

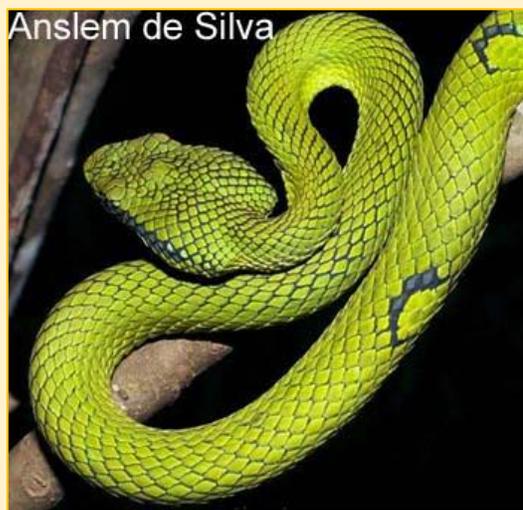
THE SRI LANKA GREEN PIT-VIPER and its BITES

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Trimeresurus trigonocephalus (Donndorff, 1798) (Viperidae)
Sri Lanka green pit-viper (E), pala polonga (S), patchchai viriyan (T)

The green pit-viper is an endemic venomous snake widely distributed in all climatic zones of the island except at high elevations and in the arid zones. It is more commonly found in the wet zone grasslands and rain forests. It is an arboreal, nocturnal snake, well camouflaged while resting in trees and lush vegetation during the daytime.

It is a stout, medium sized snake with a triangular head and a distinct neck, strikingly patterned in bright green and black. The average length of a full-grown adult snake is about 750mm. Most of its bites are reported from tea and cinnamon estates. Tea pluckers and estate workers are commonly bitten during the daytime on their hands and feet. The snake is easily identified by its characteristic colour and pattern.



Bites usually cause local envenoming, severe local pain and swelling being common. The swelling may spread from the bite site. Regional lymphadenopathy and bleeding from the puncture wounds may occur.

Systemic envenoming is rare, manifesting as coagulopathy, and very rarely acute kidney injury may occur.

Management of Green pit-viper bites

- Confirm the identity of the snake from the patient's history; if the offending snake is not brought to the hospital, show a photograph.
- Elevate the bitten limb.
- Perform the 20WBCT on admission and repeat 6 hourly for 24 hrs; or if the 20WBCT is positive (incoagulable blood), continue for 48 hrs. Coagulopathy is managed with fresh frozen plasma (FFP) – dose 2 packs twice a day for 2 days (or 10ml/kg/day).
- Monitor blood pressure, pulse and urine output.
- If swelling is extensive and spreading, monitor the distal pulse, capillary refilling time and SpO₂ of the affected limb in order to detect the onset of compartment syndrome. If compartment syndrome develops fasciotomy should be performed.
- Maintain a fluid balance chart. Fluid intake should be 100ml/hr iv or oral; if the urine output is reduced (less than 0.5ml/kg/hr) give iv frusemide in 20mg boluses.
- Give paracetamol 1g x 6 hourly for pain relief or if severe, tramadol 50mg bd may be administered.
- The following investigations are recommended:

FBC with blood picture
PT/INR, APTT
Serum creatinine, blood urea, serum electrolytes
ECG

- If persistent fever with elevated WBC count and CRP or if severe extensive local swelling associated with cellulitis consider intravenous antibiotics such as:
 - iv cloxacillin 500mg x 6hourly and co-amoxiclav 1.2g x 8 hourly or
 - iv clindamycin 300mg x 8 hourly
- Administer tetanus toxoid when the patient is discharged.
- Avoid potassium containing fruits and oily food during the hospital stay.

Bibliography

Kularatne SAM, Pathirage M. (2005). Life threatening envenoming by green pit viper (*Trimeresurus trionocephalus*) bite. *Lyriocephalus* Special issue 2005; 6 (1 &2): 327-328.

Rathnayaka Namal, Ranathunga Anusha Nishanthi, Fernando Kasun (2013). Epidemiology and clinical features of Green pit viper (*Trimeresurus trionocephalus*) envenomation, 12th International Scientific Congress of Asia Pacific Association of Medical Toxicology (APAMT), Zayed University Convention Centre, Dubai, UAE (Poster presentation).

Rathnayaka Namal, Kularatne SAM, Ranathunga PEAN (2017). Coagulopathy and extensive local swelling following Green pit viper (*Trimeresurus trionocephalus*) envenoming in Sri Lanka, *Toxicon* 129 (2017) 95-99.