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Management of varicose ulcer by the intervention of Ta'Līq Al-'Alaq (leech therapy): A case study

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Abstract

Dilated, twisted superficial veins known as varicose veins are the result of abnormal venous valve structure and function, which leads to pathological circulation. One of the medical therapies that have been used extensively from extreme antiquity is Irsa'al-i-Alaq, or leech therapy. Through their saliva, leeches extract blood from their host and emit chemicals that cause discomfort and thin blood. Because leech saliva includes histamine and hirudin, which have been found to have an anticoagulant effect, it improves microcirculation in conditions like reduced edema and varicose veins. The purpose of this case study is to assess whether leech therapy may be used as a substitute or adjuvant treatment for varicose ulcers. It is also necessary to produce clinical evidence to support the assertions made by Unani physicians on the safety and efficacy of this therapy, which are documented in Unani literature. In this case study of five leeches were applied on right lower leg. Total twelve sittings, one sitting on every week for three months was done. Considerable improvement both in disease process and quality of life was achieved. The use of leech therapy greatly reduced the patient's symptoms and indicators. In cases of varicose ulcers, leech therapy is a proven, efficient, cost-effective, and agreeable treatment.

Keywords: Irsa'al-i-Alaq, varicose ulcer, leech therapy, regimental management

1. Introduction

Varicose veins are a common sign of chronic venous disease. They are defined as dilated, tortuous superficial veins that arise from high intraluminal pressure, intrinsic vein wall weakness, malfunctioning saphenous vein valves, or, less frequently, arteriovenous fistulas causing pathological circulation [1-3]. Lower extremity veins, spermatic veins, oesophageal veins, haemorrhoidal veins etc. are among the veins that exhibit a propensity towards varicosity [2]. The prevalence of varicose veins is 35%. The prevalence of chronic venous insufficiency (CVI) is 8%, severe varicose veins is 10%, and ulcers is 2% [3-4] with a higher incidence in women and older adults. They commonly affect individuals aged 40-80 years old and present with signs and symptoms of chronic venous insufficiency, including venous ulceration [5-6]. Patho-physiological factors also contribute to varicose veins; they include venous hypertension, valve dysfunction, structural changes in the vein, inflammation, extreme stress, obstruction of the venous outflow, and calf pump failure. The clinical features include dragging pain, postural discomfort, heaviness in the legs, oedema feet, cramps that typically occur late at night, itching (a characteristic of CVI), discoloration/ulceration of the feet, and painful walking [4]. The well-recognized CEAP classification, which was initially put forth by the American Venous Forum in 1993, describes clinically varicose veins. It centred on the clinical symptoms (C), etiological factor (E), anatomical distribution of the disease (A), patho-physiological aspects (P) [7].

Varicose vein illness is described in Unani medicine as a condition where blood from Sawdāwī Mādda (atrabilious matter), Ghayr Sawdāwī Mādda, or Balgham-i-Ghalīz (viscous phlegm) accumulates in the veins of the legs and feet and become dilated [8-10]. Hippocrates also frequently discusses lower limb venous sickness in his writings [2]. Distinguished Unani physicians Rāzī, Majūsī, Zahrāwī and Ibn Sīnā have documented and practiced the use of non-poisonous (or medicinal) leeches in treating a variety of illnesses, including as psoriasis, dermatitis, and joint disorders [8-9].

This case study is aimed in order to assess whether leech therapy can be utilized as a substitute or adjuvant treatment for varicose ulcers, clinical data must be produced in order to support the assertions made by Unani physicians regarding the safety and efficacy of this therapy in Unani literature.

Table 1: CEAP classification, clinical grading of varicose veins [7]

C0	No visible or palpable signs of venous disease
C1	Telangiectasies or reticular veins
C2	Varicose veins; distinguished from reticular veins by a diameter of 3 mm or more
C3	Edema
C4	Changes in skin and subcutaneous tissue secondary to CVD
C4a	Pigmentation or eczema
C4b	Lipodermatosclerosis or strophic blanche
C5	Healed venous ulcer
C6	Active Venous Ulcer

2. Material method

2.1 Selection of Case: For this study, A diagnosed patient with varicose ulcer taken from the OPD of Ilaj Bit Tadbeer AKTC hospital.

2.2 Presentation of Case: The sufferer, a 38-year-old man named Gyan Prakash visited our outpatient department (OPD) at Ajmal Khan Tibbiya College and Hospital, Faculty of Unani Medicine, Aligarh University in January 2023. He had a 13-year history of varicose veins. The patient reported experiencing pain and skin discoloration across the afflicted area due to an ulcer in his right lower leg. The patient claims that a minor wound that initially affected his right lower leg eventually expanded across it. First appearing crimson, the wound later turns into a crust that is almost black. The pain was moderate, localized and non-radiating in nature. In addition to using homeopathic medication, he had previously been treating the illness with laser treatment at a multi-care facility and he also taken homeopathy medicine for the same but didn't get relieved by any treatment. There was a positive family history of his elder brother. There was no history of smoking / alcohol / drug / tobacco chewing with no history of fever. The patient is a teacher in government school and taken classes mostly in standing position.

2.3 General examination: No pallor, icterus, cyanosis, or clubbing was observed, and overall condition was good. All vital signs were within normal ranges, with no anomalies found in the neurological, gastrointestinal, respiratory, urogenital, or cardiovascular systems.

In local examination on inspection the skin was reddish black with scaling, there is wasting of calf muscle and the tone of the leg was also noted. There was no other deformity found.

2.4 Informed consent: The patient was willing to participate in this trial, and informed consent was obtained prior to the start of intervention.

2.5 Investigation

1. CBC-Hb: 14.6 gm%, ESR:
2. Blood Sugar (Random)-84 mg %
3. Bleeding time-1 Min. 35 Seconds
4. Clotting time-6 Min. 20 Seconds
5. HBsAg-Non-Reactive
6. HIV-Non-Reactive
7. LFT, RFT are also within normal limits

2.6 Intervention: His vitals were stable, all routine blood test were performed prior to starting leech therapy on the patient and found to be within normal ranges for the following tests CBC, Blood Sugar (fasting and post prandial), RFT, Bleeding and Clotting time and viral markers (HIV I and II, HBsAg). Following the evaluation, the patients left lower leg was washed with distilled water and five leeches (*Hirudo*

medicinalis) were applied around the ulcer for 45 minutes. The patient was kept under observation for any discomfort or allergic response during this time. When leech auto detached, a small amount of blood was permitted to leak from the leech's attachment site. As soon as blood was sucked out, the site was immediately squeezed with a gauzed pad and a tight cotton bandage was placed. This strategy was used at every sitting. One session of leech therapy (Irsal-e-Alaqa) was given once a week for roughly four months. The patient was followed up for another two months and was told that if he suffered any recurrence of symptoms in the future, he should report to the hospital right away, but no signs or symptoms resurfaced. Following each procedure, the patients underwent further sessions of leech therapy, and the results were fairly excellent.

2.7 Duration of Study: 3 months.

2.8 Assessment: Ulcer was assessed on Baseline, 6 weeks and 12 weeks. On the basis of pain (VAS Scoring), size of ulcer (in a square centimeter), color & area of pigmentation and limb girth (calf muscle).

3. Results

The patient's symptoms and signs significantly improved with leech therapy as shown by the pictographic presentation in Figure 1-3 and Table-2. Other signs and symptoms like discoloration and swelling over the left lower leg also decrease with sittings of leech therapy.



Fig 1: Before Treatment



Fig 2: During Treatment (0 Day)



Fig 3: During Treatment (1.5 months)



Fig 4: After Treatment (3 months)

Table 2: Changes observed during study

Assessment Parameters	Baseline	6 weeks	12 weeks
Pain	6	4	3
Size of Ulcer	24 sq cm	17 sq cm	12 sq cm
Color & Area of pigmentation	Yellowish scaly	Pinkish scaly	Wheatish
Limb girth (calf muscle)	24 cm	27 cm	29 cm

4. Discussion

This case report details a 38-year-old male patient who underwent a 12-week study and had a varicose ulcer in his right lower leg. Leech therapy was administered locally to the patient. Within the conventional medical system, various medications and surgery can somewhat, but not totally, alleviate symptoms. Therefore, it is imperative to discover a medication that may alleviate symptoms permanently and has no adverse effects. Leeches can be rather helpful in certain situations because to advancements in the medical sciences. Hirudin is thought to be preferable to heparin because it can be given to patients safely. Research on leech saliva has revealed the presence of a variety of bioactive peptides involving anti-thrombin (hirudin, bufuridin), anti-platelet (calin, saratin), factor Xa inhibitor (lefaxin), anti-bacterial (theromacin, therozymin), and vasodilator (histamine-like substance, acetylcholine) [9-10]. Expulsion of impure blood occurs after leech treatment, which eliminates undesired metabolites and localized vitiated toxins. In a similar vein, it increases the flow of new blood and encourages the healing of wounds by forming newer tissues. Skin pigmentation is addressed and venous valvular dysfunction is also relieved as a result of enhanced blood circulation. Consequently, it promotes wound healing by interrupting the etiology of "varicosity" at the cellular level. Saliva from medicinal leeches (*Hirudo Medicinals*) includes hirudin, which binds to thrombin to prevent blood coagulation. The effects of medicinal leech treatment include varicose ulcer healing, edema reversal, venous decongestion, and hyperpigmentation [10-12].

While there are a number of therapies available to help individuals with varicose ulcers, there are no effective methods for curing the issue. Positively, there is evidence that hirudo-therapy, often known as leech therapy, improves ulcer symptoms. Leech saliva contains a variety of therapeutic peptides that promote healing [13-14]. More than a hundred bioactive ingredients are included in it, including bacteriostatics, analgesics, vasodilators, anti-inflammatory, anti-edematous, and anticoagulants. People with varicose ulcers might be able to enjoy restricted but better circumstances because to their functional qualities. Although there hasn't been much study done on medical leeches, leeches may potentially be very useful in veterinary and arthritic treatments; hirudo-therapy has a bright future [15-16].

5. Conclusion

Although mortality due to varicose veins is very minimal but morbidity causes much misery and suffering as it occurs in prime time of life. As can be expected there is enormous loss of man power and productivity but interestingly this disease has an effective treatment. Leech therapy proves to be effective, time saving, affordable and acceptable treatment in varicose ulcer. We can roughly conclude that Unani system of medicine can give a ray of hope in the treatment of varicose veins and varicose ulcer.

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