



CASE REPORT

AN AYURVEDIC MANAGEMENT ON VIPERINE SNAKE BITE

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ABSTRACT

Snake bite remains an underestimated cause of accidental death in India. Snake venoms are mixtures of numerous protein components that exert diverse functional activities on a variety of physiological targets .Ayurveda ,the science of life is well developed in *visa chikitsa* (Toxicology). It has its own way of approach towards the management of *visha* (toxin) and is discussed with the concepts of current science. A case of Ayurvedic management of viperine snake bite poisoning(PE-1.3) is presented here. Patient showed two bite marks over medial side of left ankle joint, swelling over the bite site extending upto the knee with pain , fluctuating blood pressure and without any other signs of poisoning. This symptoms could be due to envenomation caused by a snake probably from viperidae family .

Keywords: Viperine snake bite, Ayurvedic Management

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INTRODUCTION

Snake bite is a well-known occupational hazard amongst farmers, plantation workers and other outdoor workers and result in much morbidity and mortality throughout the world. It can be life threatening if the snake is venomous. In India more than 2,000,000 snakebites are reported annually, of which 35,000-50,000 people die [1]. Its importance can be understood by the fact that snakes holds important places in Indian mythology. They were worshipped and pleased through various means not to harm. The toxic constituents found in venom vary from species to species. Snake envenomation can be broadly divided into haemotoxic, cytotoxic and neurotoxic variety. It is relatively easy to monitor haemotoxic poisoning by following the coagulation profile of the patient such as bleeding time, clotting time, prothrombin time and activated prothrombin time. The management of haemotoxic viperine bites is determined by monitoring the response of these parameters to antivenom and other supportive treatment. Occasionally the coagulant profile doesnot respond as expected despite adequate treatment with antivenom. Several medicinal plants, which appear in old drug recipes or which have been passed on by oral tradition are believed to be snakebite antidotes.

From the ancient times snakes were given due importance for their dreadful attitude. Starting from the vedic period and later on snakes were considered as most important among the animate poisons. The vedic methods of snake bite management mainly involves chanting of mantras, use of precious stones and meditation along with use of some special medications. Later, in Samhitha period other methods and medicines become more popular. A case is presented to illustrate Ayurvedic management of viperine snake bite poisoning.

CASE REPORT

A male labour aged 40 years previously healthy was bitten by a snake on medial side of left ankle joint at around 2.45 pm on 2/11/2019 was brought to nearby hospital at 3.15 pm. Treatment starts with polyvalent anivenom (10 vials) as infusion and supportive treatments as per protocol of that hospital was done successfully and discharged. But as days passed pain and swelling over the leg become severe and the patient was brought to Sree Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka on 6/11/2019.

On admission he was alert and oriented with BP -110 / 20 mm Hg, Pulse :60/ min Respiration rate: 16/min and Temperature : 99⁰ F and Urine was dark yellowish. On examination there was no bleeding from any site including the site of bite. There was two bite marks and some

clotted blood over the site, presence of pitting oedema extending upto the knee(Figure 1).On examination all systems appeared normal except pain and swelling over the left ankle



Figure 1: Bite site at the time of admission

Laboratory data on 5/11/2019 -A.P.T.T Test(Activated Partial Thromboplastin Time Test):35.6Secs,CONTROL:29.5,PROTHROMBIN TIME TEST :15.0 sec, PROTHROMBIN TIME CONTROL :10.8 sec, I.N.R(International Normalised Ratio) :1.15 .

Doppler study of Left Lower Limb Arterial System : Impression :No evidence of haemodynamically significant arterial stenosis / obstruction. Diffuse subcutaneous edema seen in left lower limb s/o cellulitis. Doppler study of Left Lower Limb Venous System: Impression : No evidence of DVT(Deep Vein Thrombosis). Diffuse subcutaneous edema seen in left lower limb s/o cellulitis.

Laboratory data on 6/11/2019 -Haemoglobin: 8.2 gm % ,Total WBC Count: 8,200 cells/CMM,

joint. No other haemorrhagic and neurological manifestations were observed clinically on admission.

E.S.R(Westergren's Method) :10 mm /hour. Differential W B C Count : Neutrophils : 65%, Lymphocytes :27 % ,Monocytes : 02% , Eosinophils :06 % , R B C Count : 2.33 Millions / CMM. Haemogram Report : P.C.V :19.5 % ,M.C.V : 83.7 fL , M.C.H :33.9 Pg ,M.C.H.C : 40.5 % , R.D.W :38.8 fL. Biochemistry Report; RBS :136.6 mg/dl ,Blood Urea :25.4 mg/dl , Serum Creatinine:0.8 mg/dl. Urine Analyser Report : Leucocytes :Negative, Glucose : Negative,Protein: Negative , PH :8.0 , Specific Gravity : 1.000 ,Serlogy Report : Human Immunodeficiency Virus : Negative , HbSAg : Negative , Haematology Report : Bleeding Time : 2.45 minutes, Clotting time: 4.45 minutes.

Treatment was started without any delay with *Laja manda* (thin gruel prepared out of parched

rice) [2] every two hourly , *Patola katurohinyadhi kashaya* (a decoction made from *Trichosanthes dioica* , *Pycorrhiza kurroa* , *Santalum album*, *Leptadenia reticulate*, *Tinospora cordifolia*, *Cissampelos pareira*)[3] 15 ml thrice daily with 45ml of luke warm water , Tab *Dooshivishari* [4] 2 tablet thrice daily with honey , Tab *Vilwadi* [5] 2 tablet thrice daily with luke warm water, Tab *Sanjivani* [6] 2 tablet thrice daily with luke warm water, Powder of *Triphala* [7] (Combination of powder of seeds of *Terminalia chebula* Linn , *Terminalia bellirica* Linn, *Emblica officinalis* Linn.) 10gm with *Draksha Kashayam* (decoction prepared out of *Vitis vinifera* Linn. seeds) [8] 50ml twice daily . For local application over the bite site up to knee *Shigrupunarnavadhi yoga* (an anti poisonous formulation)[9] was selected. Advice patient to not sleep at daytime.

By the following morning ,his Blood pressure become stable as 110/60 mmHg, Pulse 70/min, Temperature 98⁰F.

Laboratory data on 7/11/2019 - Haemoglobin : 8.6 gm% , L.F.T (Liver Function Test) : Total Bilirubin :1.2 mg/dl ,Direct Bilirubin :0.8 mg/dl

,Indirect Bilirubin :0.4 mg/dl ,Total Protein :5.6 mg/dl, Albumin 3.4 mg/dl ,S.G.O.T [AST] :39.6U/L ,S.G.P.T [ALT]:53.6 U/L ,Alkaline Phosphatase [ALP]:46.0 IU/L, Total Electrolytes : Serum Sodium :137.2 mmol/L, Serum Pottassium :4.3 mmol/L , Serum Chloride : 95.0 mmol/L.

Diet as *Mudga yusha*(soup prepared out of *Vigna radiata* Linn) [10] in the morning, *Laja manda* every 2 hourly, Rice prepared by boiling vegetables, pulses in mild salty water at afternoon and *Tanduliyaka ganji*(rice gruel prepared by adding leaves and stem of *Amaranthus spinosus* Linn) [11]at night.

By the following days medicines are continued like the same along with external application of *Shigrupunarnavadhi yoga*. On the fourth day powder of *Triphala* powder is given to patient along with *Aragwadadhi kashayam* (decoction prepared out of drugs for purification of body)[12].

By the fifth day swelling and pain reduced considerably (Figure 2) and urine became clear. On the eighth day onwards *Mahatiktaka ghritham*[13] 2 tsp is given at early morning in empty stomach.



Figure 2: Marked reduction in inflammation during the treatment

Laboratory data on 13/11/2019 -Haemoglobin :
10.2 gm% ,Total WBC Count:9400 cells/CMM,
ESR : 20 mm/hour ,Neutrophils :61%,
Lymphocytes :30%,
Monocytes:02%,Eosinophils :07%, R B C Count
:4.48 millions/CMM, Haemogram Report :
P.C.V:35.4%,M.C.V : 79.0 fL, M.C.H :25.2 Pg ,
M.C.H.C:31.9 % ,R.D.W: 43.6Fl, Biochemistry
Report : R B S :113 mg/dl ,Blood Urea : 28.8
mg/dl , Urine Analyser Report : Leucocytes

:Negative , Glucose : Negative ,Protein :
Negative, PH:6.5,Specific gravity : 1.005 ,
Haematology Report : Bleeding Time :2.45
Minutes, Clotting Time : 4.30 minutes.

On the ninth day *Laja manda* was stopped , as
the patient having mild pain over the bite site
after lepa is removed advice him to apply
Shathadhoutha ghritham [14] over the area.

On the eleventh day patient was subsequently
discharged, fully recovered.(Figure 3)



Figure 3: Bite site at the day of discharge with completely relieved inflammation

RESULTS AND DISCUSSION

This case presents an evident Ayurvedic management for Viperine snake bite. The polyvalent anti-venom that is used in India should cover the venom of *Naja naja* (Cobra), *Bungarus caeruleus* (Common krait), *Daboia russelii* (Russels viper) and *Echis carinatus* (Saw-scaled viper). It is very much possible that the snake which bite this patient was from Viperidae family. Viper venom is a complex toxin with rich components principally affecting haemostatic mechanisms. So the treatment is planned to relieve the complications of snake bite through various treatment modalities in Ayurveda.

Laja manda which is given initially helps to maintain normalcy of body functions [2]. *Patolakaturhinyadhi Kashayam* removes toxins from blood and liver [3], *Dooshivisari* [4] as well as *Vilwadi* [5] tablets are the anti-toxic formulations in Ayurveda which is found to be useful in neutralizing toxins. Most of the contents of *Sanjivani* tablet [6] possess anti-oxidant, anti-pyretic, cyto-protective, anti-hepatotoxic like actions so it is selected for internal administration for the patient. *Triphala* powder [7] is used along with *Draksha kashaya*, here *Terminalia chebula* is having haemostatic, diuretic and laxative actions, *Terminalia bellerica* is having anti-pyretic action, *Emblica officinalis* have enzyme inhibitory, antihaemorrhagic, anti-

inflammatory and anti myotoxic potential. Along with this, the seed extract of *Vitis vinifera* Linn has the property of neutralization of haemorrhage, edema inducing and myonecrotic properties. It also causes partial inhibition of procoagulant activity due to viper venom. [8]. *Shigrupunarnavadhi yoga* [9] is the well known formulation for inflammation in case of viperine snake bite which is mentioned in ancient Ayurveda toxicology texts is applied successfully on the bite site of the patient upto the knee gave a marked relief. *Mudga yusha* is given for detoxification of the body as well as wholesome diet [10,13]. *Tanduliyaka ganji* [11] is having anti-toxic property along with rice gruel helps in maintaining proper digestive power. *Aragwadadhi kashaya* [12] having the depurative, anti-oxidant, anti-inflammatory as well as immune-modulatory action along with powder of triphala will help in washing out of the toxins through stools. So above all formulations that are selected for both internal, external as well for diet favors in fast recovering from the symptoms.

CONCLUSION

Snake bite is a well known occupational hazard. It remains a major health concern in India since long time. From the early vedic period up to now the treatment procedures for snake bite have been changed a lot and still new techniques are emerging day by day. But the role of ancient Ayurvedic methods and herbal

remedies cannot be neglected completely. The reliance on herbal medicines is vitally important because of wide acceptance, easy availability, affordability, safety, cultural preference and chiefly the poor health care services in rural areas.

In this case, the treatment is done for the post complications of viperine snake bite. The unique Ayurveda system implements treatments both externally and internally to the patient along with suitable diet and regimens. The pharmacological potential of the drugs used in the treatment helps the patient in relieving from the symptoms. The reliance of herbal medicines is vitally important in this type of cases. So the physician aims at curing the physical as well as mental attributes of the patient which is one of the unique concepts in Ayurveda.

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