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just where
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CLINIPORATOR®

TECHNOLOGY FOR CARE

ELECTROSCLEROTHERAPY
VASCULAR MALFORMATIONS

IGEA®
CLINICAL BIOPHYSICS

INTRODUCTION

Vascular malformations are congenital anomalies of the vascular system which can represent a therapeutic challenge, particularly in patients with recurrent or therapy-resistant malformations.

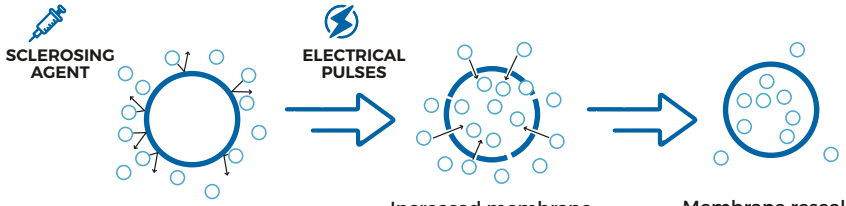
Current management mainly consists of intralesional sclerotherapy techniques. However, its effectiveness has been limited and often requires several treatment sessions.

Electrosclerotherapy is a cutting-edge treatment for venous and lymphatic malformations.

ELECTROSCLEROTHERAPY

Electrosclerotherapy consists of the application of short-term, high intensity electrical pulses that induce transient permeabilisation of cell membranes (reversible electroporation), thus facilitating the intracellular delivery of an otherwise poorly permeant sclerosing agent.

Reversible electroporation induces the temporary disruption of cytoskeletal structures of endothelial cells and significantly enhances the effect of the sclerosing agent. Furthermore, electrical pulses have an important immediate vascular effect (vascular lock) that reduces blood flow transiently and prevents bleeding. [9-10]



CLINICAL CASES

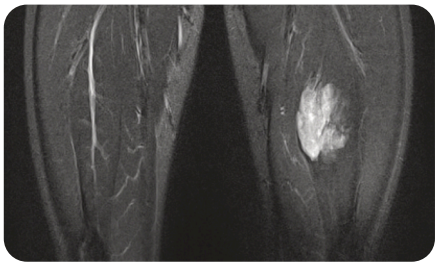


Fig 1-A: 10-year-old male patient. Symptomatic venous malformation of the left thigh unsuccessfully treated with surgery and sclerotherapy [2]

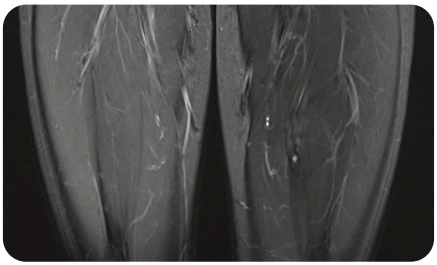


Fig 1-B: Complete resolution of the malformation three months after one electrosclerotherapy session [2]

HOW EFFECTIVE IS ELECTROSCLEROTHERAPY

A recent observational study [2] conducted in 17 patients with therapy-resistant symptomatic venous malformations showed remarkable clinical effectiveness of electrosclerotherapy, with 8 patients becoming asymptomatic and 9 patients showing improvement after treatment.

These favourable results were achieved after only one electrosclerotherapy treatment session in 88% of the patients.

The median applied dose of bleomycin was 3 mg, which represents an additional advantage: lowering the risk of side effects related to a high cumulative dose.

The median volume reduction following electrosclerotherapy measured on MRI images was 86%.

Electrosclerotherapy is used to treat different types of vascular malformations, including the following:

- **Venous Malformations**
- **Macrocystic and microcystic lymphatic malformations**
- **Some forms of arteriovenous malformations**
- **FAVAs**

BEYOND THE LIMITS WITH ELECTROSCLEROTHERAPY

HIGHER EFFECTIVENESS

FEWER TREATMENT SESSIONS

REDUCED DOSE OF SCLEROSING AGENT

MINIMAL SIDE EFFECTS

Fig 2-A: Therapy-resistant venous malformation

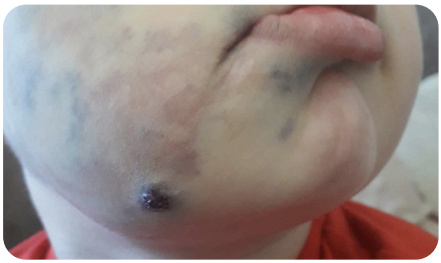


Fig 2-B: Result after 2 electrosclerotherapy sessions

Courtesy of Prof. W. Wohlgemuth
University Clinic Halle (Germany)

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