Objective
This study was undertaken to better characterize the secondary interventions after venous stenting for chronic, proximal venous outflow obstruction (PVOO).

Methods
A retrospective study of 486 patients [mean age 59.7 years (range 19 to 91 years, SD 13.5 years), 56% female, 91% had edema, CEAP class III 66.7%, CEAP class VI 11.1%, bilateral iliac stents placement 58%, 30 day follow-up 89.4%, mean follow-up duration >320 days] who underwent 545 consecutive venous stenting for chronic PVOO between January 2013 and October 2016 at single institution. Wilcoxon-Mann-Whitney tests used in categorical variables (comorbidities). Simple Logistic regressions for interval variables (total stent length). Multiple logistic regressions used to analyze 6-month, 1-year and 3-year re-intervention rates.
Results
Re-intervention rates were 5.7% (n=31), 10.8% (n=59) and 16.5% (n=90) at 6 months, 1 year and 3 years. The most common findings during re-interventions: new or previously missed lesions in the native vessel (n=56, 10.3%) and in-stent stenosis (n=24, 4.4%). Other findings: contralateral iliac venous outflow obstruction due to unilateral IVC iliac stents 3.5% (n=19), stent malposition 2.4% (n=13), and acute stent thrombosis 1.5% (n=8). Univariate analysis revealed post-thrombotic state (28.2% vs. 12.7%, p < 0.001), hypertension (20.8% vs. 12.9%, p = 0.017), diabetes (26.1% vs. 14.5%, p = 0.003), higher CEAP classes (OR: 1.28, p = 0.017) were associated with a higher risk of re-intervention. Patients who had larger stent diameters (18-20mm vs 16 mm) (OR: 0.94, p < 0.001) and a higher number of stents placed during initial intervention (OR: 0.63, p = 0.001) were at a lower risk of re-intervention. Multivariate analysis showed that patients who are post-thrombotic (OR: 2.35, p = 0.001), diabetic (OR: 1.85, p = 0.033) and with smaller stent diameters (OR: 1.06, p = 0.003) were at a higher risk of re-intervention.

Conclusions
Assessment for three years after vein stenting for chronic PVOO demonstrates an acceptable incidence of re-interventions. Stenosis in a native vein, either new or missed from initial stent procedure, was the most common finding. Impairment of contralateral venous outflow infrequently complicated unilateral IVC/common iliac stents placed for May Thurner. Acute stent thrombosis was an infrequent finding. Many re-interventions seemed preventable with modifications in the initial procedure.

Author Disclosure Block: