Snake Bite Injury

Venomous snake bites are a considerable source of mortality worldwide. Patients who have been bitten may present with local edema, erythema, and tissue necrosis. Systemic findings include neurotoxicity, distributive shock, and DIC. The diagnosis is usually made by clinical impression. Management includes antivenom and close observation.



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Local Findings

Edema
Edamame
Local swelling is present in most snake bites. In the United States, rattlesnakes and coral snakes are notorious for causing tissue edema.

Erythema
Earth-red
Erythema is common around the site of injury. This is caused by the release of inflammatory mediators such as histamine, prostaglandins, and nitric oxide.

Tissue Necrosis
Tissue-box Necrosis-crow
A rattlesnake bite may notably cause tissue necrosis at the site of injury. This is due to powerful hematologic effects of its venom.

Systemic Findings

Neurotoxicity
Neuron with Toxic-green-glow
Neurotoxicity may refer to local paresthesias at the site of injury or more systemic findings like seizures or altered mental status. Paralysis and significant respiratory inhibition may also occur.

Distributive Shock
Distributing-pipes
Patients who are bitten by venomous snakes may present with distributive shock. This is due to increased capillary permeability and subsequent "third spacing" of plasma. Patients may also develop cardiogenic shock due to the direct activity of the venom on the cardiac muscle.

Disseminated Intravascular Coagulation (DIC)
Dice In-vascular Clogs
Snake venom may lead to consumptive coagulopathy and DIC. Patients will exhibit spontaneous bleeding from puncture sites and increased PT/PTT with low platelets.

Diagnosis

Diagnosis by Clinical Impression
Diagnostic-computer displaying Clinical Impression
This disease requires no laboratory tests to confirm as a positive history for venomous snake exposure plus a characteristic wound and local signs/symptoms is enough to diagnose and begin treatment.

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Management

Antivenom

Ant-tie Venom

Once the diagnosis of snakebite is established, patients should be treated with antivenom. Patients clinically determined to have minimal envenomation should be monitored before treatment with antivenom. Antivenom itself is composed of antibody fragments to the venom itself.

Closely Monitor Patient

Monitor Close to Patient

Patients should be monitored closely for a minimum of 12 hours. The length of the patient's inpatient stay depends on the degree of envenomation and the treatment required. Certain complications such as DIC can take hours to days to develop.

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