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INVITED COMMENTARY

Seshadri Raju, MD, FACS, *Jackson, Miss*

The Iguazu Falls in Brazil are one of the natural wonders of the world. At close quarters, the falls are obscured in a shroud of spray mist, its fearsome power intimated by only a thunderous roar. A perpetual rainbow dances across the narrow chasm, named the Devil's Throat by early settlers. The spectacle is beguiling, giving no hint of the danger lurking below. There is some commonality, however tendentious, between *Cataratas do Iguaçu* and iliac-caval flow. Both display "supercritical flow," one of many unique features in venous hemodynamics. With some poetic license, one can even imagine the iliac-caval junction as an anatomic equivalent of the Devil's Throat. The complex stenosis underneath the artery is not coronal but spiral, extending for a variable distance on either side from the confluence. It is all but impossible to place currently available stents "precisely" to cover the lesion. Incomplete coverage will result unless the stent is extended well into the vena cava. Inadequate caval extension will result in coning of the end or retraction of the stent. Adequate extension (3-5 cm) into the vena cava will cover the lesion but result in partial chronic jailing of the contralateral iliac with a significant incidence of deep venous thrombosis.[1] The Wallstent (Boston Scientific, Marlborough, Mass), which is widely used in this location, is prone to many of these deficiencies and has poor radial strength to withstand the compressive force between the artery and the vertebral body behind. Because of the short available lengths, a stack of two or three overlapping members (cost!) is generally required in a typical case. In-stent restenosis is a problem as well, although it is not seen as often as in arterial deployments. Despite its many faults, the primary assisted and

secondary patency of Wallstents is astonishingly high (≈90%), with a low occlusion rate (≈3%) in worldwide experience. The shortcomings of the stent are mainly reflected in a high reinterventional rate (≈25%), with a primary patency rate 30% to 40% lower than assisted primary and secondary patency. A stent specifically designed for the iliac-caval confluence may improve performance and cost over the current genre. Comparative performance of new designs should be measured on the reinterventional rate rather than by secondary patency, which is difficult to improve on for the Wallstent, which already has high figures.

The Maastricht team, noted for its many contributions in this field, report short-term results of a dedicated venous stent with an innovative design. Whereas secondary patency is satisfactory, the reinterventional and occlusion rates remain high. The study was hampered by local practice limitations; intravascular ultrasound (IVUS) could not be used, forcing sole reliance on venography, leading to understenting in the series. In a blinded comparison of venography and IVUS, there was a difference of nearly one vertebral body in locating the iliac-caval confluence, a crucial step in proper stent placement.[2]

The utility of the new design remains to be evaluated on the basis of long-term outcome of stents placed with IVUS control.

The opinions or views expressed in this commentary are those of the authors and do not necessarily reflect the opinions or recommendations of the Journal of Vascular Surgery: Venous and Lymphatic Disorders or the Society for Vascular Surgery.

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