ADVANCED TECHNOLOGIES IN THE TREATMENT OF CHRONIC VENOUS INSUFFICIENCY - LONGTERM RESULTS

Asistent univ. Dr. Iulian AVRAM\textsuperscript{1,2}, Asistent univ. Dr. Ana-Maria UNGUREANU\textsuperscript{1}, Ş.l. Dr. Caius DOROŞ\textsuperscript{1}, Dr. Mihaela AVRAM\textsuperscript{1}, Asistent univ. Dr.med. Mihai BALINT\textsuperscript{1}, Dr. Mihaela PASZTORI\textsuperscript{3}

\textsuperscript{1}University of Medicine and Pharmacy – Timișoara
\textsuperscript{2}Klinik fur Allgemein-, Viszeral- und Thoraxchirurgie, Caritasklinikum, Saarbrucken, Germania
\textsuperscript{3}Polithraumathology Clinic, Timișoara

1. INTRODUCTION

Until recently surgical ligation and stripping were considered to be the “gold standard” in the treatment of chronic venous insufficiency, but with recurrence rates of up to 57% at 10 years. The first application of laser therapy in the treatment of chronic venous insufficiency was reported in 2000 \cite{1,2}.

Endovenous laser therapy (EVLT) is a minimally invasive treatment for varicose veins. EVLT is recommended in the treatment of varicose veins with or without sapheno-femoral or sapheno-popliteal junction insufficiency, treatment of truncal varicose veins, large branch veins and larger tributaries\cite{3,4}.

The aim of our study was to verify the efficacy of this novel method for the treatment of chronic venous insufficiency and to analyze the results at 3 years after treatment.

The laser device used was a Angiodynamics Delta 30 diode laser with the wavelength of 810 nm, applying a energy of \approx 100 J/cm, according to manufacturer instructions. In all cases we used ultrasound-guided catheter placement of the laser, combined with control by skin transillumination \cite{5}.

Preoperative assessment included clinical exam and Doppler ultrasound in all cases with preoperative marking of entry point \cite{6}.

2. METHODOLOGY
All patients underwent a postoperative follow-up at 1 month and 6 month during the first year after surgery, and then yearly. The postoperative follow-up also included a clinical exam and ultrasound of the lower limbs.

3. RESULTS AND DISCUSSIONS

From 1.09.2009 to 30.11.2010 we treated 50 patients with great saphenous vein insufficiency using the EVLT treatment. The patients were classified in CEAP classes C3-C6 (Fig. 1) and mean age of the patients was 45±16.4 years.

In 48 cases the ultrasound control at 3 month postoperative revealed complete thrombosis of GSV (Fig. 2). In one other case we observed no thrombosis of the GSV with significant reflux and in one case asymptomatic incomplete thrombosis of the GSV (Fig. 2).

No major complications were noted. Minor bruising was recorded in 40 patients and transient leg swelling with normal ultrasound exam in 6 patients (Fig. 3).

Only 27 patients out of the 50 patients we treated completed the follow-up (Table 1).

We compared the results obtained with this new technique with a previous study done in our clinic (Table 2, Fig. 4) [7,8].
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Table 2. Classic technique and EVLT: comparative results.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Classic technique [8]</th>
<th>EVLT</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor complications</td>
<td>2.65%</td>
<td>8%</td>
<td>S</td>
</tr>
<tr>
<td>Major complications</td>
<td>5.45%</td>
<td>0</td>
<td>S</td>
</tr>
<tr>
<td>Hospitalisation (days)</td>
<td>4.2±3.2</td>
<td>2.1±2.1</td>
<td>S</td>
</tr>
<tr>
<td>Sick leave (days)</td>
<td>28±15.2</td>
<td>16±7.3</td>
<td>S</td>
</tr>
<tr>
<td>Recurrent reflux</td>
<td>Not applicable</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Reflux requiring redo surgery</td>
<td>2.74%</td>
<td>2</td>
<td>S</td>
</tr>
</tbody>
</table>

Fig. 4. Classic technique and EVLT: comparative results.

4. CONCLUSIONS

Although more expensive (190 Euro), the endovenous laser treatment EVLT is a good alternative to traditional surgery for chronic venous insufficiency in selected cases with excellent results, but with higher costs for the single-use material. The complication rate was significantly lower compared to the classic technique of ligatin of the GSV and stripping. This higher costs are compensated by reducing hospital stay and a faster postoperative recovery period.

REFERENCES