Most Focal Thoracic Disease (IMHs, PAUs And Pseudoaneurysms) Should Be Treated By Endografts (TEVAR)

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Thoracic endovascular aortic repair (TEVAR) is a well-established therapy utilized with clear indications for patients with thoracic aortic aneurysm, complicated dissection, or traumatic injury.

The optimal treatment of penetrating aortic ulcer (PAU), intramural hematoma (IMH), and non-traumatic pseudoaneurysm (PSA) is not as well-studied.

Timing and need for treatment in patients with asymptomatic disease is still an active area of debate.

DISCLOSURES

• Educational speaker for Boston Scientific
—Honoraria paid directly to Emory

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Table II: Major complications: Stroke, myocardial infarction, or reoperation for hemorrhage.

<table>
<thead>
<tr>
<th>Surveillance (N = 37)</th>
<th>No repair</th>
<th>Repair</th>
<th>Statistical difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to repair</td>
<td>37 weeks</td>
<td>30 days</td>
<td>12.8 (2.98)</td>
</tr>
<tr>
<td>Length of follow-up</td>
<td>15 weeks</td>
<td>27 (1.14)</td>
<td>1.0 (0.98)</td>
</tr>
<tr>
<td>Complications</td>
<td>1 patient death</td>
<td>1 patient death</td>
<td>0.0 (0.00)</td>
</tr>
<tr>
<td>Death</td>
<td>2</td>
<td>3</td>
<td>0.0 (0.00)</td>
</tr>
</tbody>
</table>

1 patient death due to thoracic related ulcer on follow-up
ENDOVASCULAR REPAIR OF FOCAL THORACIC AORTIC DISEASE IS ASSOCIATED WITH LOW MORBIDITY AND MORTALITY

131 patients with TEVAR performed 1/2007 through 6/2014 met criteria for analysis

44 Focal Lesions: Intramural Hematoma (IMH), Penetrating aortic ulcer (PAU) and Non Traumatic Pseudoaneurysm (PSA)

87 Non-Focal Lesions: Aneurysms and Dissections

11/13/2018

Charles Drucker, MD, Angela Crawford, MD, Solomon Hayon, MD, Michael Huffner, MD, Joseph Rabin, MD, Rajabrata Sarkar, MD, PhD, Bradley Taylor, MD, Robert S. Crawford, MD.

<table>
<thead>
<tr>
<th>Focal (IMH, PAU, PSA)</th>
<th>Non-Focal (Dissect.)</th>
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<tbody>
<tr>
<td>No. (%) or Mean ± SD</td>
<td>P</td>
</tr>
<tr>
<td>Perioperative Mortality</td>
<td>0/44 (0) 9/87 (10)  *0.028</td>
</tr>
<tr>
<td>Technical Success</td>
<td>44/44 (100) 83/86 (96) 0.55</td>
</tr>
</tbody>
</table>

100 patient (55 PAU, 53 IMH)

10 year follow-up

Incidence of early rupture for patients with IMH and PAU with symptoms is higher than typical dissection patients

Follow-up imaging

57% with IMH worsened

30% with PAU worsened

Patients with PAU with initial surgical treatment had better prognosis than patients treated medically (p=0.037)

"On imaging follow-up patients with IMH and PAU lesions rarely improved. Better survival for PAU patients with surgery."

44 patients

Intractable pain, rupture, dissection, uncontrolled HTN

25 with concomitant PAU

100% technical success

5% symptom resolution

5% mortality, 5% paraplegia

Favorable remodeling

108 patient (55 PAU, 53 IMH)

10 year follow-up

Follow-up imaging

57% with IMH worsened

30% with PAU worsened

Patients with PAU with initial surgical treatment had better prognosis than patients treated medically (p=0.037)

"On imaging follow-up patients with IMH and PAU lesions rarely improved. Better survival for PAU patients with surgery."

Aortic remodeling after thoracic endovascular aortic repair for intramural hematoma

44 patients

Intractable pain, rupture, dissection, uncontrolled HTN

25 with concomitant PAU

100% technical success

5% symptom resolution

5% mortality, 5% paraplegia

Favorable remodeling

Clinical implications of Focal Intimal Disruption in Patients With Type III intramural hematoma

FID
Substantial number of patients developed FID (43%).
- 10% acutely
- 30% in the next 6 months

Acute phase IMH (Within 14 days) higher risk of aorta related events (p<0.001)
- Not so for patients who developed FID in a subacute or chronic phase
- Still looking for other makers of progression (D-dimer?)

43 IMH's over 11 years
- Freedom from aortic related mortality
  - 31 (71%) of patients eventually underwent SGR
    - 16 (52%) acute
    - 6 (19%) subacute
    - 9 (29%) patients had progression chronic phase despite OMT and required SG
- Presence of ULP (ulcer like projections) on admission CT higher in patients who required SG repair (5% vs. 36%, p=0.043)
- IMH associated with 47% aortic adverse event rate in FU with OMT alone

CONCLUSION
- PAU lesion that was initially symptomatic, even if symptoms went away with medical therapy
- Any patient with recurrent symptoms at same or subsequent admission.
- Large PAUT >10-15 mm in depth?
- Any PAU lesion that has an associated saccular aneurysm or PSA
- Any PAU lesion which shows radiographic progression over the course of follow-up (lesions rarely if ever resolve)
- Any lesion present in an aorta that is at least 42 mm in diameter
- IMH associated with PAU and vice-versa?
- IMH associated with FID in the acute period
- IMH associated with a finger like projection

THANKS