Advantages and Limitations of the Gore Thoracic Endograft for Treating Thoracic Aortic Lesions

NOTES

Edward B. Diethrich, MD, Phoenix, AZ

Although the Gore TAG thoracic endoprosthesis was approved by the US Food and Drug Administration in March 2005 for the treatment of isolated aneurysms of the descending thoracic aorta, the Arizona Heart Institute has been extensively involved with the use of this device for the treatment of diverse aortic pathologies since 1999 as part of a single-center, investigational device exemption study. As a result, we have been able to gain a considerable appreciation for the advantages and limitations of this particular endoprosthesis.

Methods

After obtaining institutional review board approval, 158 high-surgical-risk patients underwent attempted delivery of a Gore TAG thoracic endoprosthesis between February 2000 and July 2004. Indications for study enrollment were atherosclerotic aneurysm (n = 76), aortic dissection (n = 36), penetrating aortic ulcer (n = 15), contained rupture (n = 11), pseudoaneurysm (n = 10), traumatic aortic injury (n = 5), aortobronchial fistula (n = 4), and aortic coarctation (n = 1).

Results

The device was successfully delivered in 156 patients (98.7%). Mean patient age was 72 ± 12.1 years. Three patients (1.9%) developed transient parapareses following graft deployment and 1 patient (0.6%) developed paraplegia. Whereas postimplantation endoleaks were observed in 18 patients (11.5%), only 12 patients required reintervention. Thirty-day mortality was 3.8% (6 of 156). Mean follow-up was 21.5 ± 18.8 months, and the overall mortality was 17.3% (27 of 156).

Conclusions

The Gore Tag thoracic endoprosthesis performed very well and was easy to deploy. However, the large-bore caliber of the delivery sheaths generated significant problems in patients with severely calcified iliac vessels. In addition, the transition area on the endoprosthesis between the proximal-tip and the polytetrafluoroethylene-sheathed prosthesis is not smooth. Future designs should allow for a smoother transition between the proximal tip and the graft to prevent intimal damage and limit the incidence of iatrogenic stroke caused by scraping damage to the aortic arch. Finally, smaller device diameters are needed to safely treat traumatic aortic transections. Continued surveillance is essential to determine the long-term durability of this device.