Thoracic Aortic Endografting Facilitates The Resection Of Tumors Infiltrating The Aorta

S. Collaud¹, T.K. Waddell¹, K. Yasufuku¹, G. Oreopoulos², R. Rampersaud³, B. Rubin², G. Roche-Nagel², S. Keshavjee¹, M. de Perrot¹

From the Divisions of Thoracic Surgery¹, Vascular Surgery² and Orthopedic Surgery³, Sprott Department of Surgery¹,²,³ and the Peter Munk Cardiac Centre², Toronto General Hospital, University Health Network and the University of Toronto, Toronto, ON, Canada
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no conflict of interest to disclose
Background

- Aortic endografts:
  - aortic dissection
  - traumatic aortic injury
  - aneurysm rupture

- More recently:
  - to facilitate resection of tumors invading the aorta\textsuperscript{1-3}

Aim

- Describe our updated surgical experience and long-term outcome with aortic endografting to facilitate the resection of tumors invading the aorta
## Results

from 2008-2012

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>Sex</th>
<th>Pre-op</th>
<th>Histology</th>
<th>(y)p TNM</th>
<th>Post-op</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>43</td>
<td>F</td>
<td>rad</td>
<td>sarcoma</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td># 2</td>
<td>52</td>
<td>M</td>
<td>-</td>
<td>NSCLC</td>
<td>T4N0M0</td>
<td>ch-rad</td>
</tr>
<tr>
<td># 3</td>
<td>34</td>
<td>F</td>
<td>rad</td>
<td>sarcoma</td>
<td>-</td>
<td>-</td>
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<tr>
<td># 4</td>
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<td>F</td>
<td>ch-rad</td>
<td>NSCLC</td>
<td>T4N0M0</td>
<td>-</td>
</tr>
<tr>
<td># 5</td>
<td>54</td>
<td>F</td>
<td>ch-rad</td>
<td>NSCLC</td>
<td>T3N0M0</td>
<td>-</td>
</tr>
</tbody>
</table>
Patient #1
Patient #1
Patient #1
Patient #1
Patient #2
Patient #2

right to left common carotid artery bypass prior to covering of left carotid and subclavian arteries
# Results

<table>
<thead>
<tr>
<th>Patient</th>
<th>Stages</th>
<th>Aortic endografting landing zone</th>
<th>En bloc resection</th>
<th>Aorta resection</th>
<th>Aorta reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>3</td>
<td>desc aorta w LUL ribs 7-9 hemi T7-9 adv-med-intima</td>
<td>parietal pleura</td>
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<td></td>
</tr>
<tr>
<td># 2</td>
<td>2</td>
<td>aortic arch LUL - - adv-med</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td># 3</td>
<td>2</td>
<td>desc aorta LLL ribs 5-7 partial T5-6 adv-media</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td># 4</td>
<td>3</td>
<td>desc aorta LLL ribs 5-7 hemi T5-7 adv</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td># 5</td>
<td>2</td>
<td>aortic arch LLL ribs 5-8 partial T5-8 adv-med-intima bovine pericardium, lat dorsi muscle</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patient #5
Results

■ R0 resection in all patients

■ cardiopulmonary bypass was never used

■ at last follow-up (median=39 months, 9-62):
  - all alive and disease-free
  - BPF – empyema – non-union (Patient 1)
  - no overt endograft-related complication
Conclusions

- aortic endografting allows safe en bloc resection of tumors invading the aorta without cardiopulmonary bypass

- indication for thoracic aortic endografts could be extended to specific oncological cases
Acknowledgments

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