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Research Article

Circulation Disorder and Amputation that Occurs Late Term Due to Snake Bite: A Case Report

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Abstract:

Despite increase of urban life in developing countries Snake bites are stil constitiue a significent number of emergency service admission. It clinically shows wide diffrent status from local findings such as pain or redness at the wound site to life threatening systemic disorders such as neurotoxic, cardiovascular, hemostatic and mental disorders. In this case, we aimed to present an amputation which is one of the various clinical presentations of snake bites as a late-period complication

Keywords: snake bite; late period circulation disorder; amputation

Introduction

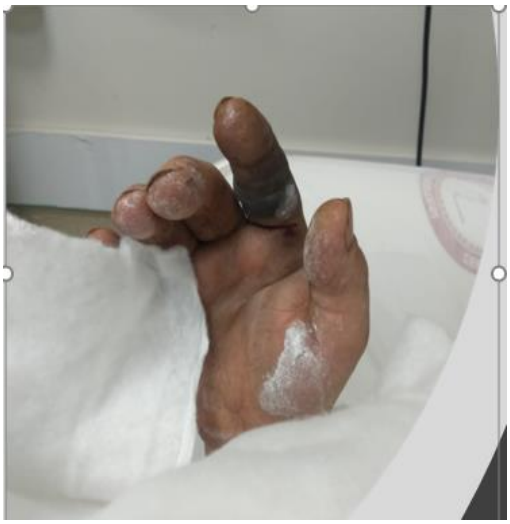
The bite of venomous animals is a major public health problem in the developing world. At least 1.8 – 2.7 million cases reported annually world wide, with death ranging from 81,410 to 137,880. Allthough epidemiological studies are limited in Türkiye, in a study in which 273 patients admitted to emergency department due to biting and stinging with in a year, 5.5 % of them found to be admitted with snaake bites. In another study 1685 patient admitted to emergency department due to snake bite and stung between 1993 and 2010 were elavuated and 18.5% of the patients were found to be snake bites [1-2].

The venom discharged from the teeth following the bite spreads to the body through especially lymphatic system and also blood circulation. The clinical situation waries according to the charectristics of the toxin and the local or systemic response of the person to the toxin. Clinical improvement of patients is seen after application of snake anti venom. (SAV). The local tissue effects that occurs after poisoning due to snake bite may show itself with recurrence after 6-36 hours, even if symptomatic improvement is observed after the application of SAV. Re evaluation of hematologic parameters should be done with in 2-3 and 5-7 days after the last application of SAV. Allthough it is known that hematological complications can recur in the late period, it is important for clinicians who follow up and treat venomous snake bites to know that local complications can also recur in the late period and should not be missed during controls. [1] Allthough Clinical condition may be in the form of local wound, neurotoxic, musculoskeletal system, cardiovasculer system, hemostatic, renal, and mental disorders it is not limited to theese. [3] The treat of snake poisoning is includes; first aid, management of local and systemic effects, management of complications, and follow up of patient for preventing sequelea or disabilities. SAV is the one special intervention for snake bites that is necessary but there is some important discussion about the administration of SAV, types, and also accordance of different snake species and geographic areas. SAV is suggested current treatment for snake bites and must administrate for systemic and local complications[4].

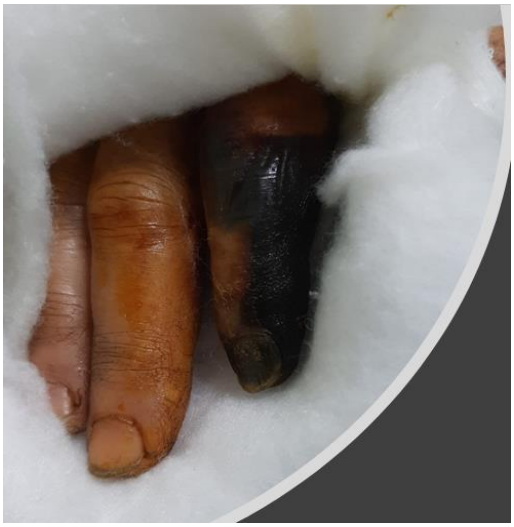
Case

54 years old female; applied to emergency service with the complained of snake bite on the right-hand second and third finger distal phalanx. The patient arrive at the Emergency service in the 4th hour after the bite and had pain in the wound. She was anxious and conscious. She had a story of tourniquet for nearly 15 minutes. The splint which was made in another hospital removed. A forearm edema and, 0,6*0,6 cm bullous ecchymosis of distal phalanx observed. (Picture 1) Tetanus profligacy was administrated in the first hospital. Blood work had done for hemogram, electrolytes, renal function tests, liver function tests, CK, troponin, and coagulation parameters in emergency service. ECG: normal sinus rhythm and 80/min heart rate. We thought grade II snake bite, because of worsened local complications and administrated two SAV with 100 cc 0,9% NaCl IV. 150 ml (0,5 g/kg) 20% mannitol solution started. After 4 hours 100 ml 20% mannitol was reapplied. During the follow-up in the emergency service IV, 0,9% NaCl infusion was continued at a rate of 150ml/hour.There is no laboratory disorder was observed in the patient during the follow-up for 72 hours in the emergency service department. (Table 1). The patient's edema and ecchymosis regressed and she was discharged four days later to come for a follow-up. On the fourth day, the laboratory results of the patient that came for control were in the normal range. No paresthesia or movement defect was observed during the extremity examination. The bullous lesion on the second finger was broken open and there was serouse drainage in the wound area. Amoxicilline prescripted and control scheduled 5 days after. During the

11th-day control examination; disorder of finger circulation and progression of the ecimosis line to the proximal phalanx were observed. (Picture 2) The patient was consulted for Plastic Surgery and decided to amputate the 2nd finger at the level of the proximal phalangeal joint.



Picture 1: A forearm edema and, 0,6*0,6 cm bullous ecchymosis of distal phalanx observed



Picture 2: During the 11th-day control examination; disorder of finger circulation and progression of the ecimosis line to the proximal phalanx were observed

	29.09	29.09	30.09	30.09	01.10	05.10	11.10
INR:	1.09	1,15	1,16	1,13	1,13	1,08	0,91
PLT:	131	298	232	251	233	284	317
Hgb:	13,4	14,4	13,5	11,8	10,9	13,6	12,9
CRP:	5,63	5,51			12,6	8,06	10,8
Troponin:	0,01	0,01	0,01	neg	neg	neg	neg
Cre:	0,68	0,65	0,67			0,54	0,67
CK:	127	94	90			48	39

Table 1: Laboratory Results

Discussion

The clinical situation in snake bites determines the management of the patient. Systemic or local complications vary according to the type of snake, the response of the person bitten, as well as the location of the bitten area. The edema, usually develops within the first 2 hours, and regional lymphadenopathy and tissue tension around the bite, which can be seen in the first few days, regress over time. Although administration of SAV is not routinely performed due to the risk of allergy and anaphylaxis, It should be applied in the presence of systemic findings such as leukocytosis (>15,000/mm³), spontaneous bleeding and coagulopathy, persistent and recurrent hypotension, abnormal ECG changes, impaired consciousness, uremia, oliguria, and anuria, and/or local findings such as the edema, tissue necrosis, compartment syndrome[5]. Although there were no systemic findings in our case, 2 vials of SAV were administered due to the presence of edema and ecchymosis. Although SAV is applied in case of tissue necrosis, its use for prophylaxis is controversial [5].

Head and trunk bites are the most dangerous bite sites in terms of systemic complications. Our patient was bitten on the finger. Although extremity bites caused fewer complications in terms of systemic complications than head and trunk bites, they are riskier in terms of tissue necrosis and amputation. Although it varies by region, tissue necrosis develops in 10% of snake poisoning cases. The most important local pathological lesion developing due to snake bites is muscle necrosis and usually begins within 24 hours [5]. In our case, probable tissue necrosis, which started with ecchymosis on the fingertip, did not progress while the hospital stay, it showed rapid progression after the patient's 1st follow-up. For this reason, it should be considered that necrosis may occur in the late period in addition to tissue necrosis that starts in the first 24 hours.

As a wrong application, strangulation of the bitten area, with a tourniquet should not be done, because it may disrupt circulation and cause tissue necrosis and reperfusion damage. In our case, she tied a tourniquet to her finger for 15 minutes before arrived to the hospital.

In addition to the medical follow-up of the patient, effective wound care should also be performed. Routine antibiotic treatment is not recommended because tissue infections occur in only 3% of snake bite wounds [4]. Although the prophylactic antibiotic application is controversial when an image suggestive of infection occurs, an antibiotic that acts on gram-negative aerobic bacilli and gram-positive aerobic cocci and anaerobes can be applied, debridement can be performed and cultured in the presence of necrotic tissue [6].

In our case, a possible wound infection may have increased tissue necrosis and impaired circulation. Early debridement and the selection of effective antibiotics by culturing would be a more appropriate approach.

Conclusion

Allthough it is known that hematological complications can recur in the late period, it is important for clinicians who follow up and treat venomous snake bites to know that local complications can also recur in the late period and should not be missed during controls.

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