Endoleaks after EVAR:
Watch and wait or intervene?
RADY 401 Case Presentation

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Patient history and workup

Patient is a 73-year-old female who was found to have AAA at age 67, which was then repaired with a fenestrated endovascular aneurysm repair (FEVAR). Since then she has had annual follow-up CT angiography scans and is presenting this month for her regular follow-up scan. She is currently asymptomatic.

Her prior scans have showed no signs of aneurysm sac growth or endoleaks. She has not needed any interventions since the FEVAR.

Imaging studies: X-ray abdomen

Annual x-ray of abdomen confirmed endograft was in correct position
Imaging studies: CT angiography abdomen/pelvis

Type II endoleaks seen in IMA (blue arrow) and inferior phrenic artery (red arrow)
Imaging studies: CT angiography abdomen/pelvis

Type II endoleaks seen in IMA and inferior phrenic artery

Arterial phase

Delayed (venous) phase
Imaging studies: Linear and 3D reconstructions
Endoleaks$^1$

Our patient
Patient treatment

Type II endoleak -> will continue surveillance
  • Annual CTA and X-ray

Other option: embolize feeding arteries and/or endoleak nidus
  • Various approaches – translumbar, transabdominal, intravascular
  • Risks vs. benefits
    • Embolization may stop the growth of the aneurysm sac, decreasing risk of rupture of AAA
    • However, repeat interventions may be necessary, and sac may continue to grow
### Imaging discussion: ACR Appropriateness Criteria

#### Variant 2: Follow-up for postendovascular repair (EVAR) or open repair of AAA.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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</thead>
<tbody>
<tr>
<td>CTA abdomen and pelvis with IV contrast</td>
<td>Usually Appropriate</td>
<td></td>
</tr>
<tr>
<td>MRA abdomen and pelvis without and with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>Aortography abdomen</td>
<td>May Be Appropriate</td>
<td></td>
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<tr>
<td>CT abdomen and pelvis without and with IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT abdomen and pelvis without IV contrast and US aorta abdomen with duplex Doppler</td>
<td>May Be Appropriate</td>
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<tr>
<td>MRA abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>US aorta abdomen with duplex Doppler</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT abdomen and pelvis without IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT abdomen and pelvis with IV contrast</td>
<td>May Be Appropriate (Disagreement)</td>
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<tr>
<td>X-ray abdomen and pelvis</td>
<td>May Be Appropriate</td>
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Imaging discussion

Straightforward case? Maybe not!

Problems with type II endoleak surveillance:

- Radiation (21-43 mSv)$^4$
- Contrast (60 mL)
- Over-intervention
- $$$
Imaging discussion

Proposed alternatives

- Annual US scans\(^5\)
- Contrast-enhanced US\(^6\)
- Surveillance imaging every 2 years instead
Imaging discussion

SIR recommendations for post-EVAR follow-up:

- Measure aortic aneurysm diameter
- Detect and classify all endoleaks
- Detect location and patency of stent graft
Teaching points

• Endoleaks are the most common complication after EVAR or FEVAR for AAA

• Type I endoleaks are rare but need to be fixed

• Type II endoleaks are the most common but there is no consensus for whether or not intervention is necessary, as most people prefer annual surveillance
References


