

VIDEO: MICROLYMPHATIC SYSTEM AND LPG TECHNIQUE

M. BARTOLO Jr, C. ALLEGRA

Microcirculation Laboratory of Angiology Department

Professor Claudio Allegra

San Giovanni in L. Hospital, Roma (Italy)

This is the Microcirculation Laboratory of the Angiology Department directed by the Professor Claudio Allegra, at the Hospital San Giovanni in Laterano in Rome. It is an advanced laboratory which allows the real time study of blood and lymphatic superficial microcirculation.

The heart of this Laboratory is this microscope supplied with a mercury lamp. Due to a oscillating arm supporting it, the observation of the superficial microcirculation can be done in each part of the human body

To visualize the lymphatic microcirculation, 0.1 ml of fluorescent Dextran (molecule of high molecular weight) has to be injected under the epidermis.

This is a particularity of the Servo Nulling System, a device allowing the measurement of the intramicrolymphatic pressure.

A micropipette mounted on this micromanipulator will be introduced, under video control, within a superficial microlymphatic vessel.

As we can see on this picture of high magnification, while penetrating within the lymphatic vessel, the micropipette will help to measure the superficial lymphatic pressure

The pressure data measurements are visualized on a screen and sent to a computer in order to evaluate the lymphatic pressure changes in real time.

The subjects underwent a treatment by LPG Technique twice a week for 7 weeks (total number of sessions= 14). A microlymphographic control has been done at:

- W0 (before treatment);
- W4 (during treatment);
- W7 (at the end of the treatment);
- W10 (3 weeks after the end of the treatment)

We have studied the effects of the LPG Technique on patients affected with Constitutional Functional Venopathy (CFV).

At W0, this microlymphographic image can be observed: The timer indicates the time elapsed since the injection of Dextran. After a few secondes, the superficial microlymphatic vessels begin to appear. Their diameter, expressed in microns, is on the upper limits of the normal range (78,9 μ). The number of microlymphatic meshes is slightly increased, which reflects a stasis of the lymph within the lymphatic vessels and within the extracellular matrix. The microlymphatic pressure of 4.9 mmHg indicates a slight hypertension of the lymphatic microcirculation.

At W4, the microlymphographic appearance is significantly modified: The vessel diameter and also the number of meshes have decreased.. The pressure is slightly increased; Such data does not signify an immediate improvement of the lymphatic drainage

At W7, the microlymphographic appearance is significantly modified. The vessel diameter has decreased to 71.7 μ . The number of meshes has increased when compared to W4 but decreased when compared to W0. The microlymphographic pressure is significantly decreased when compared to W0 (2.6 mmHg; $p < 0.05$). Those data show an improvement of the cutaneous lymphatic drainage

At W10, the improvement of the microlymphographic parameters is still observed. The decrease in the number of meshes indicates a better lymph drainage towards the deep lymphatic circulation; This drainage improvement is also shown by the decrease of the microlymphatic pressure as by the decrease of the vascular diameter.

We can finally conclude that the LPG treatment improves the superficial lymphatic circulation by increasing the drainage towards the deep lymphatic circulation.