Thirty-day survival rate was 96.2% (95% confidence interval [CI], 90.9-100), and 1-year survival rate was 75.1% (95% CI, 62.8-87.4) as seen in Fig 1. There were no intraoperative deaths. Thirty-day primary patency rate was 96% (95% CI, 90.7-100.0), and 1-year primary patency rate was 88.8% (95% CI, 79.4-98.2). Seven patients (14%) developed nonocclusive thrombus within the IVC. Mortality was known to be due to oncologic progression in 29% of deceased patients as seen in Fig 2.

Conclusions: IVC reconstruction is a safe option for patients requiring IVC resection during oncologic surgery as evidenced by 1-year survival of 75% and 1-year primary patency approaching 90%. Overall rate of postoperative thrombus development was low and similar across all groups. In the management of primary and secondary retroperitoneal malignant disease with IVC infiltration, IVC reconstruction should be considered to achieve appropriate oncologic resection while minimizing possible complications from caval interruption.

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Effect of Etiology and Inflow on Outcomes of Endovascular Recanalization for Nonmalignant Inferior Vena Cava Occlusion

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Objective: The aim of this study was to determine factors affecting outcomes of inferior vena cava (IVC) recanalization for nonmalignant obstruction, with focus on venous inflow and etiology of IVC occlusion.

Methods: Data from consecutive patients undergoing IVC recanalization between January 2001 and December 2017 were retrospectively reviewed. Patients were grouped by etiology of IVC obstruction, including post-thrombotic (PT), retroperitoneal fibrosis (RPF), and hypoplasia (HP). Patency of the femoral, deep femoral, and great saphenous veins was evaluated; the venous inflow was graded, assigning a point to each for stenosis or occlusion, for a total possible unilateral score of 3 and a composite score of 6. A score of 6 indicated no inflow stenosis or occlusion, whereas a score of 0 indicated disease of all 6 inflow veins. Primary outcomes included primary, primary assisted, and secondary patency rates.

Results: There were 114 patients during the 18-year period (64% male; mean age, 42 ± 15 years). Etiology was PT in 96 (84%), RPF in 5 (5%), and HP in 13 (11%) patients. Clinical, Etiology, Anatomy, and Pathophysiology classes included 3, 4a, 4b, 5, and 6 in 23, 17, 3, 11, and 23 patients,

respectively. Forty-four (38%) patients had an IVC filter, all of whom had PT etiology, and 33 (29%) had a thrombophilia. Inflow grading was 6 in 20 (18%), indicating no disease; 4 in 36 (32%); and 3 or less in 32 (30%). There was no mortality related to the procedure. Periprocedural complications occurred in 11% of patients. Median follow-up was 15.2 months (interquartile range, 6.4-35.8 months; maximum, 141.6 months). Kaplan-Meier analysis of primary, primary assisted, and secondary patency in the entire cohort at 1 year and 5 years was 78%, 85%, and 95% and 66%, 85%, and 95%, respectively. Early failures occurred in 12 PT, 2 HP, and 0 RPF patients ($P = .94$) No factors studied, including female sex, etiology of IVC occlusion, or thrombophilia, affected patency ($P > .05$). Median venous inflow in PT, RPF, and HP was 4, 5.5, and 5, respectively. Patients with grade 0 to 3 had patency rates similar to those of patients with grade 4 to 6 ($P > .05$). Presence of an IVC filter crushed aside during IVC stenting did not adversely affect stent patency.

Conclusions: Midterm results of endovascular recanalization are excellent regardless of the etiology of IVC occlusion. This cohort was predominantly PT with small numbers of RPF and HP, resulting in insufficient statistical power to demonstrate the effect of venous inflow on patency.

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Clinical Response to Combination Therapy in the Treatment of Varicose Veins

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Objective: Varicose vein ablation procedures are being performed with increasing frequency; however, there is a lack of consensus on the relative efficacy of combined treatment of saphenous incompetence and symptomatic varicosities vs a staged approach. In this study, we examined the impact on symptom severity when a procedure to eliminate varicosities is added to standard endovenous saphenous ablation.

Methods: The American Venous Registry Varicose Vein Module was established by the American Venous Forum in 2010 and collected data from 53 physicians from 37 clinical centers during a 2-year period. Our analysis includes patients with Clinical, Etiology, Anatomy, and Pathophysiology (CEAP) class $C2_S$ disease severity and without prior treatment. Combination therapy (CT) is defined as the use of a varicosity-treating secondary procedure (stab phlebectomy or injection of sclerosant into varicosity) in combination with endovenous saphenous vein ablation. Unimodal therapy (UT) is defined as endovenous saphenous vein ablation

Table. Compared with unimodal therapy (*UT*), combination therapy (*CT*) is associated with an additional 1-point reduction in Venous Clinical Severity Score (*VCSS*) on bivariate analysis

	Total (N = 1031)	UT (n = 478)	CT (n = 553)	*P* value
Day of follow-up	29.7 (8.23)	25.9 (0.40)	32.9 (6.20)	<.001[b]
Age, years				<.001[a]
<45	253 (24.6)	85 (17.9)	168 (30.4)	
45-55	221 (21.5)	103 (21.6)	118 (21.4)	
55-64	269 (26.2)	117 (24.6)	152 (27.5)	
>64	285 (27.7)	171 (35.9)	114 (20.7)	
Female	733 (71.1)	342 (71.6)	391 (70.7)	.766[a]
White	741 (71.9)	379 (79.3)	362 (65.5)	<.001[a]
Initial VCSS	6.68 (3.87)	7.28 (4.52)	6.15(3.10)	<.001[b]
VCSS change	−4.06 (3.27)	−3.50 (3.95)	−4.54 (2.46)	<.001[b]

Categorical variables are presented as number (%). Continuous variables are presented as mean (standard deviation).
[a]Pearson χ^2.
[b]Student *t*-test.