

ENDOVENOUS SAPHENOUS ABLATION USING EVRF RADIOFREQUENCY DEVICE AND CR45i CATHETER. EXPERIENCE OF 150 CASES.

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Introduction:

Radiofrequency ablation (RFA) is a medical procedure, where part of the electrical conduction system of the heart, tumor or other dysfunctional tissue is ablated using the heat generated from the high frequency alternating current. RFA has become increasingly accepted in the last 15 years with promising results.

Endovenous ablation has replaced stripping and ligation as the technique for elimination of saphenous vein reflux. One of the endovenous techniques is a radiofrequency-based procedure. Newer methods of delivery of radiofrequency were introduced in 2007.

Endovenous procedures are far less invasive than surgery and have lower complication rates. The procedure is well tolerated by patients, and it produces good cosmetic results. Excellent clinical results are seen at 4-5 years, and the long-term efficacy of the procedure is now known with 10 years of experience.

The Belgian F care systems introduced EVRF for trans-dermal treatments 14 years ago and started its use for saphenous closure with the CR45i catheter in 2010. It works on **10 MHz** and uses 25 Watts, which provides an effective closure of the vein trunks with minimal heat transfer to the surrounding tissues, causing minimal damage, no pain and providing an excellent closure rate.

Objective:

We evaluated the effectiveness of EVRF treatment and analyzed the early and mid-term results using the EVRF device with a CR45i catheter for the endovenous ablation of GSV and/or SSV.

Methods:

From July 16, 2011 to September 29, 2012 we treated 150 patients (98 women, 52 men, 45 years of average age) with saphenous reflux and varicosity using EVRF. The output power was 25 Watts, the catheter removal rate was 4 beeps/0,5 cm with 8 beeps at the beginning 2 cm back from the sapheno-femoral (sapheno-popliteal) junction. In every case we used tumescent local anesthesia with some superficial sedation in the presence of an anesthesiologist.

Patients' clinical data, the data of the pre- and postoperative ultrasound examinations, the total power emitted and the diameters and flow of the treated veins measured by ultrasound have been recorded. Photo documentation was prepared in each case. Clinical evaluation was performed one day, one week and one to two months after surgery using a scale of postoperative pain, patient satisfaction and outcome ultrasound procedure.

Results:

The procedures were performed on 150 limbs - 129 GSV, 15 SSV, 6 GSV+SSV; 131 patients belonged to CEAP 2,3, 19 patients to CEAP 4,5; 135 primary cases, 15 recurrent varicosity. Crossectomy was performed in 6 cases due to the GSV larger than 20 mm at the junction. Tributaries were treated in the same session in all of the cases.

The mean diameter of the GSV was 6,2 and of the SSV 4,8 cm consequently, reflux more than 0,5 sec was detected with duplex scan in all patients. The length of the treated vein

segment ranged from 15 cm to 82 cm, using an amount of 7200 Joules total energy emitted on average. The average duration of surgery was 54 minutes, including the treatment of the enlarged tributaries.

Complete occlusion was found in 149 of the total 150 cases (99%) at the one month ultrasound control, one GSV in a 160 kg heavy patient remained open. Postoperative pain reported by the patients on a visual analogue scale was 2/10, the average patient satisfaction was 149/150 (99%). There were no cases of deep vein thrombosis, skin burns, neuritis or bleeding, we found minimal bruising at the treatment site of the tributaries in some cases, 2 patient had mild inflammation, treatable conservatively.

Conclusion:

The EVRF saphenous ablation is a safe, painless procedure for the treatment of the reflux of the GSV and/or SSV - high patient acceptance and minimal postoperative discomfort allows the quick return to work and normal life. The procedure under local tumescent anesthesia is simple, the disposable devices are easy to use. In our practice the EVRF treatment with CR45i catheter was superior to conventional varicectomy or to laser ablation using a 2nd generation device with bare laser fiber. 1 and 2 year controls are planned.