measurments as a function of mean volume was 10.8%. Reliability, quantified by the intraclass correlation coefficient was 85.5%. The least detectable change in plaque volume was 21.1% (range, 14.1%-27.6%).

**Conclusions:** Carotid plaque volume can be measured accurately and reliably with this novel 3D ultrasound technique. The volumetric change that must be observed to establish with 95% confidence that a plaque has undergone growth or regression is ~20%.

**Author Disclosures:** K. Al-Mohanna: Nothing to disclose; J. Fischell: Nothing to disclose; M. Hossain: Nothing to disclose; A. Khosravi: Nothing to disclose; G. Kowalowski: Nothing to disclose; B. K. Lal: National Institutes of Health and VA Research & Development Department, research grants; S. Sikdar: Nothing to disclose; L. Zhao: Nothing to disclose.

**PS84.**

Intravenous Catheter Remains the Primary Access Type of Incident Hemodialysis a Decade After the Fistula First Breakthrough Initiative

Malouf1 B. Malas1, Joseph Canner1, Devin S. Zarkowski2, Isibor Arhuidese1, Umair Qazi1, Eric Schneider1, Dorry Segev1, Bruce Perler1. 1Surgery, Johns Hopkins University, Baltimore, Md; 2Dartmouth-Hitchcock Medical Center, Dartmouth, Mass

**Objectives:** Based on evidence of survival benefit when initiating hemodialysis (HD) through an arteriovenous fistula (AVF) or graft (AVG) vs intravenous hemodialysis catheter (IHC), the National Kidney Foundation-Kidney Dialysis Outcomes Quality Initiative (NKF-KDOQI) published practice guidelines in 1997 recommending ≥50% AVF rates in incident HD patients. We evaluated whether this goal has been achieved and its effect on HD outcomes.

**Methods:** Dialysis initiates (2006-2010) captured by United States Renal Database System were included. Relative mortality quantified by multivariable Cox proportional hazard models, adjusting for demographics and comorbidities, with coarsened-exact and propensity score matching used as sensitivity analyses to account for confounding by indication.

**Results:** Among 510,000 patients, 82.6% initiated HD via IHC, 14.0% via AVF, and 3.4% via AVG. HD initiation with IHC remained consistent at 82.5% between 2006 and 2010 (Fig). Patients initiating HD with an AVF had 35% lower mortality than patients with IHC (adjusted HR, 0.65; 95% confidence interval, 0.64-0.66; P < .001). Patients initiating HD with an AVF had 23% lower mortality than those initiating with IHC while awaiting AVF maturation (adjusted HR, 0.73; 95% CI, 0.76-0.79; P < .001).

**Conclusions:** Current access practice has failed to satisfy the NKF-KDOQI recommendations of 50% incident AVF. Functioning permanent access at initiation of HD is strongly associated with lower mortality, even compared with patients temporized with IHC while awaiting maturation of permanent access. Multidisciplinary efforts should focus on achieving HD access to allow ample time for fistula maturation to ameliorate this deficit in delivering care.

**Author Disclosures:** I. Arhuidese: Nothing to disclose; J. Canner: Nothing to disclose; M. B. Malas: Nothing to disclose; B. Perler: Nothing to disclose; U. Qazi: Nothing to disclose; E. Schneider: Nothing to disclose; D. Segev: Nothing to disclose; D. S. Zarkowski: Nothing to disclose.

**PS86.**

Isolated Renal Artery Aneurysms: Management and Outcomes in the Endovascular Era

Dominique B. Buck1, Thomas Curran1, John C. McCallum1, Jeremy D. Darling1, Joost A. van Herwaarden2, Frans L. Moll2, Marc L. Schermerhorn3. 1Beth Israel Deaconess Medical Center, Boston, Mass; 2University Medical Center Utrecht, Utrecht, The Netherlands

**Objectives:** Isolated renal artery aneurysms (IRAAs) are rare, but potentially fatal. The impact of endovascular therapy on RAA treatment and perioperative mortality is unknown.

**Methods:** We identified all patients undergoing open or endovascular repair of isolated RAA in the Nationwide Inpatient Sample from 1988 to 2011. A primary diagnosis of RAA and open (nephrectomy or reconstruction) or endovascular repair (coil or stent) was required. Patients with a diagnosis or repair of aortic aneurysms/dissection were excluded. Patient characteristics and in-hospital outcomes were compared between open and endovascular repair from 2000 to 2011.

**Results:** We identified 6,234 RAA repairs between 1988 and 2011: 2,086 open (78% for reconstruction) and 1,082 endovascular from 2000 to 2011. Total repairs increased after the introduction of endovascular repair (P = .03), although open repairs did not decrease (P = .20). Patients undergoing endovascular repair had more coronary artery disease (17.5% vs 10.6%, P < .001), prior myocardial infarction (5.2% vs 1.8%, P < .001), and chronic renal failure (7.7% vs 3.3%, P < .001). In-hospital mortality was 1.8% for endovascular, 0.9% for open reconstruction, and 5.4% for nephrectomy (P ≤ .001). Complication rates were 12.4% for open reconstruction vs 10.5% for endovascular repair (P = .134). Open repair had a significantly longer length of stay (6.0 vs 4.6 days, P < .001).

**Conclusions:** More renal artery aneurysms are getting treated due to endovascular repair without a reduction in operative mortality. Indications of repair of RAA should be evaluated.
Failures and Lessons in Endovascular Treatment of Symptomatic Isolated Dissection of Superior Mesenteric Artery
Zhi Hui Dong, Jun Jie Ning, Wei Guo Fu, Yu Qi Wang, Da Qiao Guo, Xin Xu, Bin Chen, Jun Hao Jiang, Jue Yang, Zhen Yu Shi, Ting Zhu, Yun Shi. Department of Vascular Surgery, Zhongshan Hospital, Fudan University; Institute of Vascular Surgery, Fudan University, Shanghai, China

Objectives: To discuss the technical failures and lessons in endovascular treatment of symptomatic isolated dissection of the superior mesenteric artery (SIDSMA).

Methods: Data for 35 patients with SIDSMA treated between July 2007 and September 2013 were retrospectively collected. The technical failures and lessons in the endovascular management were analyzed in terms of their causes and prophylaxis.

Results: Eighteen patients were successfully treated medically, 13 underwent stent placement, 1 received hybrid procedure, and 1 had open fenestration. Full follow-up (range, 3-72 months; mean, 29 ± 19 months) was achieved in 28 patients. Failure to cannulate the true lumen developed in seven patients. Of them, the femoral and brachial approaches were taken in five and two patients, respectively, and there was no significance between them (one-sided Fisher exact test = 0.572). Among the five femoral failures, the true lumen was ultimately cannulated after conversion to the brachial approach in two cases. The perfusion of the distal SMA was not improved until the second stent was placed distally covering the whole expanded false lumen in one case. Quite a few branches originating from the false lumen were overlooked in one patient, which were apparently compromised after stenting. Consequently, the patient died of intestinal necrosis. In a patient with a huge dissecting aneurysm, the stent was misplaced across the false lumen. Fortunately, remarkable aneurysmal thrombosis formed at 3 months. In the patient who received the hybrid procedure, including thrombectomy, distal fenestration, and proximal stenting, the stent was occluded at 2 weeks, probably because the thrombus protruded into the stent.

Conclusions: Difficulty in cannulating the true lumen was not uncommon in the endovascular treatment of SIDSMA, and the brachial approach might be helpful. The length and branches involvement of the false lumen would better be evaluated beforehand. Should the lumen contain thrombus, a covered stent would be a reasonable option.

Author Disclosures: B. Chen: Nothing to disclose; Z. Dong: Nothing to disclose; W. Fu: Nothing to disclose; D. Guo: Nothing to disclose; J. Jiang: Nothing to disclose; J. Ning: Nothing to disclose; Y. Shi: Nothing to disclose; Z. Shi: Nothing to disclose; Y. Wang: Nothing to disclose; X. Xu: Nothing to disclose; J. Yang: Nothing to disclose; T. Zhu: Nothing to disclose.

PS90.
Inexperienced Vascular Surgeons and Abdominal Vascular Cases Disproportionately Contribute to Malpractice Lawsuits
Sapan S. Desai1, John Eidt2. 1Department of Surgery, Duke University, Houston, Tex; 2University of South Carolina, Greenville, SC

Objectives: Open abdominal cases have declined steadily over the past 10 years. The purpose of this study is to evaluate trends in malpractice lawsuits and determine if an inverse correlation exists with the decline in open abdominal vascular cases.

Methods: A review of all legal cases filed between 1996 and 2013 against vascular surgeons for malpractice was completed using WestLaw and Google Scholar. Board certification was verified using the American Board of Surgery. Each legal case was characterized with regard to the Accreditation Council for Graduate Medical Education (ACGME) category of the procedure, complication, and outcome. Interval between initial vascular certification and the year of incident was determined to characterize vascular surgeon experience. ACGME case logs were reviewed from 2001 to 2012 and trends in open abdominal vascular cases determined.

Results: Twenty-five legal proceedings against vascular surgeons were identified over the 10-year period. At the time of the incident, 19 of the 25 surgeons were boarded in vascular surgery. Fifteen patients died and 10 experienced major disability. Ten of 20 (50%) completed cases were decided in favor of the defendant. Litigation for major abdominal vascular procedures increased by 50% over the past 10 years, and 39% (seven of 18) cases were among boarded vascular surgeons within the first 3 years of practice. The number of open abdominal vascular cases has decreased by 45% during this interval.

Conclusions: A disproportionate number of legal proceedings are initiated against vascular surgeons within their first 3 years of practice, and the majority of these lawsuits