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Leech therapy in varicose vein: A case report

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Abstract

Varicose veins (DAWALI) are common worldwide affecting all ages being present in about 20% of people aged 20 and women are more commonly affected. This disease is described as dilated, elongated, tortuous and sacculated veins of lower limb. Varicose veins can be managed by various conservative and surgical treatment such as injection sclerotherapy, foam sclerotherapy, radio Frequency ablation and operative procedures including ligation, ligation and stripping and phlebectomy but all these have their own side effects. The objective of study is to evaluate the effect of leeching for varicose vein on a 55 years old male patient visited surgical OPD, NIUM with the complaints of Visible dilated veins in right lower limb and mild dull aching pain in right lower limb, he was admitted for 10 days and treated with leech therapy at different sitting. The sign and symptom reduced to 90% and patient got great relief.

Keywords: Varicose vein (*Dawali*), leech therapy (*Irsal-e-alaq*), sclerotherapy

Introduction

A male patient of 55-year age attended surgical OPD, NIUM Hospital having Chief complaints of Visible superficial dilated vein on calf region of right lower leg from 15 years and dull aching pain in right lower foot from last 3 months. He was financier executive (field worker) by profession.

Patient accidentally noticed superficial visible dilated veins in his right lower leg. These veins become prominent on prolonged standing. Initially patient neglected these dilated veins but due to appearance of pain from last 3 months he became conscious about the condition. Pain was dull aching in character, aggravate on prolonged standing. Pain relieved on having rest. Hence patient came to NIUM, hospital and admitted under Dr. Shakeel Ansari. After proper examination, following findings are seen:

On inspection

- Minimal dilated superficial vein on calf region just below the popliteal fossa of right lower leg. (fig. No- 1)
- No dilated great saphenous and short saphenous veins.
- Only hyperpigmentation seen on bilateral foot up to ankle joint.

On palpation

- Local temperature- not raised.
- Brodie tredelenburg test- Negative
- Perthes test- no DVT and saphenofemoral incompetency.
- Homans sign- negative
- Moses sign-negative
- Multiple tornique test- negative

Peripheral pulses- well appreciated.

Investigation

- CBC: HB-15.3%
- BT- 2 min, CT-4 min.
- HIV/HBsAg- N.R/Neg.
- RBS-108mg/dl

Treatment given to the patient

Leech therapy given to patient at different sitting as follows

- 1st sitting carried out and 3 leeches were applied on right lower leg.

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- 2nd sitting done and 3 leeches applied.
- 3rd sitting done and 3 leeches applied.
- 4th sitting done and 5 leeches applied (Fig. No-2).



Fig 1: Before leech therapy



Fig 2: During leech therapy

Discussion

Varicose veins (*Dawali*) are dilated, tortuous and elongated superficial veins of lower limb [1, 2, 3, 4, 5]. Varicosity is actually the penalty of erect posture of human beings, blood has to flow from lower limbs to heart against gravity^{1,5}. The origin of word varicose derived from greek “grape like”. It was probably first used as a medical description by Hippocrates in 460 BC [13].

Varicose veins are common worldwide, being present in about 20% of people aged 20, increasing to 80% at 60 years.³ Varicose veins are 10 times more common in female probably due to high level of progesterone, which causes changes in collagen structure, and also causes dilatation & relaxation of smooth muscles of veins [2, 3, 5].

Under normal condition, blood passes through superficial venous system to deep veins of lower limb, from where blood reaches to heart through calf muscle pump, competent valve of veins of lower limb which maintain unidirectional blood flow, negative intrathoracic pressure, venae comitantes and vis a tergo or pumping action of heart [1, 3, 4, 5]. Thus various factors play role in development of varicosity of veins such as morphological factor, genetic inheritance of FOXC2 gene, congenital defect in valves of vein, and some secondary causes such as DVT, ascites, pregnancy, occupations which demands prolonged standing, pelvic tumour and all those condition responsible for raised intra-abdominal pressure [1, 2, 3, 4, 5].

There are various treatment modalities for varicose veins such as conservative management by application of crepe

bandage and exercise, injection sclerotherapy, foam sclerotherapy, radio frequency ablation and operative procedures including sapheno femoral and sapheno popliteal ligation, ligation and stripping and phlebectomy [1, 2, 3, 4, 5].

But all these have their own complications, so in order to provide greater relief with minimal or no side effects/ complications, cost effective and cheap treatment, varicose veins are treated with leech therapy. Leech therapy has been mentioned very beneficial in the management of varicose vein in various unani literature.

The treatment of disease conditions with medicinal leeches is termed as Taliq in unani literature and Hirudotherapy in modern medicine. The therapeutic effect of taliq is not only due to sucking out of morbid humour from the affected part of body but also due to its saliva which contain many biologically active substances like hirudin, hyaluronidase, destabilase, hirustasin, bdellins, calin, decrosin, eglin, trypase inhibitor, factor Xa inhibitor, complement inhibitor, carboxypeptidase A inhibitor, histamine like substances, acetylcholine, pseudo hirudin, apyrase, kininase, collagenase, leech prostanoids, protease, lipolytic enzyme, triglyceridase, lipase and esterase, anti-elastase, inhibitors of kallikrein of blood plasma etc. These substances are responsible for anticoagulant, anti-inflammatory, analgesic, anti-ischaemic, anti-atherosclerotic, thrombolytic, immune stimulant, antibiotic, hypotensive, internal decongestant and local anti-oedematous effects [6, 7, 9].

Hirudin: A potent anticoagulant it inhibits thrombin.

Bdellin: A protease inhibitor has anti-inflammatory effect and inhibit trypsin, plasmin, and acrocin.

Calin: Inhibits blood coagulation by blocking the binding of von willebrand factor to collagen thus inhibit platelet aggregation.

Hyaluronidase: it facilitates the penetration power and thus increases local blood circulation.⁶

Decrocin and Destabilase: It dissolves fibrin and has thrombolytic effect [6, 11].

Factor XA Inhibitor: blocks the action of the coagulation factor Xa [10].

In case of venous stasis pain occurs due to presence of algogenic metabolites at the site of microcirculatory units to which endothelial cells are particularly sensitive as well as due to concept of pain receptors present at the site of microcirculatory units [9]. Three compounds that are present in saliva of leech acts as a vasodilator agent; which are histamin like substances, the acetylcholine and the carboxypeptidase, an inhibitor, widen the vessels and increases the flow of blood to the bite site [11]. Anticoagulant, thrombolytic and vasodilating substances present causes hypovolemic haemodilution and prolong bleeding and thus reduces pressure of blood and also remove metabolites at the site of microcirculatory units; as well as anaesthetic substances present in leech saliva relieves pain on the site [11, 12].

Conclusion

It was found that the sign and symptoms of the patient

greatly relieved to 90%. Because of the presence of anticoagulant, thrombolytic, vasodilating, anti-inflammatory, blood thinning, lymph flow accelerating and venous pressure reducing substances in the saliva of leech varicosity of leg cures. Thus, leech therapy proves to be efficient, cost effective, safe, time- saving, widely acceptable, promising and highly significant treatment with positive results in the varicose vein.

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