

Elevating Arterial Blood Flow in Ischemic Diabetic Wound Patients with an External, Portable Electro-Muscular Device

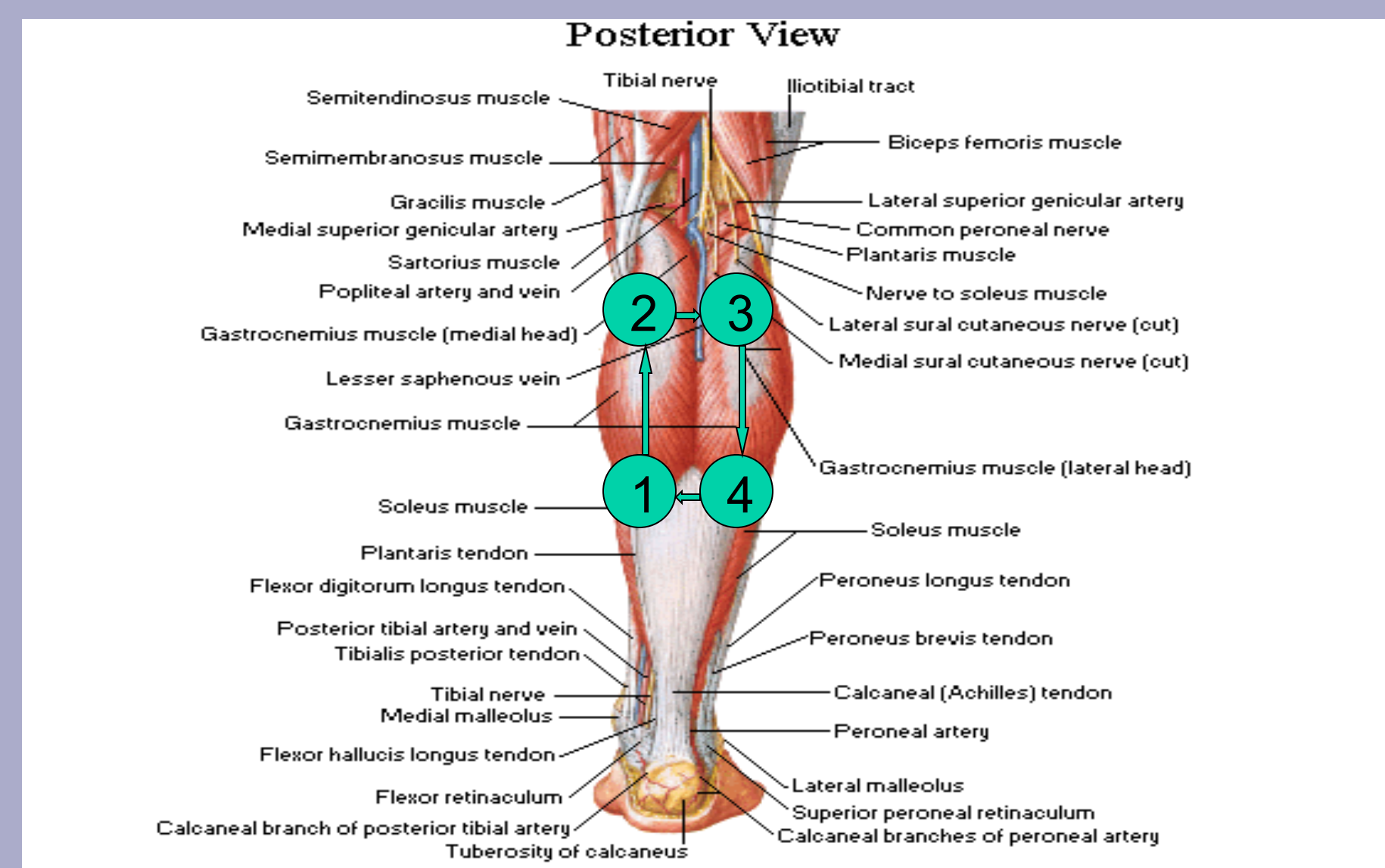
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Background

Peripheral Artery Disease (PVD) is one of the foremost complications of Diabetes and is the preeminent risk factor associated with development of foot ulcerations and the need for amputation. Few optional invasive procedures can revascularize an ischemic limb, but these can not be used in some of the patients. FlowAid FA-100 is an external, portable, neuro-stimulator that activate the calf muscles, producing a peristaltic wave that mimics the natural muscle pump. The FlowAid device enhances the arterial blood supply in two ways. It activates the muscles, elevating their metabolic demands causing dilatation of the arteries and elevating blood flow. By chronically stimulating the muscles it promotes angiogenesis and formation of natural arterial bypasses. The activating muscles promote the muscle pump action, clearing venous blood and edema and facilitating more arterial inflow.

The FlowAid FA-100 has 4 electrodes that stimulate different muscle groups in a repetitive cycle.



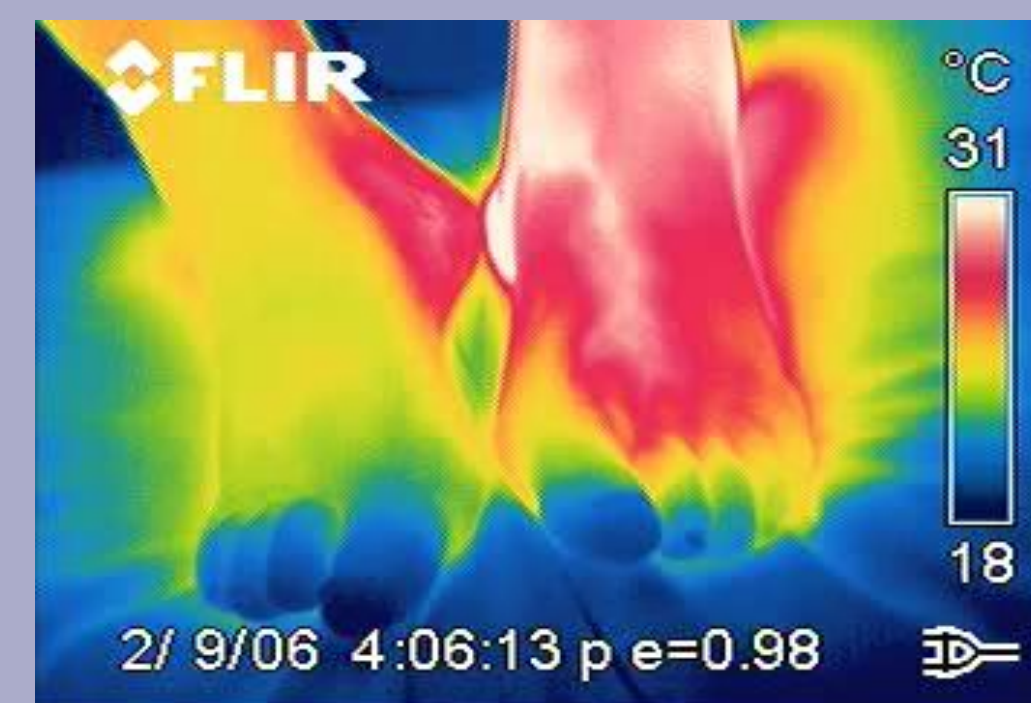
Purpose

To present the effects of FlowAid FA-100, an external neuromuscular stimulator device, on blood flow elevation in ischemic diabetic patients with a foot ulcer.

Methods

Three diabetic patients with chronic foot ulcers and an Ankle Brachial Index (ABI) of 0.35, 0.6 and 0.37 were treated with the FlowAid FA-100 device on their calf area for 1 hour twice daily. ABI measurements were repeated 6 weeks after. All the patients had a chronic foot ulcer that was conservatively treated.

Thermal imaging of ischemic feet



Thermal imaging 1.5 hours after treating the left leg with FlowAid



Ischemic toes before treatment



The same foot 6 weeks after FlowAid treatment



Results

The ABI score rose from 0.35 to 0.47, from 0.6 to 0.75 and from 0.37 to 0.57. The patients reported less pain and improved quality of life. One wound was completely closed and the two others decreased in size in 60%.

FlowAid FA - 100



Necrotic calcaneal wound before treatment



The same wound 6 weeks after FlowAid treatment



Conclusion

FlowAid FA-100 is a new technology with a potent ability to enhance arterial blood flow in ischemic patients by stimulating the native musculature - vascular systems. It is beneficial as an adjuvant treatment in diabetic patients with arterial insufficiency.