EVAR for ALL: Are We Going Too Far?

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Disclosure
Medtronic: consultant, speaking/training

Ch-EVAR:
- Advanta V12 bilateral chimney stents
- Proximal extension Endurant cuff to SMA

1 month after initial EVAR

Historical primary drivers for EVAR developments:
- Invasive nature of Open Repair
- High-risk and 'inoperable' patients
Parodi’s Case #1: September 7, 1990

BUT… the original intent was not to create a procedure that would replace Open Repair for the majority of patients.

Commercial Manufacturing of EVAR stent-grafts: The first Decade

<table>
<thead>
<tr>
<th>September 1999</th>
<th>November 2002</th>
<th>May 2003</th>
<th>October 2004</th>
<th>April 2008</th>
<th>December 2010</th>
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<td>Acute Grafts</td>
<td>Acornix</td>
<td>Inclera</td>
<td>Zenith</td>
<td>Powerflex</td>
<td>Talent</td>
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EVAR Devices: Recent FDA Approvals

- Aorfix Lombard
- Ovation TriVascular
- Fenestrated Zenith

Endologix

AFX Endologix

Treovance Bolton

InCraft Cordis

Netlix Endologix
AAA Landscape: The transformative power of EVAR

- Much decreased AAA-related mortality overall
- Far fewer procedures for ruptures
- Enhanced awareness of AAA disease
- EVAR is the new Standard of Care: 75%+
- OR reserved today for patients with EVAR-unsuitable anatomies

Durability and survival are similar after elective endovascular and open repair of abdominal aortic aneurysms in younger patients

Koehn Le, MD, Elaine Yang, Lee Dubins, MD, MD, Alan H. Bower, MSN, Carolee R. G. Rollins, MD, and Thomas L. Herbst, MD, London, Ontario, Canada

Results: The study cohort comprised 469 patients 60 years of age or younger (mean age, 65.7 ± 9.9 years) who underwent elective repair (379 open repairs, 90 EVARs). Patients treated with open repair and EVAR had similar comorbidities, except that EVAR patients were more likely to have hypertension (P = .005) and poor left ventricular function (P = .04). The open repair group had significantly larger aneurysms (P = .001) and infrarenal (P = .001) neck angles, shorter neck lengths (P = .001), and larger maximum aneurysm diameters (P = .02) compared with the EVAR group. Only 5% of patients (13%) in the EVAR group did not meet all IFU criteria. The overall in-hospital mortality rate was 3.8% (47 EVAR, 2.0% open repair, P = .34). Overall mean follow-up was 13.1 years (6.5 years EVAR, 16.9 years open repair, P = .08). The 5-year (95% CI), 10-year (95% CI), and 15-year (95% CI) EVAR survival did not differ between EVAR and open repair (P = .16). Long-term survival (78% EVAR, 65% open repair, P = .09) and reoperation rates (12% EVAR, 16% open repair, P = .14) were similar between groups. Of the 77 patients with aneurysm recurrence, 56 (73%) underwent successful reintervention for aneurysm-related symptoms, and 21% underwent successful reintervention for aneurysm-related complications.

Long-Term Outcomes of Abdominal Aortic Aneurysm in the Medicare Population.


... data from Medicare beneficiaries who underwent elective AAA repair between 2001 and 2008, investigators analyzed 39,996 propensity-score-matched patients (mean age 75.6 years; 77.6% men) who had EVAR or open surgery.

TROUBLE

in Paradise

Predictors of Abdominal Aortic Aneurysm Sac Enlargement After Endovascular Repair

Andres Schanzer, MD; Roy K. Greenberg, MD; Nathaniel Herdson, MPH; William P. Robinson, MD; Mohammad H. Iskandar, MD; Robert J. Goldberg, MD; Louis Mower, MD

Background: The majority of selected abdominal aortic aneurysms (AAA) repairs in the United States are performed with endovascular methods. Baseline aneurysm-specific anatomic characteristics are fundamental for the selection of endovascular or open repair. In 2006, the Endovascular Graft Outcome Prediction (EGOP) model was developed to predict Aneurysm Sac Expansion Rates (ASERs) ≥25% based on 11 baseline variables less than 6 months. Recently, the Endovascular Graft Outcome Study (EGOS) model was developed to predict ASERs ≥25% based on 12 baseline variables less than 6 months.

Does compliance with IFU predict success? Measure of Successful Aneurysm Repair: Absence of Sac Enlargement at 5y Follow-up

Freedom from Sac Growth >5mm
TROUBLE in Paradise

- Bad proximal neck: short/angulated/absent
- Off-label use of stent-graft devices (prox neck)
- High-risk patients with short life expectancy
- Small aneurysms
- Loss of surgical skills for open repair

EVAR 2015: Pros & Cons

**Biggest EVAR Pro:**
- Lower operative mortality
- Also: easier/quicker recovery, and patients love it!

**Biggest EVAR Con:**
- Life-long surveillance
- Also: # of reinterventions (up to 20%), device cost

WE MUST re-consider these 2 AAA options more often in 2015 and beyond

- **Open surgical repair:** still excellent for medically-fit patients with unfavorable EVAR anatomy
- **No treatment:** mainly for aneurysms <6cm in diameter that rupture only infrequently, and for patients with short life expectancy regardless of aneurysm size