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HTN ($P < .001$) compared with normal. Despite this variation in comorbidities, hospital course, 30-day mortality, and morbidity in normal patients were not significantly different compared with underweight, overweight, or obese ($P > .05$) patients. Subgroup analysis of LER, EVAR, and CAS again revealed no significant difference.

Conclusions: Our data suggest that prevalence of abnormal BMI is fairly common in patients undergoing endovascular procedures but does not have significant impact on hospital course, 30-day mortality, and morbidity. We can conclude that endovascular approach is safe in obese patients and may be preferable to open procedures. Long-term effects of BMI on outcome of endovascular surgical procedures is still to be established.

Modeling the Long-Term Effects of Early Endovascular Intervention for Uncomplicated Type-B Dissection: The Effects of Late Aneurysm Formation

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Objectives: Recent data show no differences in survival to 2 years when chronic (2 to 52 weeks from symptom onset) uncomplicated type B aortic dissection is treated medically or with thoracic endovascular repair (TEVR). The high rate of late aneurysmal degeneration, however, coupled with the high mortality and paralysis rate of this entity, is critical to include in any analysis of the relative effectiveness of these two treatments.

Methods: We constructed a Markov model including the possible outcomes of a thoracoabdominal aneurysm (TAAA) repair (death, alive with paralysis, or alive intact). We used as input 2-year outcomes from the Investigation of Stent Grafts in Aortic Dissection (INSTEAD) trial, a prospective randomized trial of TEVR vs medical management in patients with uncomplicated type B dissection. The chances of developing a TAAA were derived from observational studies of both medically and interventionally treated dissections in the existing literature, with the artificial assumption made that rates were linear from years 3 to 8. Calculated survival (life-years gained) was derived using TreeAge.

Results: INSTEAD documented a 95.6% 2-year survival despite a 20.6% rate of crossover to TEVR or open surgical repair in patients randomized to medical treatment, whereas survival in those randomized to TEVR was 88.9%. Existing literature suggests that 33% of medically managed patients will develop TAAA 8 years after dissection, but that this rate may be only 5% after TEVR. Assuming that the ratio of late TAAA formation in the medical vs TEVR groups is 5:1, for a 60-year-old cohort, 21.7 years are gained after early TEVR compared with 17.2 years after medical management alone. Factoring in paralysis and stroke, early TEVR results in 12.4 quality-adjusted life years compared with 11.3 for medical management alone. Medical management does not become the preferred option until the rate of TAAA formation in the medical vs TEVR groups drops to 1.9:1.

Conclusions: Although short-term (2-year) results are not different whether uncomplicated type B dissection is treated with medical management or TEVR, when the roughly fivefold increased risk of late TAAA formation in medically-treated patients is factored in, an additional 4.5 years of life are gained by early TEVR. The advantage of early TEVR is not lost until the risk of TAAA formation is only halved.

Should Endovascular Aneurysm Repair Be Offered to Patients with Short Infrarenal Necks?

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Objectives: One of the most important determinants for successful endovascular repair of abdominal aortic aneurysms (EVAR) is adequate infrarenal aortic neck length. We reviewed our experience with EVAR in patients with short (<15 mm) infrarenal necks focusing on the incidence, treatment, and midterm outcome of proximal attachment site endoleaks.

Methods: Between December 2000 and July 2008, 92 patients were identified who had an infrarenal aortic neck length of <15 mm. These patients were considered high risk for open surgery. All patients with Ancure grafts ($n = 37$) were excluded, leaving 55 patients for analysis. The mean neck length was 9.6 ± 2.7 mm (range, 4-14 mm) with a mean preoperative aneurysm size of 6.2 ± 1.2 cm. Endovascular grafts implanted in patients with short infrarenal necks were 65% Zenith ($n = 36$), 24% AneuRx ($n = 13$), and 11% Excluder ($n = 6$). Mean follow-up was 21 ± 18 months (range, 1-72 months).

Results: Five proximal endoleaks were recognized on the first completion angiogram in the operating room. Four of these endoleaks were sealed intraoperatively with balloon angioplasty and/or proximal extension cuffs. One patient had a persistent small type I endoleak intraoperatively, despite the placement an extension cuff and Palmaz stent. This leak resolved spontaneously after 1 month. Two patients developed delayed type I en-

doleaks. One patient developed the endoleak 1 month after the procedure and was successfully treated with an extension cuff. The second patient presented at 63 months after the procedure with a contained rupture from a delayed type I leak. This patient was successfully treated with an aortoumiliac device. In both of these patients, AneuRx grafts were originally implanted. The overall incidence of delayed postoperative type I endoleaks was 2 of 55 (4%). Mean aneurysm size on follow-up decreased to 5.0 ± 1.3 cm. Overall mortality was 14% (8 of 55) during the follow-up period; however, there were no additional ruptures or aneurysm-related deaths.

Conclusions: Our data suggest that acceptable midterm results can be achieved when performing EVAR in high-risk patients with short (<15 mm) infrarenal necks. Therefore, AAA patients with severe comorbidities and short infrarenal neck lengths should not be denied EVAR based on short neck length alone. Longer-term data will be needed to determine durability of EVAR in these patients.

Contemporary Management of Ruptured Abdominal Aortic Aneurysms in the Medicare Population

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Objective: Endovascular repair of intact abdominal aortic aneurysms (EVAR) has been shown to decrease morbidity and resource utilization compared with open repair (open). However, the utility of EVAR for the repair of ruptured abdominal aortic aneurysms (RAAA) remains unknown. This study used the Medicare database to evaluate trends in RAAA volume and compared outcomes of open and EVAR repair of RAAA in contemporary practice.

Methods: Patients treated for RAAA were identified by ICD-9 Code in the Medicare database from 2004-2007 and stratified into four cohorts: open repair (OR), EVAR, those who underwent exploratory laparotomy (Exlap), and died, and those with no surgical treatment (NoOR) who died ≤ 24 hours of presentation. The OR and EVAR cohorts were then evaluated for perioperative mortality, hospital length of stay, and cost data; long-term survival was determined with Kaplan-Meier.

Results: During the study period, 15,684 patients were identified with RAAA. Rupture incidence steadily decreased over time, and the frequency of EVAR increased ($P < .0001$; Table). The groups differed in age (76.8 years EVAR vs 76.2 years OR, $P = .008$) and end-stage renal disease (3% EVAR vs 1% OR, $P < .0001$), but not by male gender (76% EVAR vs 74% OR, $P = .29$). Perioperative mortality was lower with EVAR (30% vs 44% OR, $P < .0001$). The EVAR group had a shorter hospital length of stay (10.2 vs 13 days OR, $P < .0001$) and fewer ICU days (5.9 vs 8.6 days OR, $P < .0001$) than the OR cohort. The 3-year survival was 42% EVAR and 38% OR ($P < .0001$; significance likely due to the early death rate in the OR group). The medical supply/device charge was higher with EVAR (\$33,340 vs \$13,090 OR, $P < .0001$) but the intensive care charges (\$16,575 vs \$21,864 OR, $P < .0001$) and the Medicare payments (\$33,504 vs \$35,820 OR, $P = .02$) were higher with OR.

Conclusions: The incidence of RAAA continues to decrease in the endovascular era, and EVAR is being used more frequently in RAAA. EVAR offers a significant perioperative survival benefit over open repair without adding additional cost to the initial hospital stay. However, the 5-year survival is equal between the two groups.

Year	EVAR	OPEN	Exlap	NoOR	Totals
2004	308 (7%)	3092 (72%)	98 (2%)	821 (19%)	4319
2005	395 (9%)	2869 (69%)	106 (3%)	789 (19%)	4159
2006	407 (11%)	2503 (67%)	90 (2%)	762 (20%)	3762
2007	489 (14%)	2176 (63%)	72 (2%)	707 (21%)	3444
Totals	1599 (10%)	10640 (68%)	366 (2%)	3079 (20%)	15684

Should the Vascular Surgeon Continue Performing Temporal Artery Biopsies?

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Objective: Giant-cell arteritis is one of the most common vasculitic disorders that a vascular surgeon encounters during daily practice. According to American College of Rheumatology guidelines, the diagnosis can be established on clinical findings without the need of a pathologic specimen. We examined the current experience of vascular surgery service performing temporal artery biopsies.

Methods: We retrospectively reviewed the cases in which the vascular surgery service performed a temporal artery biopsy between January 1, 2008,