

Infra-inguinal bypass tunneling technique on patency and amputation free survival in critical limb threatening ischemia

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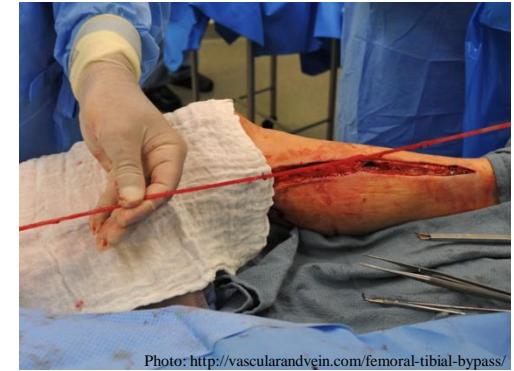
DISCLOSURE

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**No Relevant Financial
Relationship Reported**



Background



- Lower extremity bypass is an essential component in the treatment of patients with critical limb threatening ischemia (CLTI).
- Modifiable factors of tunneling technique have not been studied.
 - Deep tunneling *may* allow protection from wound infection, bleeding/damage during the blind tunneling procedure, compression of graft by fascia or difficulty of future revisions to the graft.
- The objective of this study was to investigate the association of lower extremity bypass (LEB) tunneling technique on clinical outcomes of patency and amputation-free survival.

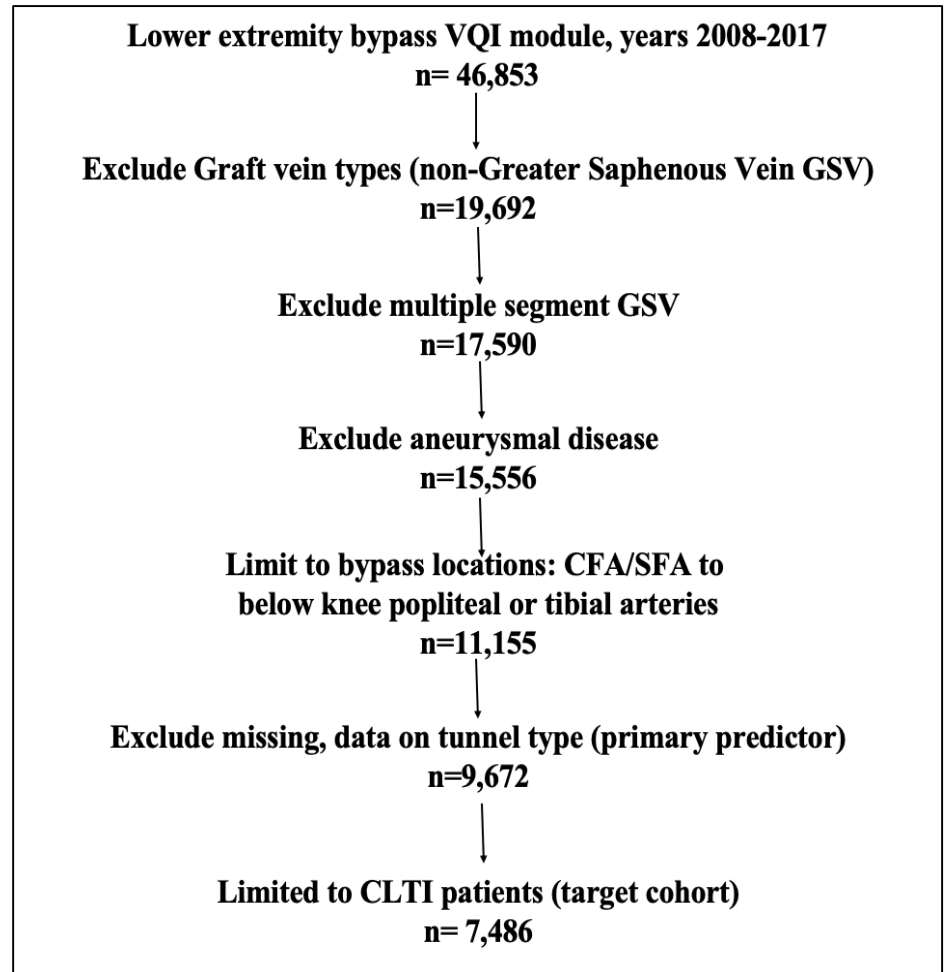
Methods

- The **Vascular Quality Initiative** (VQI) national database was utilized 2008-2017

- Primary outcomes defined *a priori* as patency & amputation-free survival

- Associated risk factors identified with univariate analyses

- Stepwise multivariate logistic regressions for primary outcomes (adjusting for potential confounders) were performed



Results

- Univariate Analyses
- Mean age years was 66+/-12 and 65 +/-11 (subfascial)
- Mean long term follow up days was 276 vs 272 (subfascial) $P>0.05$
- Tunneling technique **associated:**
 - age, race, graft orientation (reversed/non-reversed), bypass targets, harvest type, ESRD, smoking, CABG, CHF, surgical site infection at discharge and indication (rest pain/ tissue loss/acute ischemia) and P2y12 inhibitor at discharge ($P<0.05$)

Results

Table 1. MV logistic regression for amputation free survival

Variable(s)	OR	95%CI lower	95%CI upper	P-Value
tunnel technique (ref subcutaneous)	1.307	0.912	1.874	0.144
Age category 50-79 vs 0-49	1.642	0.734	3.669	0.227
Age category 80+ vs. 0-49	1.369	0.719	2.608	0.339
Sex (ref male)	1.177	0.814	1.702	0.386
ESRD (ref no)	0.353	0.203	0.614	0.0002
CHF (ref no)	0.496	0.325	0.758	0.0012
Surgical site infection (ref no)	0.345	0.172	0.693	0.003
COPD (ref no)	0.612	0.414	0.905	0.014
functionality (ref dependent)	1.581	1.084	2.306	0.017
Aspirin at discharge (ref no)	1.691	1.08	2.649	0.023
P2y12 inhibitor at LTF (ref no)	1.479	1.023	2.138	0.037

P<0.05

- *ESRD*
- *CHF*
- *COPD*
- *Functionality*
- *Aspirin at discharge*
- *P2y12 inhibitor at long term follow up*

Results

Table 2. MV logistic regression for primary patency at LTF

Variable(s)	OR	95%CI lower	95%CI upper	P-Value
tunnel technique (ref subcutaneous)	1.049	0.803	1.37	0.7243
Age category 50-79 vs 0-49	0.983	0.533	1.815	0.9575
Age category 80+ vs. 0-49	1.097	0.651	1.848	0.7274
sex (ref male)	1.028	0.775	1.365	0.8463
CABG (ref no)	2.052	1.351	3.116	0.0008
COPD (ref no)	1.42	1.018	1.98	0.039
Aspirin discharge (ref no)	1.535	1.066	2.209	0.0212
P2y12 inhibitor LTF (ref no)	0.542	0.411	0.713	<.0001
Anticoagulation LTF (ref no)	0.565	0.417	0.766	0.0002
Surgical site infection LTF (ref no)	0.516	0.291	0.916	0.0238

P<0.05

- CABG
- COPD
- Aspirin discharge
- P2y12 inhibitor at LTF
- Anticoagulation LTF
- SSI LTF

Results

Table 3. MV logistic regression for secondary patency at LTF

Variable(s)	OR	95%CI lower	95%CI upper	P-Value
tunnel technique (ref subcutaneous)	1.408	0.969	2.046	0.0729
Age category 50-79 vs 0-49	1.749	0.85	3.599	0.1287
Age category 80+ vs. 0-49	2.193	1.213	3.965	0.0094
sex (ref male)	1.668	1.148	2.423	0.0073
Aspirin discharge (ref no)	1.762	1.108	2.801	0.0166

P<0.05

- Age category (old vs. young)
- Sex
- Aspirin at discharge

- Kaplan-Meier survival analyses for *primary patency days* & *amputation free survival* conducted
 - Demonstrated no difference between tunneling technique (LogRank $p>0.05$)

Conclusion

- Tunneling choice in patients undergoing infrainguinal bypass with SSGSV for CLTI, does not convey a clinical advantage for important surgical outcomes of patency (primary, primary-assisted and secondary) or amputation free survival at 1-year follow-up
 - **but** co-morbidities, surgical site complications (i.e., infection), increased age, and need for antiplatelet/anticoagulation seem to predict poorer outcomes

Thank you,

Questions?

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