



Bismillahirrahmanirrahim

In the name of Allah, The Most Gracious, The Most Merciful

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Learning objectives

- ▶ Enlist commonly encountered mechanical poisons
- ▶ Describe symptoms, signs, treatment, post-mortem appearance and forensic importance of powdered glass.
- ▶ Describe the symptoms, signs and treatment of scorpion and wasp bite.

Mechanical poisons

- ▶ Mechanical poisons are actually not poisons, because they are not absorbed but produce symptoms of irritant poisoning solely in consequence of their mechanical action on the part with which they come in contact.

▶ Substances included are :

1. powdered glass
2. pins
3. needles
4. chopped hair etc.

▶ The most common being powdered glass.

▶ Powdered glass is special, as this substance and similar products such as powdered diamonds are mentioned in the literature as poisons.

Symptoms and Signs

- ▶ When taken internally, coarse particles of powdered glass produce a sharp burning pain in the throat, stomach and abdomen.
- ▶ There is nausea and vomiting, the vomit being blood stained.
- ▶ There is generally constipation but sometimes diarrhoea with tenesmus and blood.
- ▶ Death may occur from shock, if stomach or intestine has been perforated.
- ▶ Due to presence of silica which is radiopaque, glass pieces may cast a faint shadow on X-ray and this helps in diagnosis.

Treatment

- ▶ This consists of giving bulky food, such as large quantity of rice or banana to envelop the fragments of glass within it.
- ▶ Emetics and laxatives but no violent purgatives.
- ▶ The rest of the treatment is symptomatic.

Post-mortem appearances

- ▶ There is inflammation of the stomach and intestine.
- ▶ Erosions and ulcerations may also be found.
- ▶ Occasionally there may be a perforation.
- ▶ Fragments of powdered glass may be found, adherent to tenacious mucus secretion of the stomach.

- ▶ In a fatal case of suspected homicide, viscera should not be preserved in glass vessels.
- ▶ The glass recovered from the viscera, and its relationship to glass seized from an accused person, can be decided by spectroscopic examination for unusual elements.

Medico legal aspects

- ▶ Mixed with food, coarse particles of powdered glass have been administered with homicidal intent.
- ▶ Finely powdered glass is less destructive in its effects.
- ▶ Accidental contamination of food with glass may occur from the glass container itself.
- ▶ It is sometimes used to destroy cattle.



Introduction

- ▶ Scorpions have a crab like appearance with a long ,fleshy body which has a segmented tail , ending in a broad sac and a prominent hollow sting which communicates by means of a duct with the venom secreting glands.
- ▶ The venom contains toxalbumins, having neurotoxic and hemotoxic actions.
- ▶ Its toxicity is greater than that of snakes but only a small quantity is injected.

Symptoms and signs

- ▶ The local irritation is characterized by redness and burning pain radiating from the site.
- ▶ There may be headache, giddiness, nausea, profuse perspiration and muscular cramps followed in some cases by coma.
- ▶ Although the duration of symptoms is ordinarily 24 to 48 hours, neurologic manifestations may persist for up to one week.

- ▶ While the mortality in adults is negligible, children may succumb from pulmonary edema.
- ▶ Pathologic findings in cases of death are widespread hemorrhages.
- ▶ Myocardial damage is found in deaths from red scorpion stings.

Treatment

- ▶ A ligature should be tied proximal to the site of sting, provided the bite is on a limb.
- ▶ The site incised, if necessary, and the wound washed with plain water, ammonia or potassium permanganate.
- ▶ Local infiltration of an anesthetic lessens pain and immobilization of the bitten part diminishes absorption of venom.

- ▶ A specific anti venom is available for most species and should be tried.
- ▶ Injection of calcium gluconate, 10 ml of 10% solution is slowly intravenously relieves muscular cramps.
- ▶ Injection of atropine helps to prevent pulmonary edema.
- ▶ Symptomatic treatment.

Wasp bite

- ▶ Venom of bees, wasps, hornets, ants etc. is a complex mixture of biomedical compounds ranging from simple amines to complicated proteins or enzymes.
- ▶ Action is usually local.
- ▶ It may rarely be fatal if venom contains histamine (especially when bite is on neck, face etc.).

- ▶ However, it can result in laryngeal edema leading to asphyxia and death, when not treated Immediately.
- ▶ When there are multiple stings, it can lead to severe systemic reactions, resulting in gastrointestinal disturbances, shock, unconsciousness and death.

Treatment

- ▶ Measures to reduce the rate of absorption of venom by :
 - Tourniquet above the level of stinging or incision and suction.
 - Adrenaline is also useful.
- ▶ Apply tincture iodine or antihistamine(to reduce inflammation)
- ▶ Local application of hydrocortisone cream.
- ▶ Acetaminophen or ibuprofen for pain.
- ▶ Steroids may be given.

حزب الحكماء لله معيبرا

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