

Scorpion envenomation

Scorpion stings may cause life-threatening envenomation. Species identification is difficult, but a useful guide for the clinician is that scorpions with thick tails and slender pincers are more venomous than those with thin tails and large pincers. Scorpions are mainly nocturnal and active during the summer months. Apart from local pain and occasional mild local inflammation, most scorpion stings are relatively harmless. In South Africa, only two species of the *Parabuthus* genus have been associated with severe envenomation: *Parabuthus granulatus* and *Parabuthus transvaalicus*. (See Figures 1 and 2 for description and geographical distribution)

Clinical features of severe envenomation (scorpionism):

- Immediate, severe local pain
- Generalised paraesthesia and hyperaesthesia
- Muscle pain and cramps
- Tremors and fasciculations
- Involuntary movements
- Agitation
- Visual disturbances
- Hypertension, tachycardia and cardiac arrhythmias
- General weakness – unable to walk, difficulty in breathing, dysphagia and drooling

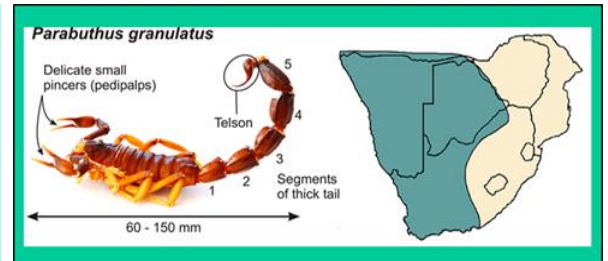


Figure 1: *Parabuthus granulatus*

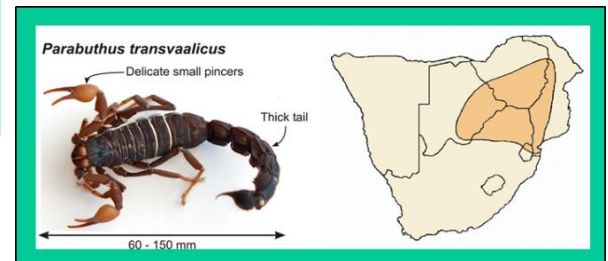


Figure 2: *Parabuthus transvaalicus*

In most cases, the degree of severity is evident within 15 - 60 minutes, but in adults, systemic symptoms and signs may be delayed for 8 hours.

Children may present with a unique form of restlessness marked by crying and thrashing which is an indication of severe systemic envenomation. Bulbar paralysis, accompanied by respiratory failure, is more frequent in children and the primary cause of death.

Differential diagnoses to consider in the absence of a history of a scorpion sting, include neurotoxic spider bites, snake bites, cholinesterase inhibitor toxicity, drug overdose, Guillain-Barre syndrome and tetanus.

Management:

- **Scorpion antivenom** should be given to all patients with symptoms and signs of severe envenomation.
 - Standard dose is 5 – 10 mL intravenously for both children and adults, diluted in a small volume of normal saline and given over 15 minutes.
 - It may take 2 – 6 hours to reach its maximum effect.
 - An additional dose of 5 mL may be administered after 6 hours if response to first dose is inadequate.
 - The patients should be kept under observation for 6 – 12 hours after antivenom administration.
- Pain management:
 - If simple analgesia is ineffective, infiltrate the sting site with local anaesthetic.
 - Opioids are relatively ineffective and increase the risk of respiratory depression.
 - Generalised muscle cramps can be alleviated temporarily (for about 20 - 30 minutes) by IV administration of calcium gluconate 10% (Adults 10 mL and children 0.5 mL/kg).
- Support cardiorespiratory function as needed.
- Do NOT give antihistamines and steroids routinely.
- Tetanus toxoid if required.

Sources:

- www.afritox.co.za
- Muller et al, Scorpion sting in southern Africa: diagnosis and management. CME 2012; 30(10):362-382.