sounds. CT Head and MRI brain showed no significant findings. Urine for toxicology was negative. The patient remained in comatose state for 4 days and showed no change in neurological status. Keeping in mind the season of snake bite and after ruling out other neurological conditions on CT and MRI, we started managing the patient empirically with neostigmine and glycopyrrolate. 20- minute whole blood clotting test (20WBCT) was normal. In the absence of evidence and H/O snakebite along with 4 days of previous H/O unconsciousness, no ASV were administered. Inj. Myopyrrolate infusion was started on day 4 at 0.5 mg/hr. On 5th day, patient was noted being able to move the fingers. On 7th day patient developed cough reflex to ET suctioning while pupils were still unresponsive to light. On day 8, spontaneous eye opening was observed and patient was able to move arms and hands. Inj. Neostigmine-glycopyrrolate was stopped. Mechanical ventilation was continued for another 4 days using SIMV-VC mode (TV-6 ml/kg body wt.) due to persistent respiratory muscle weakness. On day 12th, patient was successfully weaned off from mechanical ventilation. Chest physiotherapy and spirometry was initiated and patient was shifted to ward after 15 days of admission.

Day in ICU	1	2	3	4	5	6	7	8	9	10	11	12
Hb (g/dl)	11.2	11.0	10.9	11.1	10.8	11.2	11.0	10.9	11.2	11.4	11.3	11.5
TLC (*10 ⁹ per mm ³)	9.08	9.90	10.45	11.67	13.06	18.68	16.28	11.32	11.93	8.09	8.06	7.06
Plt (*10 ⁹ per mm ³)	3.4	2.68	2.28	1.34	1.86	2.36	2.28	3.02	3.36	3.66	2.98	2.66
PTI	92%				94.4%							93.6%
RBS	116	98	108	128	132	119	106	129	118	100	107	115
S.creatinine (mg/dl)	0.68	0.77	0.74	0.34	0.46	0.55	0.69	0.76	0.8	1.0	0.9	1.1
B. urea (mg/dl)	26	32	30	29	24	26	27	20	29	22	28	32
S. Na ⁺ (mmol/l)	133	131	134	131	133	138	136	133	139	138	133	135
S. K ⁺ (mmol/l)	3.3	3.7	3.6	3.6	3.4	3.9	3.7	4.7	3.9	3.6	3.8	4.1
ABG												
pH	7.42	7.36	7.42	7.33	7.41	7.429	7.45	7.39	7.38	7.36	7.32	7.33
pCO2 (mmHg)	36.6	47.1	34.5	39.5	33.1	38.2	33.8	37.8	37.3	38.6	30.8	32.6
pO2 (mmHg)	172	192	152	204	189	196	180	190	206	179	188	183

INVESTIGATIONS

DISCUSSION

In India, there are 216 species, out of which 52 are poisonous(2). The most commonly encountered poisonous snakes in our country include Cobra, Common Krait, Russell's viper and Saw scaled viper. Cobra and Krait bite is neuromuscular whereas Viper snakebite is vasculotoxic. The annual death rate due to snakebite in India is estimated to be 4.1 per 1,00,000 population. High mortality is due to lack of proper health services in rural areas and delay in reaching a well-equipped health care facility where anti-snake venom can be administered(3,4). The superstitions prevailing in our country regarding snakebite management also delay emergency treatment. India has the highest number of deaths due to snake bite in the world with 35,000-50,000 people dying every year (5,6). The chances of patient survival largely depend on the access to proper first aid and availability of supportive treatment and anti-snake venom for snakebite. It has been reported in previous studies that snakebites presenting with early morning paralysis are usually misdiagnosed as guillian-barre syndrome due to similar features like respiratory failure and flaccid paralysis (7,8). Occult snakebite leads to diagnostic challenges thus, delaying the management. Neurotoxic snake bite blocks neuromuscular transmission resulting in muscle paralysis. Common krait bite is associated with profound neuromuscular paralysis with few local signs/symptoms. Management protocol includes adequate ventilation, anti-snake venom, appropriate antibiotics and general supportive care. In neurotoxic snake bite, Inj. Neostigmine-glycopyrrolate is of great help.

CONCLUSION

A significant number of patients die before they reach the hospital due to the fact that most of the victims are unaware that they have been bitten due to lack of local symptoms/pain. Timely recognition and early intervention with mechanical ventilation and respiratory support, early administration of ASV and Neostigmine-glycopyrrolate is life saving.

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