Green Mamba

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Introduction: Do you know green mamba snake?

In Thailand, another topic from flood was warned 15 green mamba snakes escaped from a flooded building in Nonthaburi's Pak Kret. It’s contain 2 adult and 13 young ones.

In general, green mambas were found only in Africa, not Thailand. But some people didn’t think about danger about them, bring them from Africa for sell at Jatujak. Then people who didn’t have a knowledge try to keep them for some reason. May be a funny, watchful when they are boring. But now, after flooded in Thailand. They escaped from those people house. They were not only a general snake, but also have a very very dangerous for people. Green mambas were yellowish-green and larger than green snakes, the victim of a mamba bite would feel drowsy and could die in 20 minutes. If he or she survived, the victim would be on respiratory system of human body.

The most important point, in Thailand we didn’t have any antivenom of this snake. Therefore, A Thai government imported serum antidote to counter snakebites from green mamba snakes, of which the original birthplace is in Africa. No case report in Thailand have been found bitten by this reptile, but issue you show know if you think you are a brave man and want try to kill or capture it like a common snakes. Mambas are excellent climbers and are very fast, you will almost definitely be bitten, and probably die from it, if a good bite. Mambas strike fast, often, and unpredictably, and not just once, but many times, if threatened.
Thai people should don’t panic and listen a new from government. Now we will talk about detail of mamba snake and guideline management when bitten from this snakes.

**What is Morphological characteristics of Mambas snakes ?**

These snakes are very long, thin, alert, nervous, fast moving and, highly dangerous venomous snakes. And this is some detail about them.

1) Common or eastern green mamba. The total length rarely exceeds 2.5 m. This species is coloured uniformly bright green and is strictly arboreal. These kind of snake was breaking in Thailand now.

2) Traill’s, Jameson’s, green forest or western green mamba Average total length exceeds 120 cm (maximum 366 cm). The colour is bright green to yellowish green. The scales are edged with black. This species is mainly arboreal and, in defence, it spreads a hood or inflates its throat.

3) Black or black-mouthed mamba. The average total length is 220–270 cm (maximum 420 cm). It is more heavily built than other mambas and coloured greyish brown or olive brown with a black buccal lining. In defence, it rears up, distending a small hood, opening its mouth and hissing.

4) Hallowell’s or western green mamba. The maximum total length is 210 cm. It inflates its throat and spreads a small hood in defence.

**Epidemiological Data of green mamba**

Not any kind of mamba was found in Thailand, but it was bring buy a human. Where we will find a mamba snake? We have some information about these thing. Kenya, a preliminary survey based on Ministry of Health, hospital, clinic and dispensary records in Kakamega and western Kenya, Lake Baringo and Laikipia, Kilifi and Malindi and northern Kenya suggested an overall average frequency of snakebite of 14 (range 2-68) per 100,000 population per year with a minimum death rate of 0.45 per 100,000 per year. Puff adders, black mambas and spitting cobras were responsible for the fatalities. However, a community-based
study on the coast in Kilifi District discovered 15 adult snakebite fatalities per 100,000 population per year (Snow et al, 1994). Egyptian cobras, eastern green mambas and the colubrid boomslang cause a few bites and fatalities.

Clinical patterns of green mamba envenoming

This is characterized by moderate or absent local swelling, progressive descending paralysis starting with ptosis and paralysis of eye movements causing double vision. There may be painful and tender enlargement of lymph glands draining the bite site. The patient may vomit, the saliva may become profuse and stringy, and eventually there may be difficulties with swallowing and breathing. According to up sentence, the patient can develop a respiratory failure and this is cause of dead.

Generalize symptoms >> Transient paraesthesiae of the tongue and lips, abnormalities of taste and smell, heaviness of the eyelids, increased salivation or a dry mouth, nausea and vomiting are followed by progressive, descending paralysis: bilateral ptosis, pupillary abnormalities, external and internal ophthalmoplegia, paralysis of the facial muscles, jaw, tongue, neck flexors and other muscles innervated by the cranial nerves, dysphonia, difficulty in swallowing secretions and finally respiratory and generalized flaccid paralysis.

Conclusion: Mamba bite envenoming causes paraesthesiae, sweating, gooseflesh, salivation, viscous respiratory tract secretions, diarrhea, fasciculations and other involuntary muscle spasms and rapidly progressive paralysis.

Mambas (Genus Dendroaspis)

These are justifiably the most feared snakes of Africa. Mamba venoms contain unusual neurotoxins called dendrotoxins. They are 59 amino acid proteins that bind to voltage-gated
potassium channels at nerve endings, causing acetylcholine release. These toxins are responsible for a distinctive clinical syndrome of envenoming: paraesthesiae, signs of autonomic nervous system stimulation and muscular fasciculations (contractions of groups of muscle fibres innervation by single motor neurones producing a rippling contraction under the skin that can be confused with shivering). All four species are capable of causing rapidly-progressive descending paralysis, appearing as soon as 15 minutes after the bite and progressing to fatal respiratory paralysis.

Other features described in the literature include severe local pain, a strange taste in the mouth, diarrhea, excessive salivation, involuntary muscular contractions and recurrent episodes of paralysis despite antivenom treatment. Local swelling is variable and sometimes absent after mamba bites. However, patients bitten by eastern green mambas can develop swelling of the entire bitten limb and also show mild hemostatic disturbances. The rare cases of local tissue damage usually resulted from bites on the fingers or the use of a tight tourniquet.

Treatment

In Thailand, we just imported antivenom from Africa after a new green mamba escaped. We use polyspecific antivenom; consider trial of anticholinesterase therapy; monitor respiratory function carefully, and intubate and assist ventilation if/when necessary. And indications for antivenom treatment after bites by mambas snakes is, systemic envenoming, neurotoxicity. Approximate initial dose 40-200 ml, but some species less than.

Case report

This case report about some patient who have bitten from this snake. The speed of evolution of envenoming and its distinctive features are well-illustrated by a patient seen in
Harare, Zimbabwe. Within one minute of being bitten by a 3-metre-long black mamba, a 41-year-old man noticed tingling of the tongue and lips, followed by generalized tingling, abdominal pain and light-headedness. Within 20 minutes he was sweating profusely, had dilated pupils and was too weak to stand up. He became nauseated and vomited 30 minutes after the bite, by which time he was unable to pass urine and had detectable ptosis. He became breathless and found it difficult to clear his throat of thick secretions; 40 minutes after the bite he felt cold all over and noticed gooseflesh, his conjunctivae were congested and he was unable to open his mouth or protrude his tongue. There was then a rapid deterioration in his breathing and level of consciousness. Generalized fasciculations were noticed. He was treated with antivenom after 75 minutes, and 4½ hours after the bite he was intubated and mechanically ventilated for 40 hours, after which he made a complete recovery.

**Monitoring of patients**

This is an important thing that a doctor should be observe patient who bitten by this kind of snake, and time for close observe at least 24 hours.

- Level of consciousness.
- Presence or absence of ptosis, the earliest sign of neurotoxicity.
- Pulse rate and rhythm.
- Blood pressure.
- Respiratory rate.
- Extent of local swelling and tenderness
- New symptoms or signs.

**How do you know response to antivenom treatment?**

Neurotoxic signs often change slowly, after several hours, or unconvincingly. Cardiovascular effects such as hypotension and sinus bradycardia may respond within 10-20 minutes.
It must be emphasized that the administration of polyvalent antivenom in the acute phase of neurotoxic snake envenoming will usually not prevent progression of neurotoxic effects, most notably respiratory paralysis, and consequently the patient will not survive without life support. Respiratory support is the only life-saving treatment modality in neurotoxic snake envenoming. However, intravenous administration of adequate dose of antivenom will decrease the time course of muscle paralysis and recovery.

เอกสารอ้างอิง

Abubakar SB et al (2009). Pre-clinical and preliminary dose-finding and safety studies to identify candidate antivenoms for treatment of envenoming by saw-scaled or carpet vipers (Echis ocellatus) in northern Nigeria. Toxicon. [Epub ahead of print]


Domergue CA (198) Un serpent venimeux de Madagascar observation de deux cas de morsure par Madagascarophis (Colubride opisthoglyphe), Arch Inst Pasteur Madagascar 56:299–311.


Warrell DA (1979). Clinical snakebite problems in the Nigerian savanna region. Technische Hochschule


Warrell DA, Ormerod LD, Davidson N McD (1975). Bites by the puff adder (Bitis arietans) in Nigeria, and
http://www.searo.who.int/en/Section10/Section17/Section53/Section1024.htm
