Venous Stenting in Women: What Have We Learned So Far?

Patient-specific factors to consider and key unknowns to be explored.

With Erin H. Murphy, MD, FACS

How are the demographics of your venous stenting practice distributed by sex?

Women comprise roughly two-thirds of my venous stenting practice. Several factors underlie a higher prevalence of deep venous disease in women. At the foundation, anatomic factors make May-Thurner more common in women. During maturation of the female pelvis, lumbar lordosis increases and pushes the lower lumbar vertebra forward, which in turn increases compression of the left iliac vein by the right iliac artery. This lordosis is even further increased in pregnancy. Although May-Thurner anatomy itself does not translate into a need for treatment, a percentage of these patients develop scarring and a pathologic condition that can be improved with venous stenting.

A subset of May-Thurner patients also develop blood clots. In these scenarios, patients almost universally have evidence of a precursor, severe May-Thurner obstruction that then progresses from an asymptomatic state to a pathologic state of deep vein thrombosis (DVT). Progression is influenced by one or often multiple factors that alter the patient's coagulation profile and increase the risk of thrombosis. Certain risk factors, including oral contraceptive use and pregnancy, may also explain the higher proportion of women presenting with extensive left DVT that eventually requires stenting during their treatment course, either in the acute or chronic state.

It is also important to note that symptoms of venous hypertension are rarely isolated to one specific underlying cause. For instance, symptoms of venous hypertension may be attributable to a combination of underlying venous compression, untreated superficial venous reflux, pelvic congestion, and medical factors. The higher incidence of some of these contributory problems in women can magnify the effect of the underlying obstructive pathology and escalate symptoms to the point of seeking care, at which time treatment of venous obstruction may become a part of the treatment plan.

How does your typical workup for a female patient for possible venous stent placement differ from that of a male patient?

My typical workup for a patient with suspected underlying venous compression includes an iliac ultrasound, a reflux DVT scan of the legs, and a CT venogram of the abdomen and pelvis. This allows me to evaluate the patient's venous system in entirety while reviewing medical comorbidities and decide which components are truly pathologic and most contributory to the patient's symptoms. This analysis guides a treatment plan individualized to the patient.

Although the workup and imaging tests are the same for men and women, we do look for components of pelvic venous reflux that are clinically contributing. In addition, because women have a significantly higher degree of May-Thurner anatomy and most are asymptomatic, this dictates a need for a more discerning eye when deciding whether a "lesion" is truly pathologic and not anatomic.

CT also helps screen for pelvic pathology including fibroids and gynecologic malignancies that can cause iliac obstruction.

How does female patient age factor in?

The age of the patient, as it relates to childbearing plans, comes into play when evaluating female patients for stenting. Patients with May-Thurner without evidence of postthrombotic disease are often encouraged to delay treatment until after childbearing if symptoms can be

managed conservatively without impacting their quality of life. To date, I am unaware of any untoward stent compression or stent occlusion events during pregnancy that would steer my recommendations; however, there is certainly a lack of data to this end. Currently, if a patient receives a venous stent and proceeds with pregnancy, I advise treatment with enoxaparin and monitoring throughout the pregnancy and postpartum period.

And whether the patient is pregnant?

Treatment of venous obstruction during pregnancy is entertained only in the setting of extensive iliofemoral DVT during pregnancy. However, although thrombolytics and enoxaparin are sometimes used, stenting is often delayed until the postpartum period. This is secondary to the added case complexity and fetal risk and radiation exposure, although the use of intravascular ultrasound may limit radiation-specific risk if intervention is felt to be unavoidable.

Although unlikely sufficiently powered to this determination, have there been any notable sex-based differences in outcomes from the pivotal trials to date?

No notable gender-specific differences have been noted to my knowledge.

What are the key unknowns in venous stenting in women, and how might they be answered/addressed?

The key unknown is how to determine if obstructive disease in nonthrombotic patients is in fact anatomic or pathologic and where the threshold lies for intervention that results in improvement of patient symptoms. Although this is a clear point for many patients with acute or chronic thrombotic disease, outcomes after intervention for nonthrombotic disease remain somewhat unpredictable. In addition, management of women with stents during pregnancy is important because many young women are now falling in this category. ■

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