

## CASE REPORT

# The GORE® VIABAHN® Endoprosthesis for AV Access Revision

BY JOHN R. ROSS, MD

A 74-year-old patient presented with a thrombosed graft and outflow stenosis at the venous anastomosis approximately 6 months after receiving an upper arm arteriovenous (AV) graft for hemodialysis access. The graft was originally required to be placed in the patient's upper arm after it was determined that he was not a suitable candidate for AV fistula creation due to inappropriate venous vasculature. In this case, placement of an AV graft was the preferred method for AV access creation.

Upon returning with graft thrombosis and outflow stenosis, a superior venacavogram, axillary venogram, subclavian venogram, shuntogram, and a selective brachial arteriogram were performed. Thrombectomy was performed with the AngioJet (Boston Scientific Corporation) device to clear the clot within the graft. Severe outflow stenosis of approximately 90% was noted and initially treated with balloon angioplasty using a 7 mm x 8 cm angioplasty balloon. The high-grade stenosis was refractory to this treatment, which persisted even after further balloon inflation of the lesion with an 8 mm x 4 cm angioplasty balloon. The results were suboptimal with rebounding of approximately 50% after use of the second angioplasty balloon. We identified that the stenosis on the graft vein anastomotic and perianastomotic area was going to be compromised. As a result, placement of a GORE® VIABAHN® Endoprosthesis was selected to prolong functionality of the AV graft circuit.

To ensure good long-term results, careful selection of appropriate landing zones and device sizing was performed. In this case, a valve was present near the venous anastomosis. The GORE VIABAHN Endoprosthesis should be landed well before a valve, or if a sufficient landing zone with at least 1 cm of healthy vein prevents landing before the valve, the device should cross the valve completely. Landing immediately before a valve increases the likelihood of compromised patency. With respect to diameter selection, the GORE VIABAHN Endoprosthesis is sized to the venous outflow end of the graft to ensure sufficient wall apposition for anchoring and reducing the risk of migration. The recommendation is oversizing by 5% to 20%. Wall apposition to the vein at the outflow of the GORE VIABAHN Endoprosthesis is not required,



Figure 1.



Figure 2.

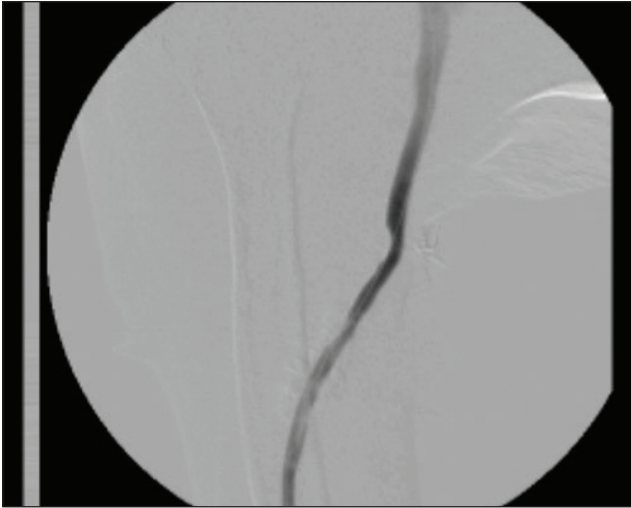


Figure 3.

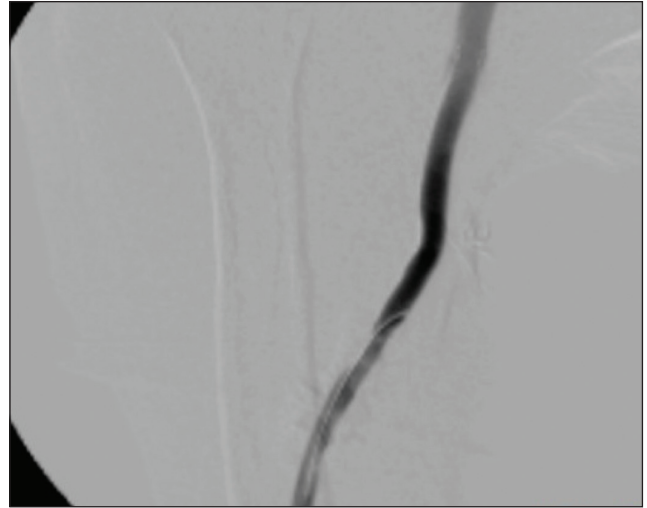


Figure 5.

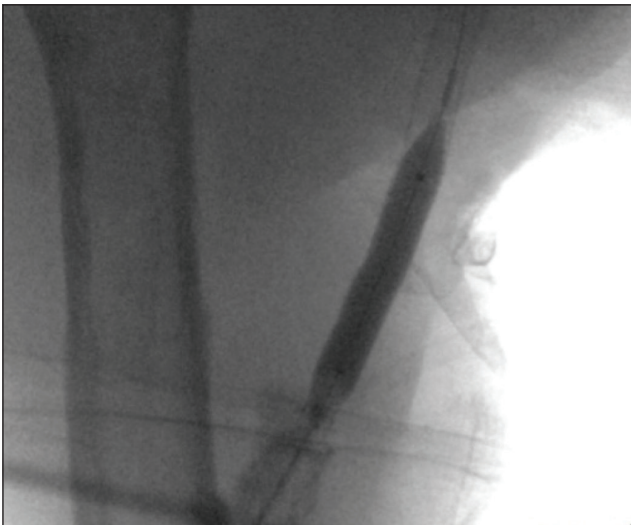


Figure 4.

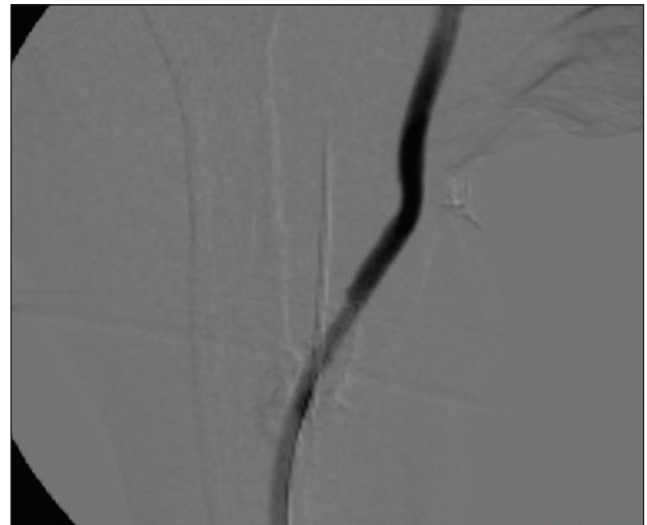


Figure 6.

and the device can be smaller in diameter than the outflow vein. A smaller device than the outflow vein allows for excellent flow through the device and better outcomes. In this case, an 8 mm x 10 cm GORE VIABAHN Endoprosthesis graft was selected and then placed across the outflow stenosis, which provided sufficient length to cover the outflow stenosis as well as extending to a landing zone that was not compromised by a valve. Postdilation was performed following successful device placement. A plug was pulled and macerated. An excellent thrill and bruit were restored to the access with excellent circulation to the hand.

## DISCUSSION

This case illustrates the type of patient who can most benefit from the use of a stent graft for the treatment of venous outflow stenosis, such as those with recurrent problems or refractory type issues associated with

balloon angioplasty of the graft-vein anastomosis. These patients seem to respond very well to the use of stent grafts. In the current case, this is the characteristic vein-graft anastomotic stricture or perianastomotic stricture, where stent grafts can be expected to provide very good outcomes over a longer period compared with simple balloon angioplasty. ■

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*Disclosures: Physician training for Gore & Associates.*