



CASE REPORT

Leech Therapy in A Case with Arterial Embolism

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Received: 24.08.2020

Accepted: 12.10.2020

Abstract

Although there have been significant advances in the treatment of cardiovascular diseases, acute peripheral arterial blockage is still important due to limb-threatening ischemia and loss of function it causes in vital organs. Leeches have been used in the treatment of certain diseases since ancient times. US Food and Drug Administration (FDA) permitted the sale of leeches in United States of America and their use for general purposes, plastic surgery and micro-surgery in 2004. There are studies in the literature reporting leech therapy administration in post-surgical vascular permeability complications. In conclusion, hirudotherapy can be used as an alternative treatment in addition to medical treatment of arterial embolism. This article studied a case that had peripheral arterial embolism and recovered through leech treatment.

Keywords: Arterial Embolism, Hirudotherapy, Amputation

INTRODUCTION

Although there have been significant advances in the treatment of cardiovascular diseases, acute peripheral arterial blockage is still important due to limb-threatening ischemia and loss of function it causes in vital organs. The treatment can end up in the amputation of organs¹. Leeches have been used in the treatment of certain diseases since ancient times, where *Hirudo medicinalis* and *Hirudo verbana* species have been mostly used in various treatments. The saliva of leeches contains over 100 different bioactive substances. Some of these secretions have been reported to have vasodilator, bacteriostatic, analgesic, anti-inflammatory and anticoagulant properties. In addition, various sources have stated that they have edema resolving effects and some other properties such as preventing microcirculation disorders, correcting damaged vascular permeability of organs and tissues and hypoxia, lowering blood pressure, increasing immunity and relieving pain. FDA permitted the sale of leeches in US and their use for general purposes, plastic surgery and micro-surgery in 2004. The use of hirudotherapy as a supportive treatment in modern medical practices is highly important^{2,3}. This article studies a case in

which leeches were used in the treatment of a patient with a diagnosis of Peripheral Arterial Embolism.

CASE

A 74-year-old male patient who had a history of coronary artery disease and diabetes mellitus. He had been visiting the cardiology service due to a chest pain and accompanying sweating complaints. The laboratory findings of the patient were as follows: hemoglobin, 13.9 g/dl; WBC, 16200/mm³; C- Reactive Protein (CRP), 168 mg/L; erythrocyte sedimentation rate (ESR), 44mm/s; INR, 1.21. After the patient had coronary angiography, pain and redness developed starting at the second phalanx of the third finger on the right hand. Upon thinking that embolism increased, the case was consulted with cardiovascular surgery. The cardiovascular surgery reported that the flow in this area decreased as a result of the doppler examination. The case was also consulted with Infectious Diseases department due to high ESR and CRP. The high Sedim and CRP was thought to stem from the necrotic tissue in the finger as no agents of infection could be found. Upon this development, amputation decision was given as a

result of consultation with Orthopedics and Cardiovascular Surgery. The middle finger distal and middle phalanx were amputated. Following amputation, necrotic area and pain increased in the proximal phalanx of the same finger and hand as well. Amputation was considered at the proximal phalanx, too (Figure 1).



Figure 1. Limb before leech therapy

The patient refused this treatment, so the Family Medicine Leech Therapy Clinic was asked for consultation. So he was administered leech treatment for two sessions with two days interval. After the leech treatment, the existing redness, bruising and pain of the patient decreased on the first day of the treatment (Figure 2).

He had follow-ups for a week and the wound was controlled. The patient, who was also given anticoagulant therapy, had leak-like bleeding for 5 days in the area where leech treatment was administered. The laboratory findings of the patient

began to improve after the treatment. The laboratory findings were as follows: hemoglobin, 12.3 g/dl; WBC, 14700/ mm³; CRP, 51 mg/L; ESR, 24mm/s; INR, 1.22. The complaints of the patient were completely resolved in the follow-ups.



Figure 2. Limb after leech therapy

DISCUSSION

This article studied a case that had peripheral arterial embolism and recovered through leech treatment. There are studies in the literature reporting leech therapy administration in post-surgical vascular permeability complications^{4,6}. Significant results have been obtained from the assessment of patients having leech treatment in these studies³⁻⁵. However, comprehensive studies are needed in this field. In conclusion, hirudotherapy can be used as an alternative treatment in addition to medical treatment of arterial embolism.

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