aneurysm was present in 20 patients (67%), ranging in size from 2.6-9.6 cm. The most common repair was resection of aortic coarctation with interposition graft replacement (n = 26). Other repairs included bypass from proximal descending thoracic aorta to the infrarenal aorta (n = 2); and ascending, arch, and proximal descending aortic replacement via median sternotomy (n = 2). Complications occurred in 7 patients (23%), including chylous effusion (n = 2), recurrent laryngeal nerve injury (n = 1), acute renal failure (n = 1), respiratory failure (n = 1), atrial fibrillation (n = 1), and urinary tract infection (n = 1). In-hospital mortality was 0%. There were no cases of immediate or delayed neurologic deficit. Death occurred in 3 patients during follow-up (mean 19 months, range 1-231); none were related to coarctation repair. One patient (3%) required reoperation 6 years later due to aneurysm formation distal to the initial repair.

**Conclusions:** Open repair of adult aortic coarctation has acceptable morbidity, low mortality, and excellent durability.

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**PS14.**

**EVAR in the Elderly: Trends and Outcomes from the Nationwide Inpatient Sample**

Brian D. Park¹, Nchang M. Azefor², Chun-Chih Huang³, Cameron Akbari¹, Frederick P. Beavers¹, David Deaton⁴, Robyn S. Macsata⁵, Sean O’Donnell¹, Susanna Shin¹, John J. Ricotta¹, ¹The Washington Hospital Center, Washington, DC; ²Georgetown University Hospital, Washington, DC; ³Veterans Affairs Medical Center, Washington, DC

**Objectives:** To identify trends in EVAR utilization and outcomes over a 5 year period in a nationwide data set.

**Methods:** The Nationwide Inpatient Sample database was queried for the years 2005 to 2009. Number of EVAR cases, ratio of EVAR/Open repair (OR), major clinical outcomes, hospital costs and discharge status were analyzed by decade. Interval data were compared with ANOVA and proportions via chi squared tests.

**Results:** There were 174,714 AAA repairs (124,869 EVAR) identified. The ratio of EVAR/OR increased with increasing age. Between the years of 2005 and 2009, the number of AAA repairs in the elderly increased by 21% (7179 vs. 8554) and EVAR in patients ≥80 increased by 50% (5057 vs. 7650 P<.05). In 2009 85% of AAA repairs in patients over 80 were EVAR. 25% of all EVAR cases were performed in age ≥80 patients.

In hospital mortality rate, remained acceptable in all age groups. EVAR associated mortality, length of stay, hospital costs, and discharge to skilled nursing facilities associated increased with each successive decade of life (P<.05). Post operative MI and acute renal failure also increased with increasing age (P<.05). Results of EVAR by decade are presented below.

**Conclusions:** One quarter of all EVAR cases are being performed in patients ≥80 with overall low mortality rates. There is an age dependent increase in death, complications, hospital costs and discharge to extended care facilities. Such factors, and long term aneurysm related death, should be considered when evaluating the appropriateness of elective aneurysm repair in the elderly.

**Table.**

<table>
<thead>
<tr>
<th>Age group</th>
<th>60-69 years</th>
<th>70-79 years</th>
<th>80-89 years</th>
<th>90+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>33,629</td>
<td>56,783</td>
<td>32,493</td>
<td>1,964</td>
</tr>
<tr>
<td>In-hospital mortality</td>
<td>0.46%</td>
<td>0.70%</td>
<td>1.56%</td>
<td>2.49%</td>
</tr>
<tr>
<td>Average length of stay</td>
<td>2.7</td>
<td>3.1</td>
<td>3.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>3.69%</td>
<td>4.19%</td>
<td>4.81%</td>
<td>8.41%</td>
</tr>
<tr>
<td>Acute renal failure</td>
<td>1.21%</td>
<td>1.92%</td>
<td>2.87%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Average hospital cost</td>
<td>$26,399</td>
<td>$27,350</td>
<td>$28,490</td>
<td>$30,741</td>
</tr>
<tr>
<td>Discharge to SNF</td>
<td>2.19%</td>
<td>5.21%</td>
<td>11.12%</td>
<td>22.29%</td>
</tr>
</tbody>
</table>

**Author Disclosures:** C. Akbari: Nothing to disclose; N. M. Azefor: Nothing to disclose; F. P. Beavers: Nothing to disclose; D. Deaton: Nothing to disclose; C. Huang: Nothing to disclose; R. S. Macsata: Nothing to disclose; S. O’Donnell: Nothing to disclose; B. D. Park: Nothing to disclose; J. J. Ricotta: Nothing to disclose; S. Shin: Nothing to disclose.

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**PS16.**

**Intra-Thoracic Subclavian Artery Aneurysm Repair in the Thoracic Endovascular Era**

Michael E. Barfield, Nicholas D. Andersen, Asad A. Shah, Cynthia K. Shortell, Richard L. McCann, G. Chad Hughes. Duke University Medical Center, Durham, NC

**Objectives:** Intra-thoracic subclavian artery aneurysms (SAAs) are rare aneurysms that often occur in association with concomitant aortic pathology. Modern thoracic endovascular aortic repair (TEVAR) methods may complement or replace conventional open SAA repair.

**Methods:** A retrospective review was performed of all intra-thoracic SAAs repaired at a single institution since the FDA approval of TEVAR in 2005.

**Results:** Nineteen patients underwent 20 operations to repair 22 (13 native, 9 aberrant) SAAs with an intra-thoracic component (Table). Mean SAA diameter was 3.1 cm (range 1.6-6.0 cm). Median patient age was 62 years (range 24-80 years). Four patients (21%) had a connective tissue disorder (two Loeys-Dietz, two Marfan). Overall, 8 (36%) SAAs were repaired by open techniques and 14 (64%) via a TEVAR-based approach. All TEVAR cases required proximal landing zone in the aortic arch and revascularization of at least one arch vessel in 11 patients (79%). Concomitant repair of associated aortic pathology was performed in 10 patients with 12 (55%) subclavian aneurysms. Thirty day/in-hospital rates of death, stroke, and permanent paraplegia/paresis were 5% (n = 1), 5% (n = 1), and 0%, respectively. Three (16%) patients required delayed re-intervention, two for occluded bypass grafts and one for type II endoleak at a mean follow-up of 28-23 months.

**Conclusions:** There is an age dependent increase in death, complications, hospital costs and discharge to extended care facilities. Such factors, and long term aneurysm related death, should be considered when evaluating the appropriateness of elective aneurysm repair in the elderly.
Conclusions: This is the largest single-institution series to date of intrathoracic SAA repair, as well as the largest series of aberrant SAA repair. Modern endovascular techniques expand SAA repair options with excellent results. The majority of SAAs, and nearly all aberrant SAAs, can now be repaired using a TEVAR-based approach without the need for sternotomy or thoracotomy.

Table.

<table>
<thead>
<tr>
<th>SAA location</th>
<th>N</th>
<th>Open repair</th>
<th>Endovascular repair</th>
<th>Symptomatic</th>
<th>Concomitant aortic repair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native left</td>
<td>11</td>
<td>6 (55%)</td>
<td>5 (45%)</td>
<td>2 (27%)</td>
<td>7 (64%)</td>
</tr>
<tr>
<td>Native right</td>
<td>2</td>
<td>2 (100%)</td>
<td>0</td>
<td>0</td>
<td>1 (50%)</td>
</tr>
<tr>
<td>Aberrant left</td>
<td>7</td>
<td>0</td>
<td>7 (100%)</td>
<td>3 (43%)</td>
<td>4 (57%)</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>8 (36%)</td>
<td>14 (64%)</td>
<td>9 (41%)</td>
<td>12 (55%)</td>
</tr>
</tbody>
</table>

Author Disclosures: N. D. Andersen: Nothing to disclose; M. E. Barfield: Nothing to disclose; G. Hughes: W.L. Gore and Associates, Research Grants W.L. Gore and Associates, Consulting fees or other remuneration (payment) W.L. Gore and Associates, Speaker’s bureau Medtronic Vascular, Consulting fees or other remuneration (payment) Medtronic Vascular, Speaker’s bureau Vascutek Terumo, Consulting fees or other remuneration (payment) Vascutek Terumo, Speaker’s bureau; R. L. McCann: Nothing to disclose; A. A. Shah: Nothing to disclose; C. K. Shortell: Nothing to disclose.

C9b: Poster Session - Aortic Disease (2)

PS20.

Endovascular Repair Using Standard Suprarenal Fixation Endograft Is Feasible and Effective in Abdominal Aortic Aneurysm with Infra-renal Neck Length 5-10 mm

Mauro Gargiulo, Enrico Gallitto, Claudio Bianchini Massoni, Antonio Freyrie, Gianluca Faggioni, Carla Serra, Joseph J. Ricotta, Andrea Stella. Vascular Surgery, University of Bologna, Bologna, Italy; Vascular surgery, Emory University, Atlanta, GA

Objectives: To evaluate early and intermediate outcomes of endovascular aneurysm repair (EVAR) using standard suprarenal fixation endograft in abdominal aortic aneurysm (AAA) with infra-renal neck length 5-10 mm (short neck-SN).

Methods: Clinical, morphological and surgical data of patients undergoing EVAR for AAA with SN between 2005 and 2011 were analyzed. Endpoints included technical (TS) and clinical success (CS) according to the Reporting Standard for EVAR, intra-operative proximal cuff placement (CP), peri-operative renal function, proximal type I endoleak (ELIa), AAA shrinkage, freedom from re-intervention and long-term survival. Follow-up was conducted by duplex ultrasound (US), contrast enhancement US (CEUS) and CTA at 1, 6, 12 months and yearly thereafter.

Results: Sixty patients (mean age 75 years, male 88%, ASAIII/ASAIV: 85%/13%) were identified. Mean aneurysm diameter, mean neck length and diameter were 60.4±12.2 mm, 8.4±1.6 mm and 23.5±3 mm respectively. We implanted 32 (53.3%) Cook ZenithTMendograft and 28 (46.7%) Medtronic-EndurantTMendograft. TS and CS years with 79% males. Three type I endoleaks, one type III endoleak, and 5 type II endoleaks were identified. The overall endoleak rate was 23.5% (8/34). Two out of three type I endoleak required urgent re-intervention due to hemodynamic instability. The patient with type III endoleak was stable but had an increased in size of retroperitoneal hematoma and sac diameter on follow up imaging and thus underwent re-intervention. No type II endoleak required further intervention. At two years, all endoleak except two type II have resolved.

Conclusions: The rate of endoleak after rEVAR is higher than that reported for elective EVAR. Type II endoleak resolved spontaneously over time and should be managed conservatively. Conversely, type I and III endoleak can lead to continual rapid hemorrhage and should be intervene on. CTA should be performed on all patients that underwent rEVAR prior to discharge.

Author Disclosures: B. T. Garland: Nothing to disclose; T. Hatsukami: Nothing to disclose; E. Quiroga: Nothing to disclose; B. W. Starnes: Nothing to disclose; N. T. Tran: Nothing to disclose.

PS18.

Endoleaks after Endovascular Repair of Ruptured Abdominal Aortic Aneurysm: Do They Matter?

Brandon T. Garland, Elina Quiroga, Benjamin W. Starnes, Thomas Hatsukami, Nam T. Tran. Division of Vascular Surgery, University of Washington, Seattle, WA.

Objectives: The management of ruptured abdominal aortic aneurysm (rAAA) has undergone significant changes within the last decade with endovascular repair now the preferred operative approach. We hypothesized that some endoleaks after endovascular repair of rAAA can be managed expectantly while others require urgent intervention due to ongoing hemorrhage.

Methods: In an IRB approved study, all patients admitted with the diagnosis of rAAA from July 2007 to December 2011 were entered into a prospectively maintained database. Patients with ruptured endovascular aneurysm repair (rEVAR) and computer tomographic angiography (CTA) performed within the first 30 days of repair were included in the analysis. Images were analyzed by attending radiologists for presence and type of endoleak as well as aneurysm size. Relevant patient’s data such as hemodynamic status, hematocrit level, transfusion requirement, hospital length of stay, and outcome were analyzed.

Results: Fifty four patients who underwent rEVAR with 34 of those patients having CTA performed within 30 days of the procedure. The mean age was 74.5