

**AYURVEDIC MANAGEMENT OF DEEP VEIN THROMBOSIS: A CASE STUDY**Sachin Tike<sup>1</sup>, Surekha Khandekar<sup>2\*</sup> and Urvashi Belkhude<sup>3</sup><sup>1</sup>Assistant Professor and Incharge HOD, Dept. of Panchakarma, Govt. Ayurved College, Osmanabad, Maharashtra, India.<sup>2</sup>PG Scholar, Dept. of Dravyaguna Vigyan, Govt. Ayurved College, Osmanabad, Maharashtra, India.<sup>3</sup>PG Scholar, Dept. Of Rachana Sharir, Govt. Ayurved College, Osmanabad, Maharashtra, India.**\*Corresponding Author: Surekha Khandekar**

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**ABSTRACT**

Deep vein thrombosis or deep venous thrombosis (DVT) is a serious life threatening condition that may lead to sudden death. Deep vein thrombosis (DVT) is the third most common vascular disease, after ischemic heart disease (IHD) stroke and it is silent killer, it affects approximately 0.1% of persons per year. There is no satisfactory management of this disease is available in modern medical sciences. It involves intravenous Heparin, Warfarin and Venous Thrombectomy. A 32 years old male patient having right lower limb DVT was successfully treated with Ayurveda by Jalaukaavcharana (Leech therapy), Nitya Virechana, Raktamokshan (bloodletting), Guduchyadi basti (Enema of *Tinospora cordifolia* & other drugs). The patient was cured by this Ayurvedic regimen within one month. The Venous Doppler showed dramatic changes before and after the treatment. It proved that Ayurvedic management of Deep vein thrombosis is faster, cost effective and easily available for a common man.

**KEYWORDS:** DVT, Guduchyadi basti, Leech, Enema.**INTRODUCTION**

The term DVT medically refers to the formation of a blood clot within deep veins. The most common incidences occur in the legs. DVT is a major cause of morbidity & mortality all over the world. It is a silent killer.<sup>[1]</sup> The mechanisms underlying DVT, known as Virchow's triad, are venous stasis, hypercoagulability and endothelial injury.<sup>[2]</sup> Mainly two types of venous thrombosis are seen, superficial vein thrombosis (Thrombophlebitis) and deep vein thrombosis (Phlebothrombosis). It commonly occurs in low extremity & is associated with life threatening complication of Pulmonary embolism, referred together as venous thromboembolism (VTE).<sup>[3]</sup> The recurrent causes of DVT are major surgery, cancer, pregnancy, trauma, anti-phospholipids syndrome, central venous catheters, combined oral contraceptive, auto-immune diseases, Myocardial infarction, Nephrotic syndrome, Bechet's disease, Hip fracture, Abdominal or pelvic surgery, Congestive cardiac failure, inflammatory diseases, obesity, infections, HIV, polycythemia vera, Myofibrosis, hormonal replacement therapy, congenital factors (i.e. hereditary thrombophilia like Factor V Leiden, prothrombin deficiency) old age etc. In modern science anticoagulant treatment is stated for it.<sup>[4]</sup>

The most frequent site of thrombosis is calf. Venous thrombosis is often asymptomatic and is clinically manifested in 40 % or less cases. It mainly represent as

throbbing pain which is aggravated by muscular activity at the site of thrombus. Swelling is minimal at dependant part along with tenderness in the region of the vein. Treatment of DVT is mainly aimed at reduction the propagation of thrombus, to limit the damage to the venous valves and to reduce the probability for pulmonary embolism. In the established cases of DVT the treatment include bed rest, elevation of legs, elastic stockings and use of drugs like heparin, coumarin derivatives (warfarin), fibrinolytic drugs (streptokinase), Hemocheck and aspirin etc.<sup>[5]</sup>

In Ayurveda such type of disease is not mentioned, but causes, signs and symptoms of DVT resemble various conditions in Ayurveda. One of them is siragata vata in which there is pain in the region of sira along with narrowing or obstruction in the lumen of sira.<sup>[6]</sup> Another condition called raktaavritta vata has been described with symptoms of pricking pain, hyperaesthesia and numbness of the area affected.<sup>[7]</sup> As far as etiology of the disease is concerned many factors mentioned in nidana of vatarakta like achankramansheelinam (prolonged sedentary period), abhigata (trauma), sthulata (obesity) etc.<sup>[8]</sup> are also predisposing factors for DVT. In such condition of vata affecting the sira, Acharya Sushruta has exclusively mentioned the treatment regime which includes raktamokshana.<sup>[9]</sup> Acharya Vagbhatta has mentioned that leech can be applied in the area where blood is clotted.<sup>[10]</sup> Acharya Charka has enumerated

blood related disorders and their treatment by various type of bloodletting.<sup>[11]</sup> As these are basically raktapradoshajavikaras so raktamokshana was planned for this patient.

### CASE REPORT

A male patient 32 years old of vatapittaja prakruti, shopkeeper by profession permanent resident of Osmanabad district (Maharashtra), came to Panchkarma OPD of Govt. Ayurvedic College and hospital, Osmanabad (Maharashtra) with OPD no. 34772 and registered with IPD no 2625 on Sep 21<sup>st</sup> 2018. The patient was asymptomatic 6 months ago. Six month back he developed complaints of pain in right limb. He consulted a nearby physician but had no relief. . Later, his condition get worsened and he was not able to bear weight on the right leg and unable to walk for which he visited Govt. Ayurvedic college and hospital Osmanabad, India and he was suggested to go for colour Doppler study for both legs. The colour Doppler suggestive of Ac. Thrombosis in right femoral vein, deep femoral vein and popliteal veins, anterior or posterior tibial veins (Sep 25<sup>th</sup> 2018). Tab. Acitrom 2 mg 1BD, Tab. Aspirin 150 mg 1BD, Tab. Emanzen-D-50 mg 1BD, for 20 days was given to patient but he did not get any relief with this treatment. Hence, he approached to GACH.

He come to us with complaints of Pain in Right leg, Numbness in Right legs, not able to walk properly, slight swelling over the right lower leg all complaints present since 6 month. According to patient statement, it was found that pain was constant, severe throbbing in nature, not radiated to any other part, aggravated on standing for long time and relieved by elevation of Right leg. He had no history of Hypertension, diabetes mellitus, trauma, previous surgery. On examination, in upper thigh and calf region tenderness was present, in Right lower leg redness and oedema was present. Homan's Sign (dorsiflexion of foot may cause pain in calf region) was positive. Moses' sign (when the calf muscle is compressed forwards against the tibia, but not when the calf muscle is compressed from side to side) was positive. All the laboratory investigations were normal excluding Prothrombin time-20 sec, Prothrombin Ratio-1.08, I.N.R.-1.32. In Urine examination, albumin was traceable. The patient was treated with both internal and external medications for four weeks. The details of treatment are given below.

#### Internal medications was

Nityananda rasa 150mg 1Tab BD  
 · Ekangaveer Rasa 150 mg 1 Tab. BD,  
 Kaishor Guggul 1Tab BD  
 Aarogyavarthini Vati 1Tab BD (Before lunch)  
 Punarnava Aasav 20 ml BD  
 Sarivadi Aasav 20 ml BD

#### Shodhan

Nitya Virechan (Purgatives) – Nimba amrutadi castor oil.

Basti (Enema for patient) – Guduchyadi niruha basti.  
 Jaloukavcharana (Leech therapy) - started on Sep 26th 2018 and done twice a week.

#### External medications

Abhyanga (Massage) -Guduchyadi Tail.  
 Nadi Swedana -Dashmuladi Kawath.

Total treatment period was four weeks. On the basis of visual analogue scale (VAS), patient was assessed weekly. Pain gradation was as follow.<sup>[11]</sup>

0-1	No Pain
2-3	Mild
4-5	Uncomfortable
6-7	Distressing
8-9	Intense
10	Worst Possible

As we observed in VAS (visual analogue scale), before the treatment of patient the pain grade was 8. Later than 7 days of treatment pain grade comes down 6, further on the completion of 2nd week, 3rd week and 4th week pain grade was 5,3 and 1 respectively. Before treatment patient was having swelling on right leg which later completely subsided in two weeks. Gradual improvement in walking distance of patient was i.e. initially he was not able to walk, after the treatment of one week he was able to walk off the distance 25 meters and later after the treatment second, third week and four weeks he was able to walk up to the distance 70 meters, 90 meters, 200 meters respectively. Patient was suggested to continue treatment and advise to attend the OPD after one month. Patient was observed that he has no problem in walking up to any extent.

#### EXAMINATION

##### Systemic examinations

Pulse- 72 beats/ minute, normal and equal  
 Blood pressure- 120/80 mm of Hg  
 Temperature – 98<sup>0</sup> F  
 Respiratory rate –21/min  
 CVS- S1-S2 heard normal, no added sounds.  
 CNS- Conscious and well oriented.  
 RS- Air entry bilateral equal  
 P/A- soft, non-tender, no hepato spleno-megaly seen.  
 No lymphodeopathy seen  
 External genitalia- normal

##### Local examination

Mild local temperature increased.  
 Moderate Oedema over right limb (leg >thigh) - non-pitting type  
 No Erythema/ulcers/ blisters present.  
 Dorsalis pedis and Posterior tibialis pulses - bilaterally equal and normal  
 Homans'' sign- positive  
 Moses'' sign – positive

##### Blood investigations

Hb- 10 mg/dl

WBC count- 8000/cumm  
 Differential count: Neutrophils- 60 Eosinophils- 1  
 Lymphocytes- 28 Monocytes- 3  
 Absolute eosinophils count – 84.0/cumm  
 Platelet count- 387000/cumm  
 RBC count-2.99 HCT-32.2%  
 MCV- 78.70fL MCH- 24.81 pg MCHC- 31.53 g/dl g/dl  
 BSL- (Random) -125mg %  
 Bleeding Time – 1minute 30seconds Clotting time-  
 3minutes  
 HIV antibodies1&2-Non- reactive HBsAg- Non- reactive

#### Urine examination

Routine A.B- nil Sugar- nil  
 Microscopic Pus cells- nil RBCs- nil Casts – nil  
 Crystals- nil

#### Venous Doppler study of right limb (Sep 25<sup>th</sup> 2018)

1. IVC, right common iliac vein right external iliac,  
 common femoral, proximal ½ of superficial femoral,

#### 3. Guduchyadi niruha basti (Enema for patient)<sup>[14, 15]</sup>

Anuvasan basti (AB)- amrutadi castor oil

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
AB	N	AB	N	AB	N	AB	N	AB	AB

#### Niruha basti (N)-Guduchyadi niruha basti

Ingredients of decoction	Quantity
Sneha (Nimba oil)	1o ml
Saindhav (Rock salt)	5 gm
Madhu (Honey)	20 ml
Kalka- Shatpushpa (Anthum sowa)	2.5 gm
Kashay (Decoction) of Varun (Crataeva nurvala)+ Rasna (Pluchea lanceolata)+Sariva (Hemidesmus indicus)+Musta (Cyperus rotundus)+Patol (+)Pimpali (Trichosanthes dioica)+Guduchi (Tinospora cordifolia)	5gm
Gomutra (Cow's Urine)	80ml

#### OBSERVATION

Signs and symptoms	Before treatment	Nitya virechana	Basti karma & Jaloukavcharan
Pain	++++	++	-
Edema	Mild	-	-

#### RESULT

After the completion of therapy patient was in supervision up to three months without intervention follow up and it was observed that the patient is symptomless and cured.

#### DISCUSSION

Blood clot (thrombus) within a deep vein is a cardinal sign of DVT. In Ayurveda DVT may be co-related with Siraj Granthi or Siraj Vata. Vatadushti and Raktadushti are vitally found in the manifestation of Siraj Granthi. Charak had depicted Virechana (Purgatives), Upavasa (Fasting) and Raktastravan (bloodletting) as the management tool in Rakta Dushtijanya Vikar. He further quoted that Sira is the Upadhatu of Rakta. Rakta and

show normal flow plasticity, compressibility and no response to augmentation.

2. Echogenic thrombus is noted in distal ½ of superficial femoral, deep femoral and popliteal veins, anterior or posterior tibial veins.

#### TREATMENT (IN DETAIL ELABORATION OF TREATMENT)

##### 1. Virechan karma Nitya (Purgative)<sup>[12]</sup>

Nimba amrutadi castor oil 50 ml (NACL oil)	Vega		
	Day 1	Day 2	Day 3
	9	6	10

##### 2. Jaloukavcharana (Leech therapy)<sup>[13]</sup>

3 settings in 15 days.

Pitta are having Aashrayashri Sambandha. Virechana and Jaloukavcharan are the choice of treatment for Pitta-Rakta Dushtijanya Vyadhi. These Shodhan Karma not only cures the diseases but also helps in restricting its progression and recurrences.

The principle of Ayurveda is to maintain the health of healthy individual and treat the patient.<sup>[12]</sup> Basically the Ayurveda is the complete science of life, which has various drugs and techniques for treatment of mankind. Raktamokshana (bloodletting) is one of the biggest innovations in the field of Ayurveda, which also includes the Leech therapy in the form of ashstrakrita raktamokshana.<sup>[16]</sup> It is safe, painless and highly effective. Once the leech's bites a target, the saliva enters

the puncture site along with enzymes and compounds responsible for all the positive effects. Because of anticoagulation agents the blood becomes thinner, allowing it to flow freely through the vessels. The anti-clotting agents also dissolve clots found in the vessels, eliminating the risk of them travelling to the other parts of the body and blocking an artery or vein. The vasodilating agents help widen the vessel walls by dilating them and this causes the blood to flow unobstructed too. Patients who suffer from pain and inflammation will feel relief from the anti-inflammatory and anaesthetic effect of the leech's saliva.

Basti is described as the best line of treatment to cure the imbalanced of the Vata Dosha. Simultaneously it is also true this procedure is equally effective in rectifying the abnormal accumulation of the Pitta as well as Kapha Dosha. Vata Dosha alone is capable of mobilizing pathological accumulation of the dosha from the periphery into the Koshtha, where from it is eliminated from the body.

Guduchi has Tikta Kashaya Rasa, Madhura Vipaka, Ushna Virya and Tridosahara with Raktashodhak (blood purifier) properties. The Chloroform and Benzene extracts of Guduchi found to possess significant antibacterial activity and blood purifying action. All the drug used in the Guduchyadi niruha basti shows the anti-inflammatory, wound healing activities also.

#### Anti-coagulating effect of leeches

The leech's saliva contains enzymes and compounds that act as anticoagulating agent. The most prominent of these anticoagulation agents is hirudin which binds itself to thrombins, thus effectively inhibiting coagulation of the blood. Another compound that prevents coagulation is calin. This on the other hand work as an anticoagulant by prohibiting the von Willebrand factor to bind itself to collagen, and it is also an effective inhibitor of platelet aggregation caused by collagen. The saliva of leech also contains factor Xa inhibitor which also block the action of the coagulation factor Xa.<sup>[17]</sup>

#### Clot dissolving effect of leeches

The action of destabilase is the break up any fibrins that have formed. It also has a thrombolytic effect, which can also dissolve clots of blood that have formed.

#### Anti-inflammatory effect of leech

Bdellinsin; a compound in the leech's saliva; that acts as anti-inflammatory agent by inhibiting Trypsin as well as plasmin. It also inhibits the action of acrosin. Another anti-inflammatory agent is the eglins.<sup>[18]</sup>

#### Vasodilating effects of leech

There are 3 compounds in the leech's saliva that act as a vasodilator agent, and they are the histamine-like substances, the acetylcholine and the carboxy-peptidase inhibitors. All these act to widen the vessels, thus, causing flow of blood of the site.

#### Bacteriostatic and Anaesthetic effect of leech

The saliva of leeches also contains anaesthetic substances which relieve pain on the site and also bacteria inhibiting substances which inhibit the growth of bacteria.<sup>[19]</sup> there were no adverse events throughout the management. The mode of treatment was found to be cost effective, safe and easy to implement. Jalaukaavacharan (hirudotherapy) is safe and effective method in management of D.V.T. than modern treatments.<sup>[20]</sup>

#### CONCLUSION

In present study the Jaloukavcharan (leech application), Virechana (Purgative), Basti(Enema), raktamokshan (bloodletting) applied in case of DVT is found to be effective. Leech therapy is beneficial in reduction of pain, swelling, tenderness in the patient of DVT. With the help of leech therapy we can improve the quality of life of the DVT patients. We can avoid the hazards of prolong use of heparin like drugs by using leech therapy. In addition to these benefits, this method is cost effective, less time consuming. In present case study Nitya Virechana Karma, Jaloukavcharana and Basti Karma shows significant effect. There is no any adverse reaction found with these drugs. With these treatment, the patient of DVT shows significant results.

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