

Evidence Discussion (PVI.300.A)

Treatment of left renal vein compression (Nutcracker Syndrome)

Left renal vein compression typically occurs secondary to compression of the renal vein as it crosses over the aorta and under the superior mesenteric artery. This leads to left kidney venous hypertension from venous outflow obstruction and may result in left flank pain, hematuria and proteinuria. Imaging including duplex ultrasound, CTV/MRV or invasive venography demonstrates a dilated renal vein proximal to the aorta and significant stenosis of the vein as it crossed the aorta. Large left sided retroperitoneal venous collaterals are usually present.

Due to the external compression, significant size differential of the vein and risk of stent migration initial endovascular management is not recommended. Surgical management with Left renal vein translocation or bypass is the preferred initial management for symptomatic left renal vein compression.

Venous angioplasty and/or stenting may be indicated for recurrent stenosis after surgical decompression.

References

1. Erben Y, Gloviczki P, Kalra M, Bjarnason H, Reed NR, Duncan AA, Oderich GS, Bower TC. Treatment of nutcracker syndrome with open and endovascular interventions. J Vasc Surg Venous Lymphat Disord. 2015 Oct;3(4):389-396. doi: 10.1016/j.jvsv.2015.04.003. Epub 2015 Jun 30. PMID: 26992616