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The beneficial role of Hirudotherapy for different chronic venous diseases



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Chronic venous diseases as chronic venous insufficiency, thrombophlebitis, phlebothrombosis and post-thrombotic syndrome are some of the most traditional indications for hirudotherapy.



Introduction

Compared to conventional pharmacological and interventional treatment methods, leech therapy has a very broad range of uses in various fields of medicine. To understand why this is so, one must analyze the potential and known mechanisms of leech therapy. Before the arrival of heparin, leech therapy has been an established method for acute treatment of deep leg vein thrombosis and superficial thrombophlebitis. In our study we present the results of our patients' vascular care standard therapeutic procedures with Hirudotherapy. Patients were divided into five groups (CVI II-IV CEAP; CVI VI CEAP, Post-thrombotic syndrome, Acute thrombophlebitis, VSM, VSP; Acute phlebothrombosis VP, VTP, VFi). Preliminary results show the benefit of combination therapy - improvement of subjective symptoms and objective criteria. The authors, based on literature data and their experience recommend a combined therapy in indicated cases of patients with chronic venous diseases.

Diagnosis

a) Chronic venous insufficiency (CVI II-IV, VI stage CEAP classification)

CEAP classification (C – clinical, E – etiological, A – anatomical, P – pathophysiological classification)

- disrupted mechanism of venous blood return from leg to the heart → increase of blood pressure in the veins
- symptoms: swelling, itching, foot pain, spasm, exudation

b) Post-thrombotic syndrome

- may occur as a long-term complication of deep vein thrombosis
- symptoms: swelling, itching, pain, reddish or brownish skin, ulceration
- cause: is a form of chronic venous insufficiency - insufficient drainage of blood deep venous system caused by deficient permeability system, reduced speed of blood in the veins, injury to vein wall

c) Thrombophlebitis

- closing of a blood vessel (superficial vein – varicose vein) by a blood clot (thrombus)
- symptoms: pain in the part of the body affected, swelling of the ankle or foot, reddish skin
- cause: increased predisposition for blood clotting.

d) Phlebothrombosis

- closing of a blood vessel (deep vein) by a blood clot (thrombus)
- symptoms: pain and swelling foot or calf
- cause: defect of deep vein, predisposition for blood clotting



Diagnosis	Number of Results patients	Complications
CVI II-IV CEAP	10	7x improvement of symptoms CVI (pain, spasm), swelling – 2 cm 1x erythema, increased temperatures
CVI VI CEAP	4	Healing in 2 months
Post-thrombotic syndrome	6	Clinical improvement (swelling, symptoms CVI) 1 x increased temperature, bleeding
Acute thrombophlebitis, VSM (<i>vena saphena magna</i>) VSP (<i>vena saphena parva</i>)	5	Clinical improvement in 7 days, recanalisation after 4 weeks (CCDS = Color-Coded Duplex Sonography)
Acute phlebothrombosis, VP (<i>vena porte</i>), VTP (<i>vena tibialis posterior</i>), VFi (<i>vena fibularis</i>)	3	Recanalisation after 4 weeks (CCDS)

Results

Post-thrombotic syndrome



Thrombophlebitis



Complications

- excessive bleeding
- scars
- infection caused by bacteria *Aeromonas hydrophilla*
- allergic reactions, itching



Ultrasonography - Doppler

Diagnosis: thrombophlebitis of distal v.poplitea and medial branch of calf vein, absence of recanalisation.

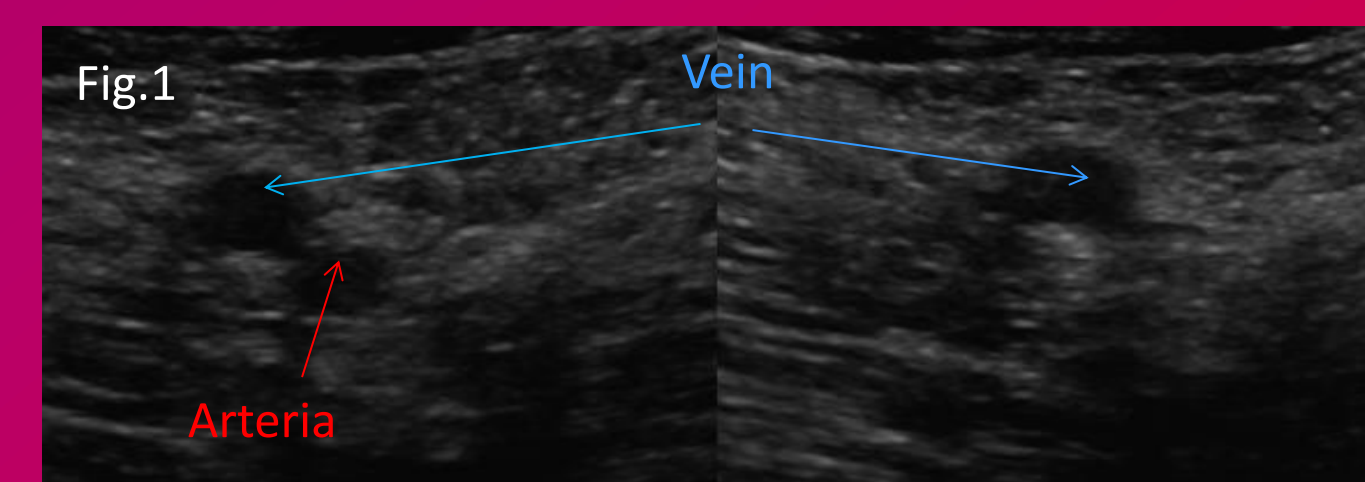


Fig. 1: Arteria and v.poplitea under Hunters' canal, over thrombus = normal arteria and vein, left – no compression, right – compression, vein is without thrombosis.

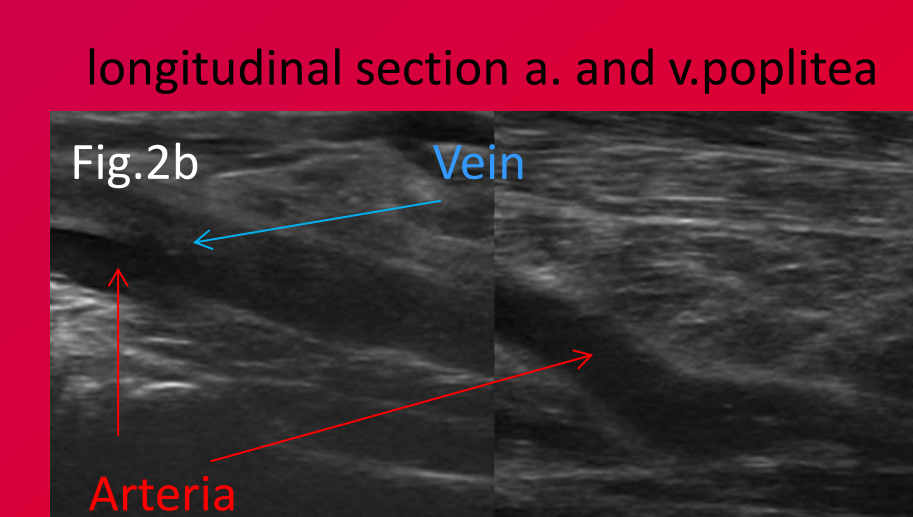
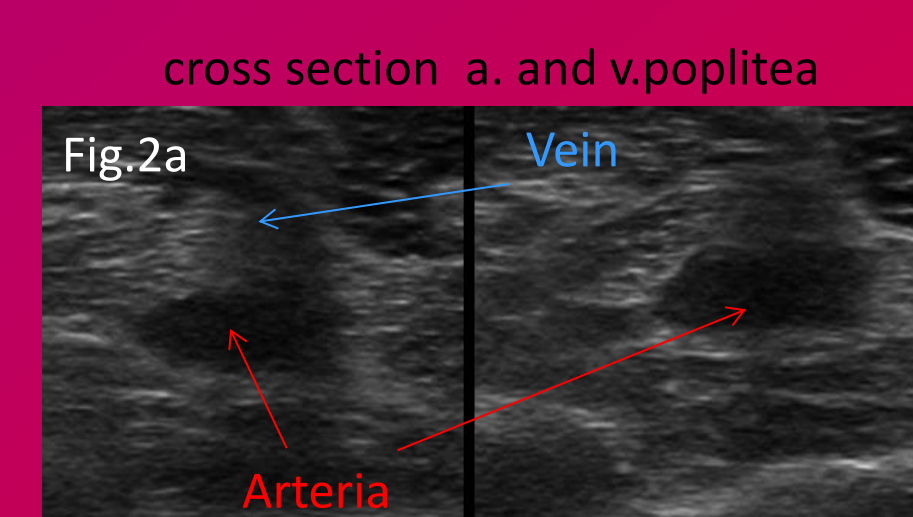


Fig. 2: Before application of leeches: distal section of the arteria and v.poplitea (in the slot at the knee joint) - thrombosis in the v. poplitea (gray color). V. poplitea is completely filled of subacute, homogenous hypoechoegenal thrombus = gently dilated (a, b – right), a. poplitea (black color)

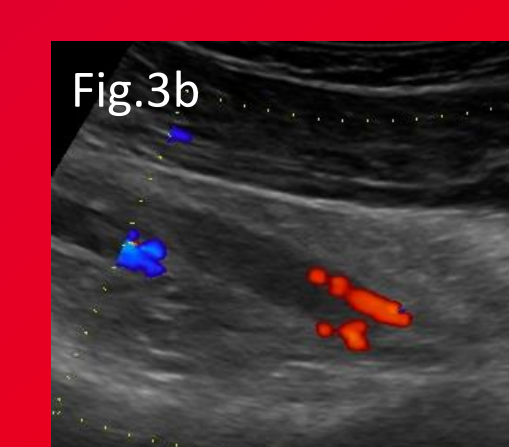
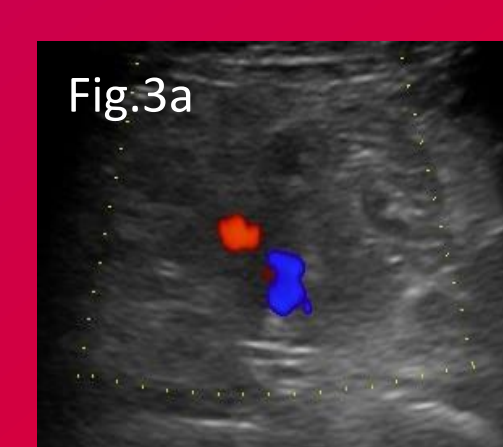


Fig. 3: After application of leeches: a) partial recanalisation in v.poplitea – 30% (red color – blood flow in 1/3 of vein), b) red color – peripheral thrombus drain – flow in 2/3 of vein

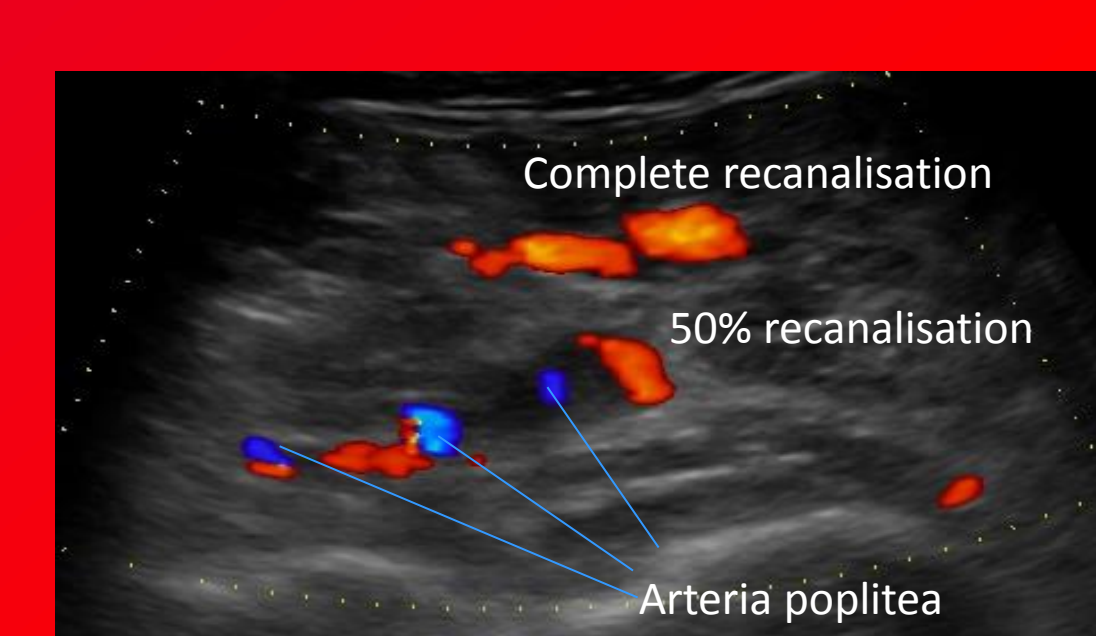
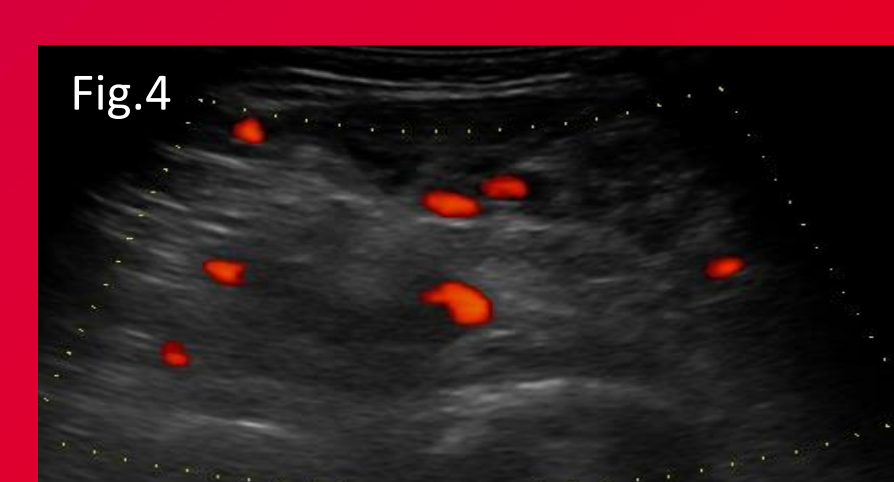


Fig. 4: Complete recanalisation in v.poplitea (red color), without thrombosis.

Conclusions

- combined therapy - improvement of subjective symptoms and objective criteria
- CLASSICAL therapy (LOCAL therapy – decongestion, recovery of cutaneous circulation and COMPLEX therapy - vasodilation, anti-inflammatory and anti-hemostatic) + HIRUDOTHERAPY
- overall clinical enhancement of health state, recanalisation in vein