



GUIDELINES FOR THE MANAGEMENT OF SNAKEBITE IN HOSPITAL©

2013

Produced by the
Expert Committee on Snakebite
Sri Lanka Medical Association
Colombo

This print edition contains the text of the revised Electronic Guidelines version 3.0. As in previous releases this utilises minimal colour and may be printed easily from the PDF version in the electronic compilation.

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Electronic Guidelines version 3.0: 2013 revised and expanded, with colour photographs

Edited by Malik Fernando

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INTRODUCTION

Dr Kolitha Sellahewa MBBS, MD, FCCP, FRACP (Hon.)
Chairman, SLMA Expert Committee on Snakebite, 2007

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Snakebite is a common medical problem in Sri Lanka. Hospital admissions due to snakebite have increased over the years reflecting the acceptance of allopathic management and treatment of these bites, as a result of energetic health educational programmes. However, the lack of consensus on management issues in a hospital setting has been a major concern. The feed back and discussions we had with doctors during our outreach seminars conducted across the length and breadth of this country over the past two years have confirmed these impressions.

The need for practical guidelines to be used by hospital doctors who commonly encounter the problem of snakebite has been amply demonstrated. In particular, clinicians have been grappling with a major problem for decades - how best to use antivenom serum (AVS)?

These guidelines contain a section on the selection of patients for AVS therapy: we hope this would prevent the injudicious and inappropriate over-use of AVS. The judicious use of AVS will not only result in enormous cost reduction of therapy but will also prevent exposing patients to the risks of AVS use. We have also highlighted simple practical steps designed to increase the safety of the currently available AVS that could be followed in any hospital setting.

We no longer advocate the killing of snakes.

Experienced Physicians are capable of taking crucial management decisions, even when the offending snake is not brought to hospital. Their experience and knowledge is embodied in these guidelines for intelligent application: not having the offending snake to hand, whether dead or alive, is no longer a bar to rational management of snakebite. In this era of advanced information technology, we thought that the availability of guidelines in an electronic format would be best to ensure that the current concepts of snakebite management are available to all. If you have any comments or suggestions about this publication, e-mail them to:

slma@eureka.lk with copy to malikfern@eureka.lk

Many members of the SLMA Expert Committee on Snakebite contributed in preparing these guidelines: I thank them all.

PREFACE TO THE 2013 EDITION

Prof. S. A. M. Kularatne
Chairman, SLMA Expert Committee on Snakebite
MBBS, MD, FRCP

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Science is evolving day by day and, in keeping with that, revisions to update existing documents are required. The initiative taken by the SLMA Expert Committee on Snakebite in 2007 to develop guidelines on the management of snakebite and make them available electronically has been a success and a commendable achievement under the able chairmanship of Dr Kolitha Sellahewa. This was the first of its kind in this field developed in Sri Lanka, with the objective of promoting uniform management of snakebite across the country to reduce morbidity and mortality. The current committee felt the dire need of updating the management guidelines incorporating new knowledge to suit current practices whilst maintaining the originality and the format of the original document.

This edition contains a new article on the saw-scaled viper (*Echis carinatus*), more information regarding the hump-nosed vipers in Sri Lanka (with photographs) and guidance on prophylaxis prior to antivenom administration based on published studies and an expanded section on the management of allergic reactions to antivenom.

I hope this guide would be useful for clinicians who manage unfortunate victims of snakebite in Sri Lanka. It is the dedicated commitment of Dr Malik Fernando, the secretary and the livewire of the committee, which keeps the spirits of the members strong to promote its activities. I thank him.

Peradeniya
June, 2012

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MANAGEMENT PLAN

Patient with a history of snakebite; or
when snakebite is suspected



ADMIT, REASSURE, ASSESS GENERAL CONDITION;



IF NECESSARY, RESUSCITATE (see page 7)



ASSESS FOR SIGNS OF ENVENOMING (see page 8)



IDENTIFY THE SNAKE (see page 10)

it will help in:

- decisions regarding antivenom administration
- vigilance and preparedness regarding complications



COMMENCE TETANUS PROPHYLAXIS.

MONITOR:

- level of consciousness
- pulse rate
- blood pressure
- respiratory rate & tidal volume
- temperature
- urine output
- fluid balance

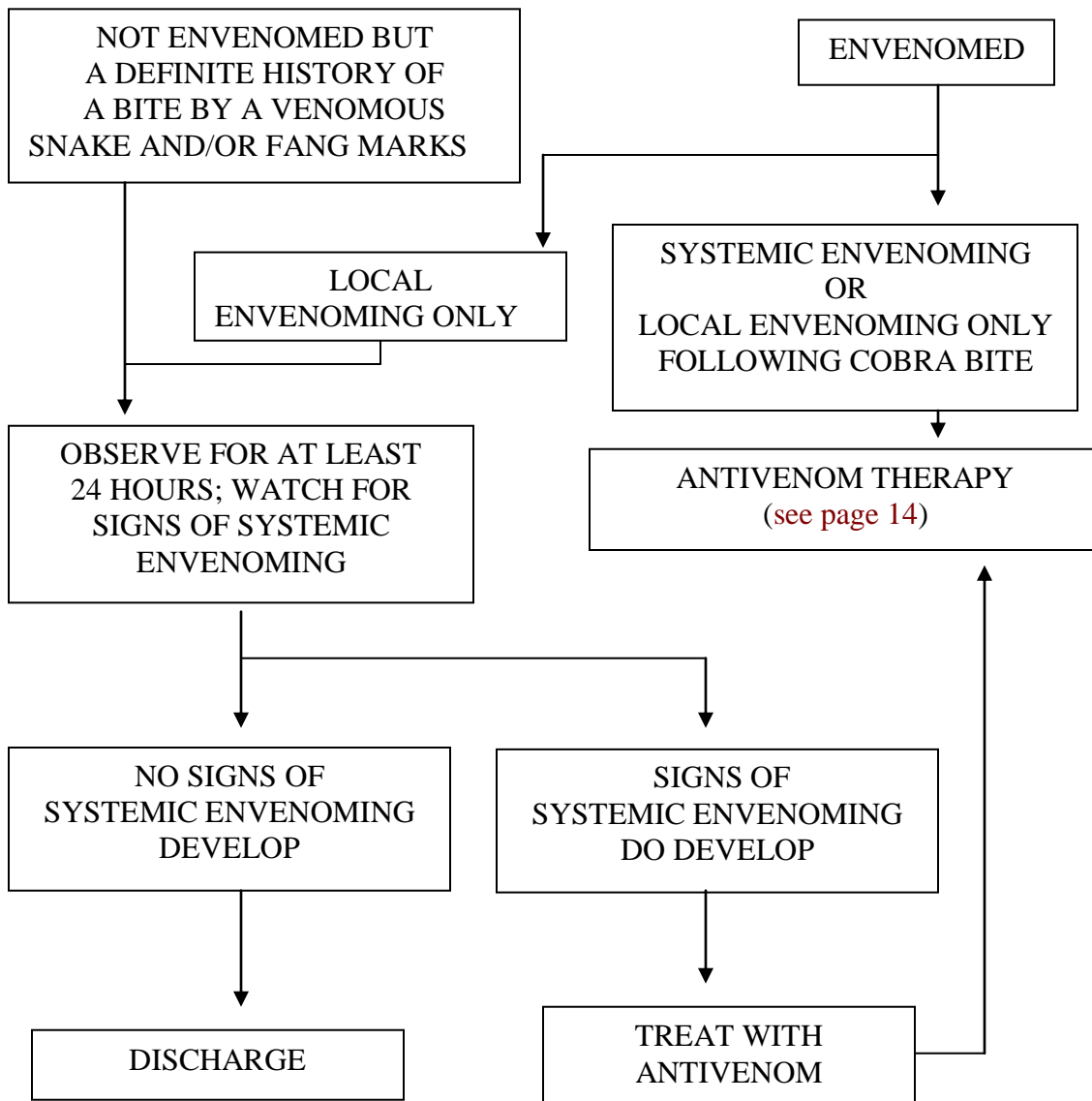
AVOID

(whenever possible)

- NSAIDs, including aspirin
- Intramuscular injections, including penicillin
- Concurrent administration of sera, other than antivenom serum, that may produce anaphylaxis
- Narcotics and other respiratory depressants

See page 9 for
Management of Special Problems

Continued



ASSESSMENT & RESUSCITATION

Airway – maintain a clear airway

Breathing - assess and support →

- * ventilate with Ambu bag and
 - mask, or
 - via endotracheal tube

Check the adequacy of ventilation:

A weak cough signifies respiratory muscle paralysis and inadequate ventilation.

✓ Immediate intervention with mouth to mouth or bag and mask ventilation is mandatory.

* Respiratory muscle paralysis is a major problem after elapid (cobra & krait) bites. Be alert to the possibility of this complication and respond rapidly.

Circulation - assess and support →

- * establish IV access
- * infuse with normal saline

Assess the state of the circulation by measuring the pulse rate and the blood pressure.

If there is circulatory inadequacy as indicated by hypotension and a rapid, weak pulse:

✓ Give an intravenous saline push (isotonic saline 20 ml/kg body weight as an intravenous bolus)

✓ If still hypotensive, repeat the same dose once more

* Hypotension after snakebite is due to hypovolaemia as a result of widespread vasodilatation, as well as due to the direct effect of cardiotoxins and venom induced anaphylaxis.

SIGNS of ENVENOMING

Local effects

- swelling
- blistering
- tissue necrosis

Systemic effects

Depends on the species of venomous snake

Early non-specific features

- abdominal pain
- nausea
- vomiting
- hypotension
- polymorphonuclear leucocytosis

Specific features

- neurotoxicity
- spontaneous systemic bleeding
- rhabdomyolysis with myoglobinuria
- coagulopathy

Detect coagulopathy in viper bites by performing the **20 minute whole blood clotting test (20WBCT)** 1 to 2 hourly during the first 6 hours and then 6 hourly

THE 20WBCT

The **20 minute whole blood clotting test** is performed at the bedside as follows:

1. Collect 2 ml of blood into a clean, dry test tube, gently rotate and leave it undisturbed for 20 minutes.
2. At the end of 20 mins. tilt the tube: observe whether the blood has clotted or not.
3. Conclusions
 - a) If the blood flows (i.e. no clot), there **is** coagulopathy (envenomed).
 - b) If the blood does not flow (i.e. clotted), there **is no** coagulopathy (not envenomed).

!If there is any doubt about the result, either repeat the test together with a control sample or seek laboratory tests such as bleeding time and clotting time.

MANAGEMENT of SPECIAL PROBLEMS

Acute Renal Failure

A major problem following Russell's viper bites

Page 9

Prevent:

- by early use of antivenom
- by ensuring good urine output in the first 24-48 hours
 - give adequate intravenous fluids as appropriate

Treat: peritoneal dialysis or haemodialysis if acute renal failure sets in

Avoid king coconut water and fruit juices

**MAINTAIN
ACCURATE FLUID BALANCE CHARTS**

Respiratory Failure

A major problem following krait bites

- Ambu bag and mask ventilation
- IPPV via an endotracheal tube in an intensive care unit

Use bag and mask ventilation as an emergency measure.
Transfer to a hospital with intensive care facilities if in need
of prolonged ventilation -

- Intubate
- Ventilate with Ambu bag
- Accompany the patient

IDENTIFY THE SNAKE

If the snake is brought:

Page 10

The medically important snakes are characteristic and identifiable by their appearance.

- The simplified guide to identification of venomous snakes lists the characteristic features (see the [Simplified Guide on this page](#)).
- The key to the identification of venomous snakes relies on appearance and scale pattern: use this if the simplified guide is inconclusive (see [pages 12 & 13](#)).

If the snake is not brought:

The probable identity of the biting snake can be inferred by the circumstances and the epidemiological features

(see [Conditional Identification of Venomous Snakes on page 11](#)).

SIMPLIFIED GUIDE TO VENOMOUS SNAKES

Based on characteristic physical features

Do not handle live snakes
Handle 'dead' snakes with care - they may not be dead:
and even if dead, are capable of inflicting a reflex bite

Cobra: Has a hood.

Sri Lankan krait: Bluish-black in colour with white rings, extending to belly. Old specimens may be brownish with faint white rings.

Common krait: Narrow white rings in pairs on the dorsum. A black glossy snake. White belly.

Seasnakes: Have short, paddle-shaped tails that are flattened side to side.

Russell's viper: Triangular head with narrow neck; dark brown oval-shaped patches edged with black and white.

Saw-scaled viper: Triangular head with narrow neck; a white dagger- or bird's foot-shaped patch on the dorsum of the head.

Hump nosed pit-viper: Has an upturned snout (look at the side profile) and a pit between the eye and the nostril on each side.

CONDITIONAL IDENTIFICATION OF VENOMOUS SNAKES

Based on epidemiological features

1. SITE OF BITE

- fingers, hand, ankle & foot: **saw-scaled & hump-nosed vipers**
- elbow & below, knee & below: **cobra, Russell's viper**
- anywhere from head to toe: **krait**

2. TIME OF BITE

- **krait** bites occur at night

3. SEASON OF BITE

- **krait** bites : related to rainy seasons – high incidence September to December

4. CIRCUMSTANCES OF THE BITE

- paddyfields, roads, footpaths at dawn and dusk: **Russell's viper**
- victims sleeping on the floor, at night: **krait**
- near water (reservoirs, ponds etc) or inside dwellings: **cobra**
- on estates, damp places in home gardens, during gardening activities:
hump-nosed pit viper

Based on clinical features

RUSSELL'S VIPER

Local swelling

Neurotoxicity (ptosis, external ophthalmoplegia)

Coagulopathy (spontaneous bleeding such as haematuria, GI bleeding, mucosal bleeding, prolonged clotting time, incoagulable blood)

COBRA

Local swelling, tissue necrosis

Neurotoxicity (ptosis, external ophthalmoplegia, respiratory paralysis, limb paralysis)

! Coagulopathy is rare and mild

KRAIT

Neurotoxicity (ptosis, external ophthalmoplegia, respiratory muscle paralysis, limb paralysis, coma)

! Local effects undetectable or minimal

! No coagulopathy

A KEY TO THE IDENTIFICATION OF VENOMOUS SNAKES

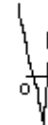
1a Tail flattened, paddle-like,
tip rounded



Seasnakes (see pages 22-23)

1a

1b Tail conical, round in section, tip pointed



.....Go to 2

1b

2a Ventral scales do not extend
the full width of the body



.....**Non-venomous snakes -
colubrides**

2a
Ventral
scale row

2b Ventral scales extend the
full width of the body



**Venomous & non-venomous
snakes** Go to 3

2b
Ventral
scale row

3a Head triangular, neck well defined



... **Vipers** (and cat snakes)
.....Go to 4

3b Head ovate, neck not well defined



..... **Cobra, kraits** (and others)
.....Go to 7

4a Bright green with black markings, head scales small,
similar to body scales, a pit present between the eye
and the nostril (loreal pit) **Green pit-viper**



4b Shades of brown, various patterns, head scales small or largeGo to 5

5a Scales on head large, snout upturned,
a loreal pit present **Hump-nosed pit viper**



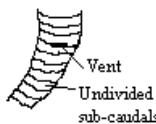
5b Scales on head small, similar to body scales Go to 6

Continued

6a Edges of body scales saw-toothed, light brown with white dagger mark on head and white wavy lines on sides of body **Saw-scaled viper**

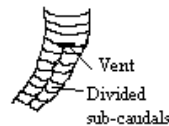
6b Edges of body scales not saw-toothed, three longitudinal rows of chocolate-brown oval patches along the body, each outlined with black and white **Russell's viper**

7a Vertebral scale row (mid-back) enlarged and polygonal, sub-caudal scales (those posterior to the vent) undivided;



glossy black or brownish-black with white cross-bars **Kraits**

7b Vertebral scale row not enlarged, sub-caudals divided, golden-brown with white speckles, neck expandible into a hood **Cobra**



ANTIVENOM THERAPY

GIVE ANTIVENOM IF SYSTEMIC ENVENOMING IS PRESENT.
GIVE FOR LOCAL ENVENOMING ALONE IN COBRA BITES AND
ONLY IF EXTENSIVE IN BITES OF OTHER SNAKES (see green box).

Red box

Commence antivenom therapy immediately for the bites of:

- Russell's viper
- *Cobra (see green box below)
- Krait
- Saw-scaled viper

Blue box

No benefit of antivenom therapy for bites of:

- Hump-nosed pit viper (even if severe local swelling is present)
- Green pit-viper
- Seasnakes

See page 21:
Saw-scaled
vipers and their
bites

See page 20:
Hump-nosed pit
vipers and their
bites

Green box

It is never too late to give antivenom provided the indications are present:

Only if features of **systemic** envenoming are present for bites of snakes in the **red box**

Do not give for local envenoming alone,
* **except for cobra bites, if half the limb is involved, or in ascending swelling in other snake bites**

Do not give for bites of snakes in the **blue box**

(Continued next page)

ANTIVENOM THERAPY Continued

- Commence antivenom as soon as systemic envenoming is detected.
- Dose: 100-200 ml (10-20 ampoules) or more* of Indian polyspecific antivenom in 400 ml of normal saline infused intravenously over one hour.
 - *The dose of antivenom depends on the severity of envenoming—in acute, severe coagulopathy following Russell's viper bites up to 30 ampoules could be given.

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- In **viper bites** — antivenom may be repeated in 6 hours in a dose of 100 ml (10 ampoules) if coagulopathy persists; **the endpoint of antivenom therapy is reversal of coagulopathy** as determined by serial performance of the 20WBCT (described on page 8).

Do not continue antivenom administration for persistent neurotoxicity, provided the coagulopathy has been reversed

In viper bites, monitor the efficacy of antivenom by repeatedly performing the **20 min. whole blood clotting test** (20WBCT) at the bedside.

Repeat 20 WBCT in 6 hours—if the blood does not clot in 20 minutes, repeat antivenom infusion and perform 20WBCT 6 hours later. Continue the cycle till the blood clots.

- In **cobra & krait bites** — Usually one dose (the first dose) of antivenom is sufficient.

CAUTION

Observe the patient carefully for signs of anaphylaxis

MONITOR

Pulse, Blood pressure and Respiration and observe for the appearance of a rash

Have adrenaline available at the bedside

TREAT REACTIONS IMMEDIATELY WITH

- * **Adrenaline:** 0.5 ml of 1:1000 solution
 - if not in shock and collapsed, give by **intramuscular** injection
 - if the patient is in shock and collapsed, **intravenous** administration may be considered—see page 17 for details. ***Intravenous adrenaline is hazardous.**
- * **Chlorpheniramine:** 10 mg intravenously
If unavailable, give **Promethazine** 25 mg intravenously
- * **Hydrocortisone:** 200 mg intravenously

See pages 16 & 17 for a fuller account of managing allergic reactions to antivenom

MANAGEMENT OF ALLERGIC REACTIONS TO ANTIVENOM

Pyrogenic, anaphylactic and anaphylactoid reactions may result in similar clinical manifestations and possibly result in death. These manifestations include: Page 16

urticaria	nausea	tachycardia
itching	vomiting	hypotension
fever	diarrhoea	bronchospasm
chills	abdominal cramps	angioedema
rigors		

✓ **Stop antivenom infusion temporarily and treat all reactions immediately**

The severity of reactions may vary from mild to severe – in all cases there is itching, urticaria and rigors; in

Mild reactions: the blood pressure is normal;

Moderate and Severe reactions: there is hypotension and bronchospasm.

✓ **Treat reactions with intravenous chlorpheniramine and adrenaline subcutaneously or intramuscularly in the following dosages:**

Mild reactions

- *Chlorpheniramine 10mg bolus intravenously
- * Adrenaline 0.5mg (0.5ml of 1:1000 solution) subcutaneously

Moderate reactions

- *Chlorpheniramine 10mg bolus intravenously
- * Adrenaline 0.3 to 0.5 mg (0.3-0.5 ml of a 1:1000 solution) intramuscularly
- repeat in 10 minutes according to the response

Severe reactions

- * Adrenaline 0.3 to 0.5 mg (0.3-0.5 ml of a 1:1000 solution) intramuscularly
- repeat in 10 minutes according to the response
- *Chlorpheniramine 10mg bolus intravenously may be given
- If stridor or severe wheeze adrenaline 1-4mg (1-4 ml of a 1:1000 solution) may be nebulised with oxygen whilst preparing the intravenous dose

Continued next page

In children give

Chlorpheniramine 0.2 mg/kg intravenously and
Adrenaline 10 µg (0.01ml of a 1:1000 solution) per kg body
weight intramuscularly.

In severe shock, severe dyspnoea, compromised airways or in deteriorating patients, **intravenous infusion** of adrenaline is recommended in the following dosage:

Adults: 10-20 micrograms (1-2 ml of a 1:100,000 solution) per
minute intravenously
(or 0.75-1.5 micrograms / kg body weight of 1:100,000 solution
intravenously).

***Intravenous adrenaline is hazardous**

Exercise extreme caution and administer the correct dose

Resume antivenom infusion once the reaction has settled and give the full dose. The incidence of reactions reduces during the 2nd & 3rd doses of antivenom. However, late anaphylactic reactions can occur for up to three hours following antivenom administration and therefore continued monitoring for a period is mandatory.

Hydrocortisone 2mg/kg may be given for long term protection. However, the evidence for benefits of hydrocortisone administration is inconclusive.

PREMEDICATION TO PREVENT OR REDUCE REACTIONS TO ANTIVENOM

There is no gold standard regimen. Low dose subcutaneous adrenaline provides only limited benefits. Early detection and vigorous treatment of anaphylaxis is far more important.

The following two premedication protocols are recommended (given just before the commencement of antivenom)

①

- Chlorpheniramine 10mg intravenously with
adrenaline 0.25 mg (0.25 ml of 1:1000 solution) subcutaneously.

* Adrenaline is not recommended in young children and those who have co-morbidities such as cardiovascular disease, hypertension and cerebrovascular disease.

②

- Chlorpheniramine 10mg intravenously with
Hydrocortisone 200mg intravenously stat and
800 mg as a parallel infusion with antivenom.

SNAKEBITE IN CHILDREN

General

The smaller mass of a child presents challenges when treating snakebite that need consideration when planning treatment. The dose of venom injected by the snake would be the same as delivered to an adult, needing the same amount of antivenom. But the smaller body mass necessitates appropriate adjustments to the total volume of fluid used to administer the antivenom. Some examinations and tests performed on adults may be impractical or inappropriate for use on children. Some information is given below based on experiences in paediatric units.

Diagnostic challenges

Neuro-muscular paralysis Weakness of the trunk and proximal muscles may present before ptosis manifests. Such weakness of muscles should be actively assessed from time to time as it would not be obvious in a child lying on its back.

Respiratory failure When monitoring breathing, chest expansion is as important as respiratory rate. It may be possible to get an older child to cough and assess its strength as in an adult, but progressive reduction of chest expansion is a very useful early sign of impending respiratory failure in small children. Be alert to the observation that children can respond to hypoxia with apnoea.

Management challenges

Antivenom administration

- Ten vials of antivenom (the standard dose in both adults and children) diluted in 400ml of saline can cause fluid overload in children. It is advisable to give the 10 ampoules of antivenom diluted in 200ml, given over 2 hours. Even this may cause fluid overload resulting in dyspnoea, in which case frusemide should be administered. In very small children (<10kg body weight) the total dose of antivenom can be dissolved in 100ml of saline and administered slowly by infusion pump over 2 hrs.
- If coagulopathy persists as shown by the 20WBCT, rather than repeating antivenom as done in adults, administration of Fresh Frozen Plasma would be safer.
- Adrenaline should NOT be given to children as a pre-medication. But can be used in the treatment of reactions.

HUMP-NOSED PIT VIPERS and their BITES

Three species of hump-nosed pit vipers of the genus *Hypnale* are found in Sri Lanka. *H. hypnale* is widely distributed except in Jaffna. *H. nepa* is confined to the central hills and *H. zara* to the lowland rain forests of the south-western wet-zone and the foothills of the central highlands. All are venomous and look alike.

Page 20

- Bites commonly cause only local swelling
- Occasionally a haemorrhagic blister at the bite site
- Less frequently tender regional lymphadenopathy
- Rarely systemic effects such as coagulopathy, thrombotic microangiopathy (TMA), acute renal failure and mild neurotoxicity.

Systemic effects following hump-nosed pit viper bites are sporadic and unpredictable, but could be fatal. Treatment with antivenom is not indicated.

If systemic effects occur, aggressive management during the first 24 to 48 hours is crucial. Acute kidney injury may need dialysis. TMA needs Plasmapheresis.

- **If coagulopathy ***
 - ✓ Treat with Fresh Frozen Plasma

This will prevent progression to venom induced consumptive coagulopathy if corrected early

- **Prevent acute renal failure**
 - ✓ Judicious intravenous fluid therapy to maintain good urine flow. Envenoming damages renal glomeruli resulting in severe acute kidney injury which may result in chronic kidney disease.

* Detect coagulopathy by performing the 20WBCT as described for viper bites
– see page 8

Hump-nosed pit vipers commonly inflict their bites on the extremities with the risk of severe local tissue destruction. Bites on the digits of the hand and foot if so affected may result in tapering of the fingers and toes. Puncturing of the blisters early with prophylactic antibiotic administration and elevation of the limb has been found to improve recovery.

THE SAW-SCALED VIPER and its BITES

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The saw-scaled viper (family Viperidae; genus *Echis* Merrem, 1820; *Echis carinatus* Schneider, 1801) is distributed in the dry and sandy arid coastal plains of Sri Lanka. It is found near the sea in the North-western (Kalpitiya & Wilpattu National Park), Northern (Mannar & Jaffna) and Eastern Provinces extending to the south of the Ruhunu National Park (Yala) where it prefers a habitat of sparse vegetation. In Sinhala it is known as “vali polonga” meaning sand snake and in Tamil it is called “suratti pamba” meaning coil snake describing its striking position. It is an aggressive, irritable, nocturnal snake with a body length ranging from 25 to 35 cm. It is venomous and is the commonest species responsible for snake bites in the north (Jaffna peninsula). However, there are no reported deaths.

It bites fingers or toes of victims, commonly producing local swelling and occasionally blistering and necrosis. The commonest systemic manifestation is coagulopathy (or incoagulable blood detected by the 20WBCT). A small percentage of patients develop spontaneous bleeding. Rarely, mild acute renal failure could occur. There are no neurological manifestations.

Antivenom therapy is effective in correcting coagulopathy with the first dose, but in some situations repeated doses are needed.

SEASNAKES

Identification

Head often small in comparison to the body, with a slender neck and fore body. The hind body is heavy, deep and laterally compressed; belly V-shaped and belly scales vestigial or absent. Tail short, laterally compressed, paddle-shaped, with a rounded tip. Most are silvery in colour with dark bands, the back darker than the belly. The notable exception is the yellow-bellied sea snake that is chocolate brown or black on the back with a bright yellow belly; the tail is patterned in the same colours.

Seasnake bites are painless with no local inflammation.

Puncture marks with rapid onset of pain and inflammation would be due to a fish or sea urchin sting

Seasnakes may be confused with

Water snakes washed out to sea from rivers — belly rounded, belly scales large (except *Acrochordus*). Tail not paddle-shaped, usually conical tapering to a point. Non-venomous. Various colours, none silvery with black bands.

Marine eels, which are types of fish — possess two pairs of nostrils, one pair being tubular, and a gill opening on each side of the neck. Most have paired pectoral fins. Some have a dorsal fin and an anal fin confluent with the caudal (tail) fin. No scales. Some are silvery with black bands, resembling sea snakes.

Signs of envenoming

Page 23

Stiffness, aching and pain on movement of the jaw, neck, trunk and limbs. In serious envenoming (see **Management – below**) muscle movement pain increases rapidly. Reluctance to move because of pain is followed by true paresis.

Myoglobinuria turns the urine red-brown or black in colour.

Specific therapy with seasnake antivenom is very effective and is indicated in serious envenoming.
This is NOT AVAILABLE in Sri Lanka.
Land snake antivenom is NOT recommended.

Management

Trivial envenoming: 10% of bite victims.

Aching, stiffness, mild muscle movement pain involving the neck, trunk, limbs.

No treatment needed, expect resolution within days.

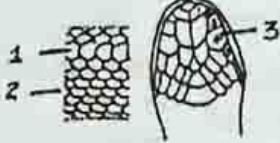
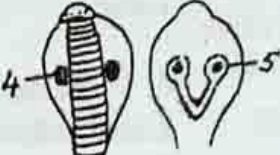
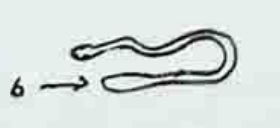



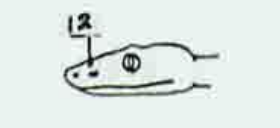

Serious envenoming: 20% of bite victims.

Supportive treatment for—

Respiratory failure
Electrolyte disturbances, especially hyperkalaemia
Renal failure

Venomous and dangerous snakes in Sri Lanka

Courtesy of Anslem de Silva

<p>Black snake, vertebrals (1) larger than costals (2). Fourth infralabial (3) large.</p>		<p>Kraits. Highly venomous. <i>Bungarus caeruleus</i> & <i>Bungarus ceylonicus</i></p>
<p>Distinct hood with two constant ventral spots (4) and variable dorsal markings (5).</p>		<p>Cobra. Highly venomous. <i>Naja naja</i>.</p>
<p>Flat, rudder-like tail (6).</p>		<p>Seasnakes. Venomous. Family HYDROPHIIDAE</p>
<p>Head triangular (7) with "V" mark. Three rows of spots (8) along the body.</p>		<p>Russell's viper. Highly venomous. <i>Daboia russelii</i>.</p>
<p>Small snake with cross mark on the head (9).</p>		<p>Saw-scaled viper. Venomous. <i>Echis carinatus</i>.</p>
<p>Small snake, head triangular, snout raised (10). A pit between the snout and nostril (11).</p>		<p>Hump-nosed pit vipers. Venomous. <i>Hypnale</i> spp.</p>
<p>Stout, large green snake. Head triangular. A pit (12) between the eye and the nostril.</p>		<p>Green-pit viper. Venomous. <i>Trimeresurus trigonocephalus</i>.</p>
<p>Large, thick snake. Head triangular with labial pits (13). Quadrangular markings on the body (14).</p>		<p>Python. Dangerous. <i>Python molurus</i>.</p>

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