Sudden-onset Ptosis and Neuromuscular paralysis in Children - Don’t forget to rule out Snake Bite (ID:499)

Juhi Gupta*, Pragati Jeenwal, Richa Choudhary, R N Sehra, Pradeep Meena, Kusum Devpura

Sir Padampat Neonatology and Child Health Institute , SMS Medical College, Jaipur

18TH ICNC 2024 Footprints to the future
INTERNATIONAL CHILD NEUROLOGY CONGRESS
Cape Town, South Africa I May 6-10, 2024

Introduction

- Snake bite is classified as a neglected tropical disease
- Snake Bite can be fatal due to the blockage of the respiratory and bulbar muscles
- We describe here 3 children, who presented with severe abdominal pain, followed by ptosis, slurring of speech, and quadriparesis.
- A snake bite was suspected, although there was no clear history.
- They responded dramatically to anti-snake venom (ASV) and neostigmine (preceded by atropine).
- All cases presented in the monsoon season.

Case One

- 13-year-old male
- Crampy abdominal pain during midnight, rapidly followed by slurring of speech, ptosis, quadriparesis and respiratory weakness, requiring mechanical ventilation.
- No history of any bite, but two doubtful fang marks were seen on one foot
- A snake bite was suspected, and ASV (20 vials) was administered, along with neostigmine and atropine.
- Child responded well and respiratory weakness and ptosis improved over next 48 to 72 hours.

Case Two

- 9-year-old boy
- Abdominal pain, slurring of speech, ptosis, difficulty in swallowing, and progressive muscular weakness requiring ventilation
- an unknown bite followed by local swelling
- In view of suspected snake bite, he received ASV (20 vials) along with neostigmine and atropine
- Responded dramatically and was extubated after 48 hours

Figure 1: Clinical photograph demonstrating ptosis at admission (a) and clinical photograph showing marked improvement in ptosis at discharge (b)

Case Three

- 9-year-old female child
- Sudden onset abdominal pain at midnight, rapidly followed by ptosis, slurring of speech, and inability to walk
- There was no history of snake bite
- Initiated ASV along with neostigmine preceded by atropine. ASV had to be stopped due to an allergic reaction, however she showed an excellent response to neostigmine
- Ptosis and neuro-muscular paralysis improved over next 48 to 72 hours (Figure 1)

Discussion

- Children are more prone to snake bite while sleeping, therefore they may present at midnight or early morning without a clear recall of the bite .
- The neuro-muscular paralysis by snake venom is caused by defective neuromuscular junction transmission.
- Antivenom immunoglobulins act by neutralizing snake venom proteins.
- Anti-cholinesterase inhibitors like neostigmine help reverse the post-synaptic blockade, and atropine prevents the unwanted muscarinic effects.

Conclusion

1. Snake bite should be suspected in children with typical chronology of events beginning with severe abdominal pain, followed by ptosis, and descending neuro-muscular weakness, especially those who were sleeping prior to symptom-onset
2. Combination of ASV, neostigmine and atropine should be used promptly in children with snake bite.

References

1. Ranawaka UK, Lalloo DG, De Silva HJ. Neurotoxicity in snakebite—The limits of our knowledge. PLoS Negl Trop Dis 2013;7:e2302. doi: 10.1371/journal.pntd.0002302.
2. Sharma R, Dogra V, Sharma G, Chauhan V. Mass awareness regarding snakebite induced early morning neuroparalysis can prevent many deaths in North India. Int J Crit Illn Inj Sci 2016;6:115-8.
3. Gómez-Betancur I, Gogineni V, Salazar-Ospina A, León F. Perspective on the therapeutics of anti-snake venom. Molecules 2019;24:3276.