



REPORT ON RESEARCH PROJECT

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Please fill in ALL the blanks in BLOCK LETTERS. Missing any items may lead to failure of processing your research report.

SECTION A : PERSONAL PARTICULARS OF HST TRAINEE

Name of Trainee: YUE KAI HONG ... Specialty: General Surgery
Commencing date of Training: 1/7/2015 ... Principal Hospital: KWH
Current Training Period: -1/7/2017 to 31/12/2017 ... Training Hospital: KWH

SECTION B : RESEARCH PROJECT

Title: RE-INTERVENTION FOR PATIENT AFTER ENDOVENOUS LASER THERAPY FOR SAPHENOFEMORAL JUNCTION INCOMPETENCY AND GREAT SAPHENOUS VEIN REFLUX

Principal investigator: KH Yue
Co-investigators: Wong WC, Wong SH
Duration of project: 1/6/2017-30/8/2017
Current Status: Ongoing
Type of Research: Case Report
Role of trainee (%): Conceptualization & design 90, Conduct of Study 100, Data collection 90, Data analysis 100, Abstract / Manuscript writing up 90, Clinical Study, Laboratory Study

Abstract (The content should include Background, Aim of study, Method, Result and Conclusion.)

You are NOT required to include the result and conclusion in the abstract if your project is still ongoing.
A key reference list should be included in your research report. The total number of references should be no more than 5.

Introduction:

Endovenous laser therapy combined with below knee stab avulsion is the mainstream of treatment for saphenofemoral junction (SFJ) incompetency and great saphenous vein (GSV) reflux. Some patients require additional intervention for recurrent and residual disease after the procedure. The risk factor for re-intervention was not well studied.

Patients and Methods:

Records of patients underwent endovenous laser therapy with stab avulsion for SFJ incompetency and GSV reflux from Jan 2014 to Jun 2016 were reviewed. Patient with endovenous laser therapy alone or in combination with foam sclerotherapy were excluded. Patient demographics, clinical status, operation detail, surgical outcomes, follow-up duplex and re-intervention details were reviewed. Outcomes were analyzed per treated limb.

Recanalization is defined as detection of trickle flow on segment of GSV or complete recanalization of GSV on duplex USG. Residual below knee GSV reflux and calf varicosities is defined as detection of such within 6 months after operation. Clinical recurrence is defined as recurrence of varicose vein or venous ulcer.

Results:

89 limbs of 80 patients underwent endovenous laser therapy with stab avulsion, including 5 patients who had recurrent varicose vein with previous surgical intervention. The median duration of follow-up was 13.5 months (1 - 36 months).

The rate of clinical recurrence was 6.7% (6 limbs). The median time of recurrence is 12 month post operation (3-22 months). Cause of recurrence was de novo recanalization of GSV (2 limbs), AASV reflux (2 limbs), and perforator reflux (2 limbs).

The rate of recanalization of GSV on USG was 13.5% (12 limbs). The rate of residual below knee GSV reflux and calf varicosities was 23.6% (21 limbs). There is no difference in outcomes in patient with clinical C2-C6 disease (p = 0.136). Patient with recurrent disease or pre-existing deep vein reflux do as well as the others, although pre-existing deep vein reflux appears to be associated with higher risk of clinical recurrence (Odd ratio 16.4, p = 0.131). Operative anesthesia, duration, total laser time and energy, and length of GSV ablation does not affect outcomes.

Re-intervention rate is 10.1% (9 limbs). All of the 9 limbs underwent foam sclerotherapy to GSV or varicosities under LA; including 7 limbs with residual below knee GSV reflux and calf varicosities (Odd ratio 13.5, p = 0.002), and 2 limbs with recanalized GSV (Odd ratio 6.01, p = 0.013). Indication of foam sclerotherapy was ulcer-related in 3 limbs (3/9 limbs, 33.3%), calf discomfort in 2 limbs, and cosmetic in 4 limbs. Higher proportion of patient with clinical C5 or C6 disease

require re-intervention than the others (3/16, 18.5% vs 6/73, 8.22%); however, it does not reach statistical significance due to small sample size ($p = 0.201$). Median time of re-intervention was 7 month post-op (2 – 27month).

Conclusion:

Endovenous laser therapy is a feasible modality in patient with recurrent disease and pre-existing deep vein reflux. The outcome is comparable in terms of clinical recurrence and recanalization.

One-third of re-interventions after endovenous laser therapy was related to venous ulcer. Patients with clinical C5 or C6 disease might have higher risk for re-intervention and it was largely due to residual below knee GSV reflux and calf varicosities. Proper preoperative counseling should be given to patient.

SECTION C : COMMENTS FROM TRAINEE / SUPERVISOR

(Attach separate document if necessary)

Presented as Poster Presentation in RCSEd/CSHK Conjoint Scientific Congress 2017 (23 – 24 September 2017)

“Controversies in Surgery”. (Poster no. P50. Title: RE-INTERVENTION FOR PATIENT AFTER ENDOVENOUS LASER THERAPY FOR SAPHENOFEMORAL JUNCTION INCOMPETENCY AND GREAT SAPHENOUS VEIN REFLUX)

Name of Trainee: YUE KAI HONG

Date: 27/12/2017

Name of Supervisor: Dr. Maket Wong

Date: 27/12/2017

Revised on Jan 2016

Key Reference

1. Santin BJ, Lohr JM, Panke TW, Neville PM, Felinski MM, Kuhn BA, Recht MH, Muck PE. Venous duplex and pathologic differences in thrombus characteristics between de novo deep vein thrombi and endovenous heat-induced thrombi. *J Vasc Surg Venous Lymphat Disord.* 2015 Apr;3(2):184-9.
2. Rustempasic N, Cvorak A, Agincic A. Outcome of endovenous laser ablation of varicose veins. *Acta Inform Med.* 2014 Oct;22(5):329-32.
3. Golbasi I, Turkay C, Erbasan O, Kemaloglu C, Sanli S, Turkay M, Bayezid Ö. Endovenous laser with miniphlebectomy for treatment of varicose veins and effect of different levels of laser energy on recanalization. A single center experience. *Lasers Med Sci.* 2015 Jan;30(1):103-8.
4. Bush RG, Bush P, Flanagan J, Fritz R, Gueldner T, Koziarski J, McMullen K, Zumbro G. Factors associated with recurrence of varicose veins after thermal ablation: results of the recurrent veins after thermal ablation study. *ScientificWorldJournal.* 2014 Jan 27;2014:505843.
5. Van der Velden SK, Lawaetz M, De Maeseneer MG, Hollestein L, Nijsten T, van den Bos RR; Members of the Predictors of Endovenous Thermal Ablation Group. Predictors of Recanalization of the Great Saphenous Vein in Randomized Controlled Trials 1 Year After Endovenous Thermal Ablation. *Eur J Vasc Endovasc Surg.* 2016 Aug;52(2):234-41.