Abstract:

Snake bite is an acute life threatening emergency and preventable public hazard. The number of snakebite reported are far less than actual number of bites as only 20 percent of patients attend hospital. Of the total number of bites only 30 percent are venomous and snake venom could be hematotoxic, neurotoxic, myotoxic or a combination of them. Here we present a case of isolated hematotoxic snake bite as the patients coagulation profile remained deranged even after ASV administration but since there was no evident bleeding despite coagulopathy he was managed conservatively with close monitoring and no further ASV.

Introduction:

Snake bite is an acute life threatening emergency and preventable public hazard. The number of snakebite reported are far less than actual number of bites as only 20 percent of patients attend hospital. Most number of cases comes mainly from rural areas affecting young male population more than female.

Snakebite is often accidental when the snake is trodden upon or deliberate handling by herpetologist or snake collector or often during sleeping on floor bed (usually by KRAIT).
Worldwide there are more than 2000 species of snake of which around 300 species are found in India of which 52 are venomous. The venomous snake commonly belongs to three families i.e. Elapidae, Viperidae and Hydrophidae. Cobras, King cobra, KRAIT, Coral snake are included in Elapidae. Kraits are usually active during night hours and Viper and Cobra bite occur day early darkness.

Bite mark may vary as paired fang mark, single fang mark or even no bite mark may be visible (as often with KRAIT). Although a bite mark may be there, envenomation may not occur
Snake venoms are complex mixture of toxins and may present as hematotoxic, neurotoxic, myotoxic or combination of them. In an Indian study by Saravn K et al showed that hematotoxic and neurotoxic envenomation were observed in 73% and 19% of cases respectively and hemoneurotoxic manifestation were seen in 5.26% of cases.

Case Presentation:

An 18 year old boy presented to ER department at 8am with history of snake bite on

the right index finger at 7.30 am. At presentation he was afebrile, conscious, oriented with vitals of pulse- 92/ minutes, BP of 126/70 mm of Hg, RR of 22/minutes, and SpO2- 99 at room air. Local examination showed the bite mark with blister formation. WBCT was more than 20 min. He was started on ASV (10 vials) and shifted to ICU for further management. In ICU he was hemodynamically stable with normal respiratory parameters. No significant abnormalities detected on systemic examination but the local wound site gradually became necrotic. He was started on antibiotics, anti-inflammatory, analgesic and surgery consultation was taken. After 6hours of 1st dose of ASV, WBCT was repeated and was still positive. Also lab investigation showed deranged coagulation profile (PT- 24.2, INR- 2.11, APTT- 43.5) but rest of the lab parameters including CBC, renal function, liver function were normal. Another dose of 10 vial of ASV was administered to the patient. Coagulation profile was repeated after 8 hours which showed further deterioration (PT- 49.3, INR- 4.82, and APTT- 71.2) but there was no clinically evident bleeding and also the hemoglobin levels were static. Another 5 vials of ASV was repeated. The patient received a total of 25 vials of ASV by the end of 2nd day. On 3rd day also coagulation parameters were not within normal range but there was no evident bleeding thus no more ASV was given. His WBCT came 7 minutes on 3rd day. He was kept under close monitoring and was shifted out of ICU on 4rth day and discharged on 5th day once coagulation profile became normal.

Discussion:

Snake venom consist of complex mixture of toxins like zinc mettaloproteinase hemorrhagins and procoaguant enzymes which leads to endothelial damage and activation of factor X and prothrombin thus causing consumption coagulopathy and possibly thrombotic microangiopathy(DIC) creating a significant risk of bleeding. Relatively a small number of dangerous species also contain anticoagulant which prevents blood clotting without consumption of clotting factor.

Symptoms and there onset time might vary depending upon species, size and location of bite, amount of venom injected. There might be progressive onset of major symptom and sign of untreated envenomation such as headache, nausea, vomiting, abdominal pain, transient hypotension, coagulopathy, regional lymphadenitis, and hemorrhage from mucosal surface or needle puncture sites, rhabdomyolosis, myoglobinuria peripheral circulatory shock and renal failure. Mortality in viper bites is due to hypovolemia, intravascular hemolysis/DIC or AKI.

Management consists of application of pressure immobilisation first aid bandage,

resuscitation (mechanical ventilation and restoration of blood pressure with IV fluid, ionotropic agent and blood products), administration of ASV and other supportive measures. WHO recommends ASV to all patients with signs of systemic envenomation like haemostatic abnormalities (spontaneous bleeding distant from bite site, INR more than 1.2, thrombocytopenia less than 1 Lakh), neurotoxic sign(ptosis, external ophthalmoplegia and paralysis), cardiovascular abnormality, AKI, myoglobinuria, local swelling involving more than half of the bitten limb, rapid extension of swelling within few hours or development of enlarged tender lymph node draining the bitten limb. Dose of ASV can be repeated if WBCT/ coagulation parameter doesn't improve.

Our case was assumed to be due to viper bite because of presence of coagulopathy and was managed with ASV and other supportive measures but after 3rd dose no more ASV was given as the patient doesn't have any sign of bleeding despite abnormal coagulation profile which improved spontaneously within 5 days. This calls for further study regarding indications of ASV in snake bite patient with abnormal coagulation profile but no signs of bleeding.

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