

Outcomes of Open and Endovascular Lower Extremity Revascularization in Current Smokers With Intermittent Claudication and Critical Limb Ischemia



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Objective: Active smoking is a frequent deterrent to performance of elective lower extremity revascularization. In this study, we aimed to examine perioperative outcomes of endovascular lower extremity revascularization (LEE) and open lower extremity bypass (LEB) in active smokers with claudication or critical limb ischemia (CLI).

Methods: Active smokers undergoing LEE or LEB from 2011 to 2014 were identified in the American College of Surgeons National Surgical Quality Improvement Program targeted vascular data set. Patient demographics, comorbidities, anatomic features, and perioperative outcomes were compared between LEE and LEB procedures. Subgroup analyses were then performed for patients undergoing revascularization for claudication vs CLI.

Results: A total of 4706 cases were identified, of which 1497 were LEE (55.6% for CLI, 13.4% for below-knee disease) and 3209 were LEB (68.9% CLI, 34.7% below-knee disease). Patients undergoing LEE had higher rates of hypertension, end-stage renal disease, and diabetes. LEE patients also had higher rates of prior percutaneous interventions (22.7% vs 17.2%) and preoperative antiplatelet therapy (82.3% vs 78.7%). On risk-adjusted multivariate analysis (Table), LEE had a higher need for reintervention than LEB (adjusted odds ratio [AOR], 1.52; 95% confidence interval [CI], 1.08-2.13; $P = .02$) but fewer wound complications (AOR, 0.32; 95% CI, 0.23-0.45; $P < .01$). There were no statistically significant differences in 30-day mortality, myocardial infarction, or stroke or major amputation between the two groups. In the claudication subgroup, the rate of myocardial infarction or stroke was significantly lower in the LEE group compared with open bypass (AOR, 0.17; 95% CI, 0.03-0.83; $P = .03$), although this difference was not found in the CLI subgroup. In addition, whereas there was a trend toward less progression to major amputation among claudicants undergoing LEE, in patients with CLI, LEE appeared to confer a higher risk of amputation compared with open bypass. A summarized overview of the results can be found in the Table.

Conclusions: In active smokers, open bypass carries with it higher rates of wound complications compared with endovascular procedures, although they require fewer reinterventions and have similar cardiovascular risk profiles. However, in claudicants undergoing endovascular revascularization, cardiovascular risk is significantly lower than with open bypass, and it should be considered in offering intervention.

Table. Risk-adjusted outcomes of endovascular lower extremity revascularization (LEE) vs open lower extremity bypass (LEB) in active smokers

Variable	OR	95% CI	P value
30-Day mortality	0.444	0.154-1.282	.133
Claudication	—	—	—
CLI	0.574	0.183-1.803	.342
Major amputation	1.542	0.940-2.528	.086
Claudication	0.657	0.157-2.750	.565
CLI	1.583	0.931-2.691	.090
Major reintervention	1.518	1.080-2.134	.016
Claudication	2.034	1.012-4.087	.046
CLI	1.375	0.931-2.031	.110
Wound infection or complication	0.318	0.225-0.450	<.001
Claudication	0.226	0.111-0.459	<.001
CLI	0.364	0.243-0.543	<.001
MI or stroke	0.569	0.302-1.073	.081
Claudication	0.166	0.033-0.829	.029
CLI	0.748	0.369-1.519	.422

CI, Confidence interval; CLI, critical limb ischemia; MI, myocardial infarction; OR, odds ratio.

Medical Therapy and Intervention Do Not Improve Uncomplicated Isolated Mesenteric Artery Dissection Outcomes Over Observation Alone



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Objective: Isolated dissection of the mesenteric vessels is rare but increasingly recognized. This study aimed to evaluate patient characteristics, treatment patterns, and outcomes of mesenteric dissection using multi-institutional data.

Methods: All patients at participant hospitals between January 2003 and December 2015 with dissection of the celiac artery (or its branches) or dissection of the superior mesenteric artery were included. Patients with an aortic dissection were excluded. Demographic, treatment, and follow-up data were collected. The primary outcomes included late vessel thrombosis (LVT) and aneurysmal degeneration.

Results: Twelve institutions identified 229 patients (220 with complete treatment records) with a mean age of 55 ± 12.5 years. Median time to last follow-up was 15 months (interquartile range, 3.8-32). Most patients were men (82% vs 18% women) and symptomatic at presentation (162 vs 65 asymptomatic). Isolated superior mesenteric artery dissection was more common than celiac artery dissection ($n = 146$ and 70 , respectively). Concomitant dissection of both arteries was rare ($n = 13$). Primary treatment was medical in 146 patients with oral anticoagulation or antiplatelet therapy ($n = 76$ and 70 , respectively), whereas 55 patients were observed. Six patients developed LVT and 22 patients aneurysmal degeneration (2.7% and 10%, respectively). For symptomatic patients without evidence of ischemia ($n = 134$), there was no difference in rate of LVT with medical therapy compared with observation alone (5 vs 0; $P = .35$). No asymptomatic patient ($n = 64$) had an episode of LVT at 5 years. Aneurysmal degeneration rates were 7.8% overall but did not differ among patients treated with medical therapy or observation alone ($P = .82$). Surgical or endovascular intervention was performed in 18 patients (3 ischemia, 13 pain, 1 aneurysmal degeneration, 1 asymptomatic). Excluding the patients treated for ischemia, there was no difference in LVT between patients treated by intervention and those treated medically (one vs five; $P = .57$).

Conclusions: Isolated mesenteric dissection has a relatively benign course for most patients. Use of medical therapy did not improve outcomes over observation alone. Long-term follow-up is recommended because occasional patients develop aneurysmal degeneration or ischemia that may require repair.

Contemporary Outcomes of Elective Iliac Vein Stenting in Chronic Venous Occlusive Disease



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Background: Patients with chronic venous occlusive disease present with a spectrum of findings ranging from leg edema to severe nonhealing ulceration and venous claudication. Angioplasty with iliac vein stenting has been shown to significantly improve clinical outcomes. Previous studies have included thrombotic and nonthrombotic lesions in analysis of outcomes in iliac vein stenting for chronic venous disease. Our objective was to evaluate our approach to recanalization and stenting in the treatment of thrombotic venous occlusive disease and to report the outcomes.

Methods: A prospectively maintained database was retrospectively reviewed. All patients with symptomatic thrombotic iliac vein lesions between 2008 and 2015 were analyzed. Nonthrombotic iliac vein lesions were excluded from analysis. Criteria for intervention included thrombotic stenosis or occlusion of the iliac vein or vena cava in the setting of symptomatic chronic venous disease of clinical, etiologic, anatomic, and pathophysiologic (CEAP) class 3 or greater. Presenting CEAP score, postintervention CEAP score, primary and secondary patency, wound healing, and clinical outcomes were recorded.

Results: Of the 32 patients evaluated, 38.7% had a hypercoagulable disorder; 67.7% were prescribed anticoagulation before intervention. Symptoms included pain/swelling (100%); venous claudication (80.7%); or CEAP class 3 (78%), class 4/5 (9%), or class 6 (13%). All patients were presenting with either subacute (>30 days [37.5%]) or chronic (>90 days [62.5%]) thrombosis. Successful intervention was performed in 31 (97%) by angioplasty/stent, with adjunctive lysis in 62.5%. Overall clinical improvement occurred in 87.5% and a decrease in CEAP score in 65.4%. Complete clinical resolution was obtained in 46.8% of all patients. Healing of ulceration occurred in 60% of patients with a median heal time of 3 months (compared with 12 months median preoperatively). Complications included three early reocclusions and no mortality or pulmonary embolism or clinically significant hematoma. Primary and secondary 1-year patency was 64% and 71% overall (mean follow-up, 14.7 months).

Conclusions: Treatment of chronic venous occlusive disease with iliac vein stenting is associated with excellent 1-year patency rates, healing of venous ulcers, and a significant reduction in symptoms and CEAP score.