

# PINAK

## THE AYURVEDIC ANTIVENIN

*(Continued from the last issue)*



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History usually can be obtained from the patient. Knowledge of indigenous fauna is important.

The time elapsed since bite is a necessary component of the history. This allows assessment of the temporal effects of the bite to determine if the process is confined locally or if systemic signs have developed.

1. Obtain a description of the snake or capture it. Most snakes remain within 20 feet after biting. Identification of the snake guides us to the type of snake venom.
2. Assess the timing of events and onset of symptoms. Inquire about the time the bite occurred.
3. The time when the ligature tied.
4. The distance walked before ligature.
5. The time when the first aid incision was taken.
6. The local treatment taken & its type. Ingestion of the neem tree juice as well as food may promote vomiting if taken in a larger dose & danger of aspiration looms large.
7. Determine history of prior exposure to antivenin or snakebite.
8. Determine history of allergies to medicines.
9. Determine history of co morbid conditions.

**HEALTH EDUCATION:**

Health education is of paramount importance.

Snakes are our friends. It should be remembered that they bite when they are disturbed purposefully or inadvertently. Hence care should be taken while working in the field. If possible, identification of snakes should be taught to the people. Knowledge of indigenous fauna is important.

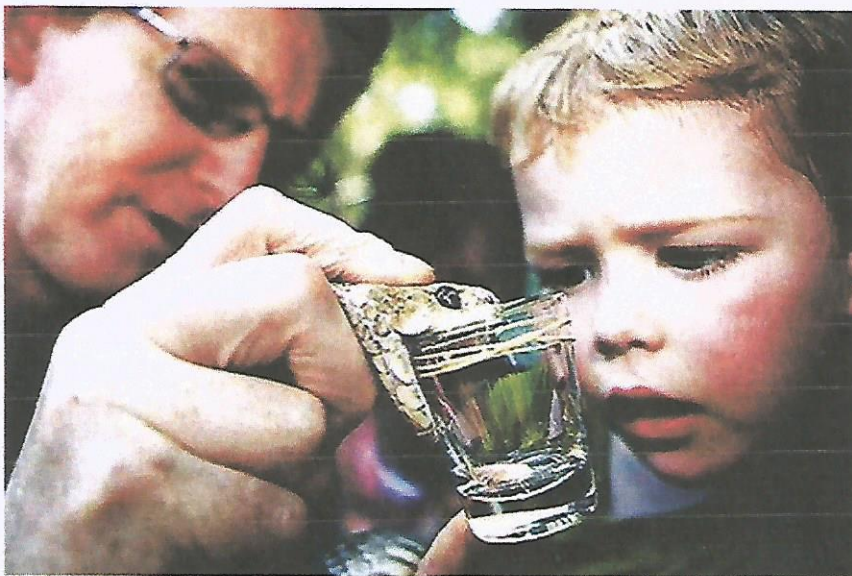
After the bite the part involved must be immobilized or movements must be minimized. Reduced muscular movements reduce absorption of poison in systemic circulation.

**LIGATURE:**

A firm ligature one joint above must be applied. We have seen ligature applied in 46 cases. But it was applied invariably too tightly to obstruct the arterial blood flow also. Hence ischaemic pain is necessarily developed in them. The ligature must be applied tight enough to obstruct only the venous blood flow. Application of ligature helps to prevent systemic mixing of venom. Hence it is life saving.

**FIRST-AID INCISION:**

We have seen first aid incision taken by only one patient. This shows lack of health education.



With a clean blade, an incision of 1" long, 1" above & skin deep on both sides of the bite mark must be taken. This helps in oozing out the venom. Even in bites with hemolytic variety this is useful. The amount of blood loss is minimal as only capillaries keep on bleeding. In texts, it has been stated that in Viper bites first aid incision must not be taken. Incision was found contrary to our stand found more useful in saving the life, time and money of the patient. The dose of any antivenin required is reduced with good first-aid incision. This can be called as 'early fasciotomy'. Hence the need of fasciotomy sometimes required is

also reduced.

**HOSPITALIZATION:**

Out of 75 patients 51 patients arrived after 2 hours after snakebite.

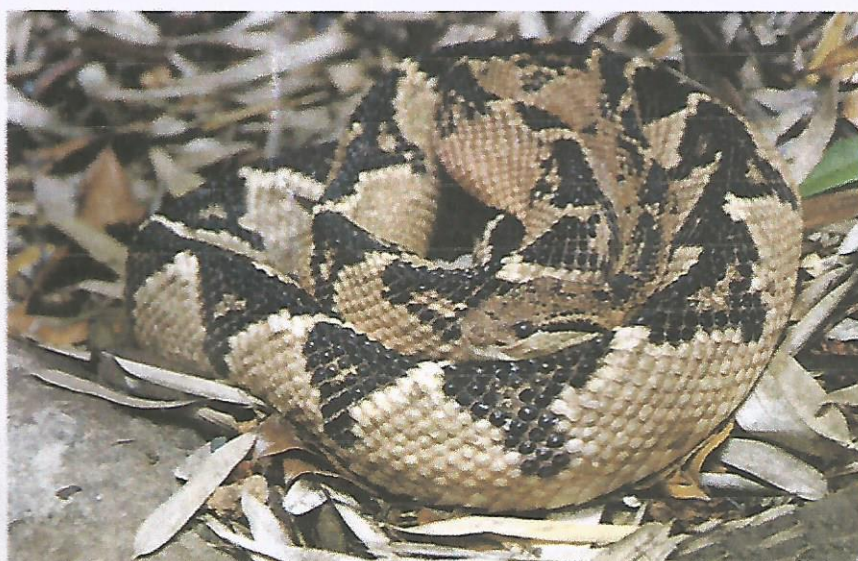
Patient must be brought as early as possible to the hospital OR treated with antivenin to avoid irreversible organ damage.

Do not give any unproved medicine or neem juice which has no effect in snakebite cases. The patients are brought late to the hospital mainly due to time wasted in giving nonuseful country medicine. The neem tree juice stimulates vomiting in some cases which may cause aspiration pneumonia leading to death sometimes.

**Signs and symptoms:**

After hospitalization a physician must observe the patient meticulously for one hour for signs of toxicity. Usually neuroparalytic signs develop in one hour. Later on vasculotoxicity can be observed if not developed earlier. Signs and symptoms are usually classical in snakebite cases. They depend upon the type of snake.

As per our observation Viper bites are found in 59 cases. Cobra bite is seen in 14 cases. Krait bite was seen in 2 cases. 10 cases were of



P-C  
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non-poisonous snakebite.

Hence the plan we follow in snakebite cases is to give medicine only after the signs of toxicity are developed. It saves money. It prevents unnecessary deaths after hypersensitivity reactions. We have not seen any death in this type of protocol.

What is needed to prevent deaths is a confident and knowledgeable Physician.

### MEDICAL CARE:

It must be remembered that snake bite is a case of poisoning.

Give medicine till there is complete neutralisation of poison.

#### 1. FIELD CARE:

- Immobilization of the limb to prevent spread of the venom.
- Application of the tourniquet one joint above the site to hamper the venous & lymphatic inflow.
- Making a good first-aid incision to remove the venom as much as possible so that drug dosages are reduced.
- Suction application at the site of bite by pump, mouth, anal mucosa of the hens.
- Do not give anything to eat & drink to prevent aspiration.
- Remove anything that may constrict the limb if swollen.
- Arrange early transportation to a good hospital.



- Give ABC if required.

#### 2. HOSPITAL CARE:

- Review ABC
- Do Envenomation gradings mild, moderate or severe
- a. **MILD:** is characterized by local pain, oedema, no signs of systemic toxicity, normal lab values.
- b. **MODERATE:** is characterized by severe local pain, oedema larger than surrounding the wound, and systemic toxicity including nausea, vomiting, and altered lab. Values.
- c. **SEVERE:** is characterized by general bleeding tendency, hypotension, renal dysfunction, consumptive coagulopathy, and paralysis.

Grading envenomation is a dynamic process.

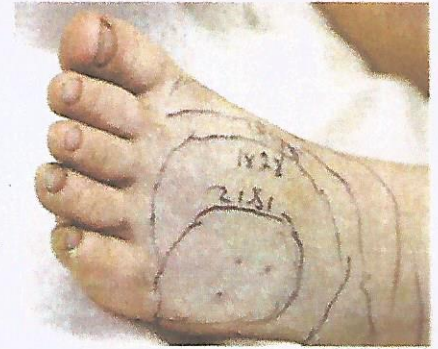
- 3. **FIRST-AID:** Do first-aid treatment if not done previously.

- 4. **PHARMACOTHERAPY:** Give antivenin after testing.

Goal of pharmacotherapy is to neutralize the venom, to reduce morbidity, and to prevent complications.

**a. Antivenins:** It is derived from the serum after the horse is injected with sublethal doses of snake venom. The antivenin is purified and contains other serum proteins that can be immunogenic. While antivenin may be life saving, it may lead to immediate hypersensitivity (anaphylaxis) and delayed hypersensitivity (serum sickness) reactions and must be used with caution.

Treatment policies also vary from hospital to hospital. Some hospitals give injection ASV after signs of toxicity are seen but many do give one or two injections to all including cases of non-poisonous snakebites. Some waste one vial



per patient in only testing for the sensitivity test. Hence crores of rupees are wasted unnecessarily in the country. Of course treatment of patient, after signs of toxicity are seen, needs a confident, sincere, and knowledgeable physician

#### Dosage:

Mild toxicity - 5 vials.

Moderate toxicity - 6-15 vials.

Severe toxicity - 16-30 vials.

Very Severe toxicity - 31-120 vials.

If BT & CT is more than 10 min. give 2 vials over 3 hours & repeat the same as required.

In severe toxicity cases daily up to 30-40 vials can be given. The patients require sometimes upto 120 vials. Few Physicians declare the patient as ASV resistant if ASV requirement goes above 80 vials.

#### Characteristics:

- Antivenin needs preservation at 2 - 8 C.
- Only available in hospitals.
- Cost of ASV is high.
- Expert and trained person is required to administer the ASV.
- Hypersensitivity is quite frequent which may be sometimes lethal.

**b. Antibiotics:** Broad-spectrum antibiotic prophylaxis still is recommended.

**c. Immunization:** Tetanus prophylaxis recommended in non-immunized people.

**d. IV line:** For emergency requirements.

**e. AYURVEDIC 'PINAK':**

The first historical epic 'Ramayana'