Selected Abstracts from the November Issue of the Journal of Vascular Surgery☆

Editors: Anton N. Sidawy and Bruce A. Perler

Durability of the Endurant stent graft in patients undergoing endovascular abdominal aortic aneurysm repair

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Objective: Several studies have confirmed the excellent early performance of the Endurant (Medtronic Endovascular, Santa Rosa, Calif) endoprosthesis to treat abdominal aortic aneurysms (AAAs). However, data about the long-term durability of the device are still lacking. We conducted this prospective two-center single-arm study to assess the late outcomes of the endograft in patients undergoing AAA repair.

Methods: An intention-to-treat analysis was performed for all comers with AAAs who were implanted with an Endurant endograft between November 2007 and December 2010. Clinical and radiologic data were prospectively collected and analyzed. The primary end point was any AAA-related reintervention. Secondary end points were overall mortality, aneurysm shrinkage, all types of endoleak, and device-related complications.

Results: During the study period, 273 patients underwent implantation of the Endurant stent graft. The median follow-up time for the primary end point was 42 months (interquartile range, 30.7-50.7). AAA-related reinterventions were required in 26 patients (10%), resulting in a reintervention-free probability of 93%, 90%, and 87% at 3, 4, and 5 years, respectively. The leading cause for reintervention was iliac limb occlusion (n = 10). Only one AAA-related death (0.3%) was reported within an overall mortality of 29% (n = 78). The median aneurysm shrinkage was 9 mm (interquartile range, 3-15). Five type I (2%) and one type III (0.4%) endoleaks were identified. No proximal and two distal limb migrations (1%) were observed.

Conclusions: Our study confirms late durability of the Endurant endoprosthesis for AAA repair, with very encouraging freedom from reintervention rates and overall outcomes.

Results of the endovascular abdominal aortic aneurysm repair using the Anaconda aortic endograft

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Objective: The objective of this study was to evaluate early and late results of the Anaconda aortic endograft (Vascutek, Terumo, Inchinnan, Scotland) in a single-center experience.

Methods: From September 2005 to March 2012, patients underwent endovascular aortic repair for infrarenal aortic aneurysm (AAA) with Anaconda endograft were prospectively enrolled in a dedicated database. Demographic and aortoiliac morphological data were considered. Preoperative planning was based on thoracoabdominal and pelvic computed tomography angiography. Follow-up included duplex ultrasound or computed tomography angiography at 1, 6, an 12 months and yearly thereafter. Primary end points were technical success, early and late primary and primary assisted clinical success (CS), overall and AAA-related survival and freedom from reinterventions. Secondary end points were endoleaks (ELs), stenoobstructive iliac leg complications, and AAA shrinkage.

Results: An Anaconda endograft was implanted in 177 patients (male 94%; mean age, 73.3 ± 7.4 years; American Society of Anesthesiologists class III-IV, 85% and 9%, respectively). The mean AAA diameter, neck length, and diameter were 55 ± 9.7 mm, 26.7 ± 10 mm, and 23 ± 2.3 mm, respectively. There was an aortic neck angle >60° in 44 (25%) patients. Iliac angles >90° were observed in 152 (43%) iliac axes. Technical success was 98.9%. Early CS was 96%. Mean follow-up was 33 ± 23.3 months. Late assisted CS was 97.7%. Survival at 12, 24, and 36 months was 96.4%, 89%, and 86.2%, respectively. There was only one case of late AAA-related mortality. Freedom from reintervention was 94%, 92%, and 85% at 12, 24, and 36 months, respectively. Three (1.7%) conversions occurred during follow-up. There were 14.1% ELs at the completion angiography (EL Ia, 1.1%; EL II, 13%). Late ELs were 20.2% (EL Ia, 1.1%; EL Ib, 2.2%; EL II, 16.9%). Iliac leg complications occurred in 5.6% of the cases. An AAA shrinkage >5 mm was observed in 130 (73.4%) patients. In 7 (4%) cases there was an AAA enlargement >5 mm.

Conclusions: Data in our series demonstrate that the Anaconda endograft has good early and late results in the treatment of AAA.

Alternative access techniques with thoracic endovascular aortic repair, open iliac conduit versus endoconduit technique

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☆Full articles available online at www.jvascsurg.org

1078-5884/$ — see front matter
http://dx.doi.org/10.1016/S1078-5884(14)00556-5

Background: Iliac artery endoconduits (ECs) have emerged as important alternatives to retroperitoneal open iliac conduits (ROICs) to aid in transfemoral delivery for thoracic endovascular aortic repair (TEVAR). We present, to our knowledge, the first comparative analysis between these alternative approaches.
Methods: All patients undergoing TEVAR with either ROIC (n = 23) or internal EC (n = 16) were identified. The mean age of the cohort was 72.4 $\pm$ 11.5 years (82.1% female). Device delivery was accomplished in 100% of cases. The primary outcome was the presence of iliofemoral complications, which was defined as: (1) the inability to successfully deliver the device into the aorta via the ROIC or EC approach; (2) rupture, dissection, or thrombosis of the ipsilateral iliac or femoral artery; and/or (3) retroperitoneal hematoma requiring exploration and evacuation. Secondary outcomes were 30-day mortality and rates of limb loss, claudication, or revascularization.
Results: At a median follow-up of 10.1 months, the incidence of iliofemoral complications was less for the EC approach compared with the ROIC technique (12.5% vs 26.1%; P = .301). No patients sustained limb loss. Revascularization was performed in two patients after ROIC. Lower extremity claudication occurred in one patient after EC. Early mortality was seen in one patient who underwent EC. Two-year Kaplan-Meier survival for the entire cohort was 74.4%, and did not differ between groups (ROIC, 78.3% vs EC, 68.8%; P = .350). Two-year Kaplan-Meier freedom from limb loss, claudication, or revascularization did not differ between the two approaches (ROIC, 91.3% vs EC, 93.8%; P = .961).
Conclusions: Results of this early comparative evaluation of alternative access routes for TEVAR suggest that an EC approach is safe, effective, and associated with low rates of early mortality and late iliofemoral complications. In selected patients, the EC may be considered an appropriate delivery route for transfemoral TEVAR.

Outcomes of carotid endarterectomy versus stenting in comparable medical risk patients

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Objective: In medically high-risk patients the choice between carotid artery stenting (CAS) and carotid endarterectomy (CEA) can be difficult. The purpose of this study was to compare risk-stratified outcomes of CAS and CEA.
Methods: Patients who underwent isolated primary CEA (n = 11,336) or primary CAS (n = 544) at 29 centers in the Vascular Study Group of New England were analyzed (2003-2013); patients with previous ipsilateral CEA or CAS, or concomitant coronary artery bypass graft were excluded. A medical risk score based on predicted 5-year mortality was developed for each patient using a Cox proportional hazards model. Patients in the highest risk score quartile were termed high-risk (vs normal-risk for the other three quartiles). Medically high-risk patients had a 5-year survival of 65% and comprised 23% of CEA and 25% of CAS patients. Risk-stratified outcomes were compared within neurologically symptomatic and asymptomatic patients.
Results: Among asymptomatic patients, rates of in-hospital stroke and/or death were not different between CAS and CEA in normal and high-risk cohorts, ranging from 0.7% in normal-risk CEA patients to 1.6% in high-risk CAS patients. In symptomatic patients, significantly worse outcomes were seen with CAS compared with CEA in normal-risk and high-risk patients. Normal-risk symptomatic patients had a stroke or death rate of 1.3% with CEA, but 5.2% with CAS ($P < .01$). In high-risk symptomatic patients, the stroke or death rate was 1.5% with CEA and 9.3% with CAS ($P < .01$). No significant differences were seen between asymptomatic CEA and CAS within risk strata across secondary outcome measures of stroke, death, or myocardial infarction, and ipsilateral stroke, major stroke, or death. However, symptomatic high-risk CAS patients had significantly greater rates of all secondary outcomes compared with CEA except death, and symptomatic normal-risk CAS patients had only significantly greater rates of death and stroke, death, or myocardial infarction.
Conclusions: In the Vascular Study Group of New England, asymptomatic normal- and high-risk patients do equally well after CEA or CAS. However, normal- and high-risk symptomatic patients have substantially worse outcomes with CAS compared with CEA. High medical risk alone might be an insufficient indication for CAS in symptomatic patients.

Factors associated with surgical site infection after lower extremity bypass in the Society for Vascular Surgery (SVS) Vascular Quality Initiative (VQI)

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Background: Surgical site infection (SSI) is a major source of morbidity after infrainguinal lower extremity bypass (LEB). This study examines processes of care associated with in-hospital SSI after LEB and identifies factors that could potentially be modified to improve outcomes.
Methods: The Society for Vascular Surgery (SVS) Vascular Quality Initiative (VQI) registry (2003 to 2012) was queried to identify in-hospital SSI after 7908 consecutive LEB procedures performed by 365 surgeons at 91 academic and community hospitals in 45 states. Variables associated with SSI were identified using multivariable logistic regression and hierarchical clustering. Expected and observed SSI rates were calculated for each hospital.
Results: The overall in-hospital SSI rate after LEB was 4.8%. Univariate analysis showed that obesity, dialysis, tissue loss,