The rate of bovine arch among dissection patients

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I have the following potential conflicts of interest to report:

- Consulting
- Gore, Vascutek, Jotec
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- Other(s)

I do not have any potential conflict of interest
Background

Bovine arch might be accomplished with a higher incidence of Type B dissections than the normal aorta.

A bovine arch may intrigue the landing Zone in TEVAR.
Atypical aortic arch branching variants: A novel marker for thoracic aortic disease

The paired first, second, and fifth aortic arches and the distal section of the right sixth arch disappear. The dorsal aorta on each side between the third and fourth arches also disappears.
The left fourth arch and the left dorsal aorta distal to it dilate and become part of the aortic arch.

The "bovine arch" can be seen as a stopped evolution.
AORTIC ARCH DEVELOPMENT
METHODS

The last 100 patients with a type B Dissection in a consecutive series were investigated with respect to:

Rate of “bovine arch”

The curvature of the arch

Distance between ascending and descending aorta at the level of the pulmonary artery

Compared to 110 patients having a CT for other reasons (staging in malignant disease)
# Cologne Data

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Type B dissection</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>110</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Median age</td>
<td>61 (32-84)</td>
<td>61 (22-83)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Bovine Arch</td>
<td>19 (17.8%)</td>
<td>18 (18%)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Arch Curvature</td>
<td>5,35 cm</td>
<td>5,56 cm</td>
<td>n.s</td>
</tr>
<tr>
<td>Females</td>
<td>38 (34%)</td>
<td>28 (28%)</td>
<td>n.s</td>
</tr>
</tbody>
</table>
## Rate of Bovine Arch (BA) in literature

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>N</th>
<th>Country</th>
<th>Modality</th>
<th>BA diss</th>
<th>BA Aortic disease</th>
<th>BA control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natsis</td>
<td>2009</td>
<td>633</td>
<td>Greece</td>
<td>DSA</td>
<td></td>
<td></td>
<td>14.9%</td>
</tr>
<tr>
<td>Hornick</td>
<td>2012</td>
<td>1456</td>
<td>US</td>
<td>CT</td>
<td>(15%)</td>
<td>26%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Celikyay</td>
<td>2013</td>
<td>1136</td>
<td>Turkey</td>
<td>CT</td>
<td></td>
<td></td>
<td>21.1%</td>
</tr>
<tr>
<td>Wanamaker</td>
<td>2013</td>
<td>355</td>
<td>US</td>
<td>CT</td>
<td>31%</td>
<td></td>
<td>19%</td>
</tr>
<tr>
<td>Pullas Tapia</td>
<td>2015</td>
<td>1050</td>
<td>China</td>
<td>CT</td>
<td>11.8</td>
<td></td>
<td>14.7%</td>
</tr>
<tr>
<td>Dumfarth</td>
<td>2015</td>
<td>5273</td>
<td>US</td>
<td>CT</td>
<td></td>
<td></td>
<td>24.6%</td>
</tr>
</tbody>
</table>
Conclusions

The bovine arch can be seen a variant developing through variation in the embryologic phase of the humans.

The rate of bovine aortic arch in type B dissection patients does not seem to differ from the rate in the normal population.

The rate in type A dissections is currently investigated.
Thank you very much for your attention
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