

Risk Factors Combined EHIT And Recanalization After Endovenous Thermal Ablation

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Introduction and Objective

- Endovenous thermal ablation (EVTA) in the form of radiofrequency ablation (RFA) or endovenous laser ablation (EVLA) has become the primary treatment modality for chronic venous insufficiency
- Endovenous heat induced thrombosis (EHIT) is a known complication with incidence varying between 0.2-5.1%
- Recanalization rates have been found to not be significantly different between RFA and EVLA
- We assessed the incidence of those who developed both EHIT and recanalization and associated risk factors

Methods

- Retrospective review of 13,623 procedures performed in 4,058 patients
- Data was collected at follow-up visits within 1 week of procedure, ever 3 months for the first year and every 6 months thereafter
- Recanalization was defined as > 500 ms for GSV, SSV and ASV and > 350 ms for PV
- All patients who developed EHIT 1, 2, 3 or 4 were recorded

Analysis

Variable	EHIT + Recanalization (N = 39)	No EHIT + No Recanalization (N = 13,101)	P-Value
Female	21 (53.84%)	8833 (67.42%)	0.071
Age	64 (56 - 67)	63 (54 - 73)	< 0.0001
BMI	29.68 (21.3 - 37.29)	30.66 (26.6 - 36.2)	< 0.0001
Laser	31 (79.48%)	5,128 (39.14%)	< 0.0001
RFA ⁽¹⁾	8 (20.52%)	7,973 (60.86%)	< 0.0001
Left Laterality	1 (2.50%)	6,692 (51.08%)	< 0.0001
C2*	1 (2.56%)	430 (3.28%)	0.802
C3*	18 (46.15%)	4,852 (37.04%)	0.239
C4*	14 (35.90%)	6,105 (46.60%)	0.181
C5*	0 (0%)	250 (1.91%)	N/A
C6*	6 (15.39%)	1,464 (11.17%)	0.405
GSV ⁽²⁾	33 (84.62%)	8,630 (65.87%)	0.014
SSV ⁽³⁾	6 (15.38%)	3,307 (25.24%)	0.157
ASV ⁽⁴⁾	0	701 (5.35%)	N/A
PV ⁽⁵⁾	0	463 (3.53%)	N/A

Table I. Descriptive characteristics between EHIT + recanalization group versus no EHIT + no recanalization group.

Variable	Odds Ratio	P-Value
Recanalization	10.716	< 0.0001
Female	0.914	0.524
Age	1.037	< 0.0001
Laser	0.447	< 0.0001
RFA ⁽³⁾	N/A	N/A
Left Laterality	0.851	0.223
CEA ⁽²⁾	0.969	0.659
GSV ⁽³⁾	2.522	0.011
SSV ⁽⁴⁾	0.615	0.252
ASV ⁽⁵⁾	N/A	N/A
PV ⁽⁶⁾	N/A	N/A

Table II. Logistic regression for EHIT patients recanalization controlling for possible covariates.

Results

- Data for EHIT and recanalization were correlated with age, gender, laterality, presenting symptoms of CEAP, BMI and treated targeted vein
- Recanalization is strongly associated with EHIT occurrence (OR 10.716, p-value < 0.0001)
- EVLA was associated with a less risk of EHIT (OR 0.447, p-value < 0.0001)
- Vein locations such as the GSV was associated increase occurrence (OR 2.522, p-value 0.011)

Conclusions

- EHIT showed association with increased recanalization on multivariate regression
- Further analysis needed to delineate other contributing factors