Ruptured AAA in 2013: Triage to the Cath Lab??!!

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Improving People's Lives
through innovations in personalized health care

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Disclosure Slide

- Consultant for Gore, Abbott, Toshiba
- Research and Grant Support from
- Cook, Edwards, Boston Scientific, Medtronic, Cordis and Biotronix
Firm believer in evidence based medicine
Firm believer in anecdotal and translational medicine
In the US, AAA causes almost 14,000 deaths each year and accounts for 63,000 hospital discharges.

<table>
<thead>
<tr>
<th>Age</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.9 - 4.9 cm</td>
<td>1.3%</td>
<td>0%</td>
</tr>
<tr>
<td>45-54</td>
<td>12.5%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Risk factors associated with AAA

- Older age
- Male sex
- Family hx
- Smoking
- Hypertension
- Dyslipidemia
- Atherosclerotic disease
- COPD

Types of AAA

Morphological classification
- fusiform aneurysms
- saccular aneurysms
- dissecting aneurysms
- pseudo-aneurysms

Segments involved
- thoracic
- thoraco-abdominal
- abdominal
- main branches of the aorta
- iliac arteries
## Growth rate of AAA

<table>
<thead>
<tr>
<th>Initial size (cm)</th>
<th>Mean growth rate (cm/yr)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0-3.9</td>
<td>0.39</td>
<td>0.20-0.57</td>
</tr>
<tr>
<td>4.0-4.9</td>
<td>0.36</td>
<td>0.21-0.50</td>
</tr>
<tr>
<td>5.0-5.9</td>
<td>0.43</td>
<td>0.27-0.60</td>
</tr>
<tr>
<td>6.0-6.9</td>
<td>0.64</td>
<td>0.16-1.10</td>
</tr>
</tbody>
</table>

Tan W Abdominal Aortic Aneurysm Rupture [www.emedicine.com](http://www.emedicine.com)
Operative mortality

- **35-70% for ruptured aneurysm**

- **1.0-8.0% for elective AAA cases**
Mortality rate can be as high as 80%\cite{1}

More than one third of rupture cases die outside the hospital\cite{2}


AAA: risk of rupture

Risk of rupture for untreated aneurysm within 5 years (%)

- 5-5.9 cm: 25%
- 6-6.9 cm: 35%
- ≥7 cm: 75%

Aneurysm size
AAA Sequelae

Natural history
- gradual and/or sporadic expansion
- accumulation of mural thrombus

Complications
- rupture
- thromboembolic events
- compression of adjacent structures
Symptoms of AAA rupture

- Abdominal/back pain
- Pulsatile abdominal mass
- Hypotension

Clinical triad occurs in only about one-third of cases.

Infrarenal/juxtarenal AAA ≥5.5 cm should undergo repair; 4.0-5.4 cm, ultrasound/CT scans every 6-12 mo

- Repair can be beneficial for infrarenal/juxtarenal AAAs 5.0-6.0 cm (Class IIb)
ACC/AHA Guidelines
AAA repair

- Repair probably indicated for suprarenal/type IV thoracoabdominal AA >5.5-6.0cm
- AAA <4.0cm, ultrasound every 2-3 years is reasonable
- Intervention not recommended asymptomatic infrarenal/juxtarenal AAAs <5.0 cm (men) or <4.5 cm (women)
OVER Trial 2009

- Absolute risk reduction of 20-25% in hospital, 30 day and long term mortality
- > 400 patients in each group
- EVAR here to stay
- FEVAR now here!
14 year Swiss experience
EVAR when possible
2009 EVAR only (96%)
30 day mortality significantly less in EVAR only group (sicker)
Abdominal decompression
AAA Rupture: Triage to Cath Lab

Are you kidding me?
Triage to Hybrid Lab?

But of course you idiot!!
Team Sport

- On call 24/7 vascular surgeons AND interventional radiologists and/or cardiologists ALL competent and experienced in advanced EVAR techniques
- State of the art hybrid suite OR/imaging suite
- Ability to get a CT in 10-15 minutes upon arrival
“STEMI or Trauma Level I like” triage system
Can also include aortic dissections with present and evolving endovascular technology