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Ayurvedic management of Ischemic Gangrene due to Diabetes Mellitus - A Case Report

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ABSTRACT

Medical science says that ischemia is a common complication in Diabetes, especially in the lower limb but this is a case presenting ischemic changes in upper limb which is unique and also in such type of acute ischemia amputation is the only choice of treatment to save the life of patient from septicaemia. Such a rare and interesting case was taken at Sri Sri Ayurveda Hospital and handled by proper Ayurvedic line of treatment by which circulation is re-established which saved both limb and life of patient. A patient by name Sundaramma, 62yr Female, visited Sri Sri Ayurveda Hospital on 29/2/2016 with a diagnosis of Right upper limb Ischemia with Diabetes Mellitus and Active TB. The main symptoms were severe pain and burning sensation in Right hand and forearm, discolouration of fingers with ulcers, Bluish black discolouration over right thumb, necrosis, pus discharge and stiffness, associated with difficulty in movement of right arm, shoulder joint, elbow joint, palm and fingers. Diagnosed as Right Upper Limb Ischemia with Diabetes Mellitus and active TB. Therapeutic interventions like Right upper limb Doppler and CT angiogram were done. Such a complicated case was taken at Sri Sri Ayurveda Hospital, and carefully handled by Ayurvedic methods of management, which was ended up by preventing amputation of the limb and also achieving the re-establishment of arterial circulation.

Key words: Ischemic-Gangrene, Amputation, Arterial occlusion, Hypo-echoic thrombus.

INTRODUCTION

Medical science says that ischemia is a common complication in Diabetes, especially in the lower limb but this is a case presenting ischemic changes in upper limb which is unique and also in such type of acute ischemia amputation is the only choice of treatment to save the life of patient from septicaemia.^{[1][2]} Such a rare and interesting case was taken at Sri Sri Ayurveda

Hospital and handled by proper Ayurvedic line of treatment by which circulation is re-established which saved both limb and life of patient. Here is the case report.

A patient by name Sundaramma, 62yr Female, visited Sri Sri Ayurveda Hospital on 29/2/2016 with complaints of severe pain and burning sensation in Right hand and forearm, discolouration of fingers with ulcers, discolouration over right thumb, necrosis with pus discharge and stiffness, associated with difficulty in movement of right arm, shoulder joint, elbow joint, palm and fingers.

Patient was a known case of Diabetes Mellitus, on medication since 6 years, and active Tuberculosis with medication since 3 months and patient was previously consulted and admitted at KIMS hospital on 25/02/2016 and condition was diagnosed as right upper limb ischemia. And was advised for Right upper limb amputation. Patient was discharged on request on 29/02/2016.

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Again patient was sent to Sri Jayadeva Institute of Cardiovascular Science and Research, on 2/3/2016, there also it was diagnosed as right upper limb arterial occlusion and ischemia with delayed presentation, and they opined that patient may benefit with right upper limb amputation. But in view of active TB patient was referred to Multispecialty hospital.

As patient is known case of diabetes mellitus, having active TB and on medication, the high risk involved in amputation and risk about anaesthesia are explained to the patient and further referred to higher multispecialty centres for needful.

Then patient was admitted under Dr Vikram.S. at Sri Sri Ayurveda Hospital between 2/3/2016 to 23/4/2016 and the details are as mentioned below;

De-identified demographic information and other patient specific information

According to a study titled population based study of incidence, risk factors, outcome, and prognosis of Ischemic peripheral arterial events, the clinical burden of peripheral arterial event is substantial. Although vast majority of patients have known vascular disease in other territories and multiple treatable risk factors, pre morbid control is poor.

Main concerns and symptoms of the patient

Main concern of patient was pain and burning sensation in Right hand and forearm, discolouration of fingers with ulcers, discolouration over right thumb, necrosis with pus discharge, and stiffness, associated with difficulty in movement of right , shoulder joint, elbow joint, palm and fingers.

Medical, family, and psychosocial history including relevant genetic information

- Known case of diabetes since 6 yrs. and on treatment.
- Known case of TB since 3 months on ATT.
- Familial history of diabetes.
- Patient visited KIMS hospital for other complaints and diagnosed as right upper limb ischemia.

Relevant past interventions and their outcomes

- Patient was treated for diabetes and TB.
- Doppler study and CT Angiogram of right upper limb was done and diagnosed as upper limb ischemia and advised for Limbectomy.

Relevant physical examination (PE) and other significant clinical findings

On examination the right arm was bluish black, blackish discolouration of thumb and tenderness, pallor, hypothermia, absence of radial and brachial pulse.

Important information from the patient's history

After interrogation with the patient it is revealed that patient was suffering with diabetes since 6yrs and was on irregular medication and she was diagnosed with TB. 3 months ago and put on ATT. She also revealed history of diabetes in family. Patient got afraid to go for amputation by understanding the risk factors which are told earlier.

Diagnostic methods (such as PE, laboratory testing, imaging, surveys)

Physical examination: revealed absence of pulse at radial and brachial artery and by seeing the discolouration of limb with necrosis of thumb it is felt that there is a problem with circulation.

Laboratory investigations

Routine blood investigations to know the variations in blood Bio-Chemistry and Haemocystine levels was assessed.

Imaging

CT Angiogram of the right upper limb was done to know the level of Arterial block, Report says Focal luminal narrowness of 80% noted in the distal part of Right subclavian artery. Distal part of Right axillary, brachial, ulnar, and radial artery are not visualized.

Doppler of upper limb was done to understand the Arterial Flow.

- Hypo-echoic thrombus involving the right axillary, brachial, ulnar, and radial arteries with no flow;

- Highly resistant Monophasic flow in Right Subclavian artery.

Diagnostic challenges

Patient was from a poor background. In the initial stage patient was hesitant to consult the doctor. So the disease condition was worsened, and has become the challenge for diagnosis.

Diagnostic Reasoning

Patient was clearly diagnosed with Arterial occlusion by sophisticated techniques such as Doppler and CT Angio, where there was no room for differential diagnosis.

Prognostic characteristics

The prognosis was very poor as earlier consultants advised for immediate limbectomy and also by considering DM and TB the life risk was too high for medical and surgical intervention

Types of intervention

Medical and Surgical Intervention

Administration of intervention (medicine) undertaken in our hospital

- Jeerakadyarishta* 20ml TID (Baidhyanath)
- Abhayarishta* 20ml TID, (Baidhyanath)
- Arogyavardini Vati* 1 Tab TID, (Sri Sri Ayurveda Factory)
- Nithyananda Rasa* 1 Tab TID, (Dabur)
- Amlaparimala* 1 Tab TID B/F, (Pavamana Pharmacy)
- Mehantaka Vati* 1 Tab TID, (Sri Sri ayurveda factory)
- Capsule Cruel 1 BD, (Unjha ayurvedic pharmacy)
- Syrup Cardorium plus 10ml TID (Alakananda pharmacy)

Sthanika Abhyanga to right upper limb with *Jatyadi Taila* and *Swedana* done.

Antitubercular and Antidiabetic medicines were as earlier prescription is continued.

Surgical Intervention

As right thumb was totally necrosed before the visit, it was amputated. At bedside without anaesthesia.

Changes in Intervention

Initially 4-5 days leech therapy was done, but as there wasn't much flow of blood, leeches weren't actively sucking the blood, So it was discontinued.

Clinician and patient-assessed outcomes

Patient was admitted in SSCASRH on 2/3/16-23/4/16. Everyday follow-up was done for general condition of diabetic levels and patient was continuously monitored for wound healing of the thumb and re-establishment of the pulse and blood circulation.

Important follow-up diagnostic and other test results

After the treatment, once there was granulations seen on the thumb area and also pulse was observed Patient was referred to get Doppler study done on 5/5/2016

It is clear; that there was no Hemodynamic significant stenosis in the right upper limb of the Arterial system.

Intervention, Adherence and Tolerability

As this is a challenging case and patient completely willing on the consultant words and wants to take only ayurvedic treatment hence this case is critically analysed before we start our intervention and emphasis is given on the following factors. As this is a case of vyaadhi sankara and proven to be incurable medically by the contemporary science, based on the references we are focussed on

- Pittaja Prameha Pidika*
- Upadrava of Dushta Vrana*
- Utthana and Gambhira Vatarakta (Medhashrita)*

As the patient is known case of DM and the main cause of manifestation of the condition is *Prameha* leading to *Pittaja Prameha Pidika*, as Dalhana Acharya says involvement of *Vata*, *Pitta*, *Kapha* and *Shonita* along with *Meda* will manifest *Pittaja Prameha Pidika*,^[3] the current condition is with the complication of non-healing ulcer due to *Pittaja*

Prameha Pidika, a clear explanation like hardness, stiffness, immobile, due to necrosis of *Snayu* along with involvement of blood vessels. So this condition is fit for amputation. Based on the basic principle, complications to be treated first hence amputation of the necrosed thumb has been done. Rest are the management that is after correction of complication we planned line of treatment based on *Gambhira Vata Rakta*^[4] along with cleansing of ulcers followed by wound healing treatment, though the patient is lean as there is *Kapha Medaavarana*, hence we started with *Ruksha Chikitsa* (*Rakta Mokshana* and *Trivrit Triphala Adi*). After ensuring the release of *Avarna* which is noted during wound healing we started *Snigdha Chikitsa* (*Jeevaniya Chi.*) along with *Vata Pittolbana Chikitsa*. List of drug given above. During wound cleansing we found *Gomutra Arka* efficacious, along with this we advised cow's milk, oats, wheat, red rice, white sugar, snake gourd as diet for this patient (as advised by Acharya Sushruta) and we strictly advised not to consume black gram, horse gram, meat of animals from wet lands, over exercises and day sleep as per classics. After discharging repeat dopplar has been done and found that a patent capillary network was established hence we started *Rakta Prasadaka* and *Jeevaniya Dravya Chikitsa*. During the next follow up weight of the patient also improved the complexion of the limb enhanced with good movement of remaining fingers.

DISCUSSION

Discussion on strength and limitation in approach

Patient was poor and was strongly not willing to lose the hand but she was willing to face death by Septicaemia and she was having faith in Ayurvedic treatment. So by considering the request of the patient and by taking high risk consent, patient was taken for treatment.

Limitations

If necrosis is till knee joint in lower limb and similarly till elbow joint in upper limb and gangrenous, excessive pus discharge with involvement of facial region, fingers and *Arbuda* with muscle wastage will

lead to death as told by Sushruta Acharya as untreatable disease. As the above symptoms are not found and only necrosis is restricted only to thumb we took this case for Ayurvedic interventions.

Discussion of relevant medical literature

Relevant Medical science says that Ischemic Arterial Occlusions is a common complication in Diabetes; especially in the lower limb also same can happen in Smokers, Aneurism, Thrombo-embolism, Trauma etc., most commonly happens in the lower limb. In upper limb it is rare.

CONCLUSION

As the patient is lean with aggravated *Vata Pitta*, associated with disruption in *Raktha*, in this case due to increased *Vata* initially created dryness, scraping and *Kshalana Adi* changes in the vessels and simultaneously leading to constriction of vessels, as per medical literature DM is the risk factor in atherosclerosis case, so here patient is known case of DM because of it the vitiated *Vyana Vayu* is responsible for vaso constriction induced by disturbance in Ketakalamin metabolism and also hypo and hyper coagulation leads to thrombosis results in blockage in vessels and *Acharya Charaka* explains that if we neglect *Avarna Vata* leads to abscess. The same pathogenesis has occurred in this case initially as the patient is K/C of DM hence the abscess if not healed and lead to the complication of necrosis/gangrene as in initial stage there is *Vata* and *Rakta* leads to formation of vaso constriction hence initially *Vatarakta* has occurred in this case and due to inefficient treatment and the complications of *Pittaja Prameha Pidika* lead to *Gambhira Vata Rakta* stage that is from peripheral vascular disease to a stage of necrosis and gangrene as said classically in *Gambhira Vata Rakta*. So the patient expressed restricted movements, hardness, severe excruciating pain, necrosis, burning sensation and abscess formation with pus secretion. This *Gambhira Vata Rakta* later because of *Prameha* and ripening of abscess has turned into gangrene associated with paraesthesia numbness, tingling sensation, ulceration of the digits,

postural colour changes, cyanosis, gangrene along with ischemic neuropathy

According to *Acharyas* necrosis/gangrene commonly starts from foot which can be correlated to TAO or DVT but rarely starts from palm. In this case we have found the necrosis of palm, it is one of the rare condition and this may spread to other parts of the body.

The primary "Take away lesson" from the case report

Patient was advised for right upper limb amputation immediately and also because of active TB patient was explained about the high risk factors of various multispecialty hospitals. So such a complicated case can be handled by Ayurvedic methods of management by which one can prevent amputation of the limb and also achieved re-establishment of Arterial circulation.

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