Randomized Clinical Trial Comparing Cyanoacrylate Glue Closure With Surgical Stripping: 30D And 6M Outcomes

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Disclosures

I have the following potential conflicts of interest:

- Consulting / Conferences / Honoraria:
  - Medtronic
  - Cook Medical
  - Boston Scientific
  - BD
  - Gore Medical
- Research funding:
  - Medtronic
  - Gore Medical
  - Laboratoires Urgo

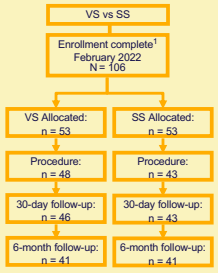
VenaSeal Spectrum Program

Three Studies	**VenaSeal system vs Surgical Stripping RCT**	VenaSeal system vs Endothermal Ablation RCT	VenaSeal system Venous Leg Ulcer Study
Status	**Enrollment complete February 2022 N = 108**	Enrollment complete September 2022 N = 275	Enrollment complete May 2023 N = 125
Primary Endpoints	**1. Peri-procedure treatment satisfaction (30 days) 2. Post-procedure treatment satisfaction (30 days) 3. Elimination of truncal reflux (index procedure)**		Time to ulcer healing through 12 months

1. Gibson, et al. JVS-Vascular Insights. 2024;2:100124.
RCT = randomized control trial

VenaSeal vs Surgical Stripping study

Conventional Venous Outcomes	
Anatomical	Occlusion rate Length of vein closed Recanalization
Clinical	Ulcer healing[1] Ulcer recurrence[1] VCSS/CEAP
Patient Reported	SF36 / EQ5D Modified AVVQ NRS for pain
Health Economic	Target limb healthcare utilization Return to work / safety
Other	Physician satisfaction Safety outcomes



Baseline Characteristics

Key Demographics and Baseline Characteristics	VenaSeal system (N=53 participants)	Surgical Stripping (N=53 participants)
Age (years)	60.3 ± 14.39 (50)	61.5 ± 12.96 (49)
Female	58.0% (29/50)	67.3% (33/49)
Body mass index (kg/m²)	25.8 ± 5.77 (50)	24.2 ± 3.41 (47)
Symptoms in the target limb	96.0% (48/50)	89.4% (42/47)
Heaviness	75.0% (36/48)	73.8% (31/42)
Pain	70.8% (34/48)	64.3% (27/42)
Aching	39.6% (19/48)	45.2% (19/42)
Swelling	64.6% (31/48)	47.6% (20/42)

Expected demographics and similar symptoms in both groups

Numbers are mean ± SD (n) or % (n/N)

Pre/intra procedural characteristics[1]

Characteristic	VenaSeal system (N=53 participants) (N=59 veins)	Surgical Stripping (N=53 participants) (N=57 veins)
Pre-Procedural Characteristics		
Average diameter of target vein (mm) [2]	5.8 ± 2.07 (52)	5.7 ± 1.75 (48)
Target Vein		
AASV	3.4% (2/59)	1.8% (1/57)
GSV 1	**79.7% (47/59)**	**84.2% (48/57)**
GSV 2	3.4% (2/59)	1.8% (1/57)
SSV	13.6% (8/59)	12.3% (7/57)
Intra-Procedural Characteristics [3]		
Length of clinically relevant superficial truncal disease in target vein (cm)	54.1 ± 17.99 (49)	53.4 ± 15.93 (44)

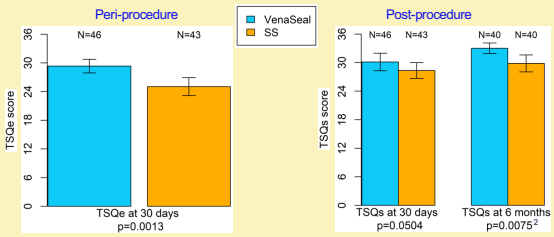
1. Injection To Treat (All Target Veins)
2. The average diameter is the average of the proximal, mid, and distal diameter measurements at the baseline visit. Participants could have multiple target veins treated; if they had multiple target veins, they were designated primary and secondary. Average diameter measurements are from both primary and secondary target veins. In the VenaSeal group, 50 of the 52 veins measured were primary veins; in the surgical stripping group, 47 of the 48 veins measured were primary veins.
3. Measured on the procedure day. In the VenaSeal group, 48 of the 49 veins treated were primary veins; in the surgical stripping group, 43 of the 44 veins measured were primary veins.
Numbers are mean ± SD (N) or % (n/N)
AASV = anterior accessory saphenous vein; GSV = great saphenous vein; SSV = small saphenous vein

Summary of primary outcomes

RCT	Endpoint	P-value	Alpha	Superiority[2]	Take home message
VS vs SS	Peri-procedure Satisfaction	0.0013	0.025	Yes	Peri-procedural, participants are more satisfied when treated with VenaSeal
	Post-procedure Satisfaction	0.0504	0.05	No	Post procedural participants are similarly satisfied when treated with VenaSeal
	Elimination % of Truncal Reflux[3]	NA	NA	NA	VenaSeal performs similarly in elimination % of truncal reflux

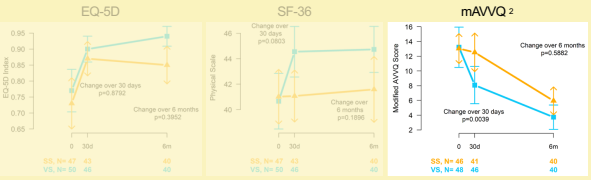
1. Presented by Gohel M & Gibson K at Charing Cross 2024, London UK and Venous Symposium, New York US.
2. If the superiority is 'Yes', it indicates that VenaSeal is superior to the standard of care on the corresponding endpoint.
3. Elimination of clinically relevant superficial truncal disease in each target vein at the time of index procedure as measured by the percentage of target vein length successfully treated.

Venous TSQ analyses[1]



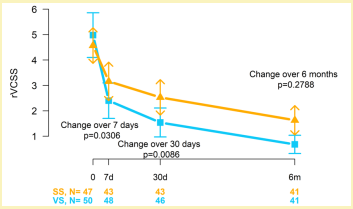
1. Measured 30 days and 6 months after the index procedure.
2. P-value for TSQs at 6 months does not account for multiple comparisons. It is an unadjusted comparison of whether the 6-month averages are the same for the two groups.
TSQe = treatment satisfaction questionnaire early; TSQs = treatment satisfaction questionnaire status

Traditional quality of life measures[1]



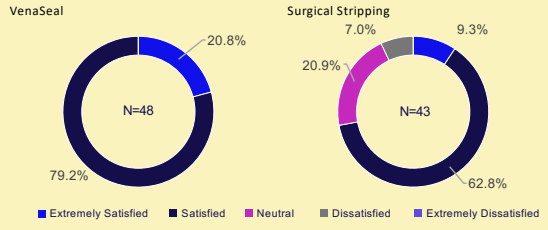
1. Intention To Treat – at Day 30 and Month 6
2. Modified AVVQ: responses for question 4 ('In the last two weeks, how much ankle swelling have you had?') were not collected and are not included in the score. Caution should be exercised when comparing to results from the complete AVVQ.
P-values for questionnaires are not adjusted for multiple comparisons. These compare whether the 30-day and 6-month change from baseline is the same for the two groups.
Numbers are mean ± 95% CI (N)
EQ-5D = EuroQol, 5 dimensions; mAVVQ = Aberdeen varicose vein questionnaire; QoL = quality of life; SF-36 = Short form 36 items

Clinical assessment[1]



1. Intention To Treat – at Day 7, Day 30 and Month 6
2. P-values for questionnaires are not adjusted for multiple comparisons. These compare whether the 7-day, 30-day, and 6-month change from baseline is the same for the three time points.
Numbers are mean ± 95% CI (N)
rVCSS = revised venous clinical severity score

Physician satisfaction



CEC adjudicated AEs through 6 months

Events[3]	VenaSeal system (N=53)	Surgical Stripping (N=53)
Hypersensitivity[4] to VenaSeal system adhesive	11.3% (6/53)	0
Phlebitis[5]	1.9% (1/53)	1.9% (1/53)
Granuloma[6]	0	0
EGIT (ARTE)[7]	0	0
Serious AEs (SAEs)		
Related to study/device		
Hematoma	0	1.9% (1/53)
Phlebitis	1.9% (1/53)	0
Not related to study/device		
Peripheral venous disease[8]	0	1.9% (1/53)
Total SAEs	1.9% (1/53)	3.8% (2/53)

1. CEC = clinical events committee
2. AEs = adverse events in the target limb, Intention to Treat
3. Participant-level VenaSeal-specific events identified in the protocol
4. An allergic reaction to VenaSeal adhesive
5. Inflammation of a vein
6. A non-specific grouping of macrophages
7. A procedure grouping of events that treated vein into the deep system; EGIT = endovenous glue induced thrombus; EHIT = endovenous heat induced thrombus; ARTE = ablation related thrombus extension
8. Contralateral limb treated 6 months post-index procedure.

Conclusions

1. **Innovative study design** – First of its kind, robust research comparing VenaSeal system to established therapies in participants with SVD assessing traditional outcome measures and a novel patient-reported outcome.
2. **Participants were more satisfied with VenaSeal treatment** – VenaSeal system participants showed significantly higher peri-procedural satisfaction and similar post-procedural satisfaction (VenousTSQ) versus SS, and they experienced improvements in disease severity (rVCSS) and QoL (mAVVQ) after 30 days.
3. **Physicians were more satisfied with VenaSeal treatment** – 100% of physicians were satisfied with the VenaSeal system while more than 27% of physicians were less than satisfied with surgical stripping.
4. **Independently verified safety profile** – VenaSeal system has a low incidence of adverse events, as aligned with published literature. No new types of adverse events were reported.
5. **VenaSeal system surpasses SS in early outcomes** – Results suggest that VenaSeal system is an excellent alternative.