Feasibility of Omitting Outer Renorrhaphy During Robotic Partial Nephrectomy

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Feasibility of omitting outer (cortical) renorrhaphy during robotic partial nephrectomy - A multi-institutional analysis

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Introduction

- Vattikuti Collective Quality Initiative (VCQI):
  - 41 surgeons
  - 14 centers
  - 9 countries
- Reconstruction technique after robotic partial nephrectomy (RPN) has recently been shown to be a modifiable factor with possible impacts on ischemia time, postoperative bleeding, renal function, and incidence of pseudoaneurysms after surgery.
Feasibility of omitting outer (cortical) renorrhaphy during robotic partial nephrectomy - A multi-institutional analysis

- Recent literature comparing single versus double layer (cortical) renorrhaphy stems primarily from single institution studies.
- There are currently no randomized trials.
- Objective: to evaluate the feasibility of omitting cortical renorrhaphy in a multi-institutional setting.

*Standard double layer renorrhaphy technique
Methods

- Inverse probability of treatment weighting (IPTW) was performed to minimize selection bias by adjusting for several preoperative factors.
- Firth correction was applied to the data model to account for center-specific practices.
- Perioperative outcomes were compared between matched cohorts.

Feasibility of omitting outer (cortical) renorrhaphy during robotic partial nephrectomy - A multi-institutional analysis

1453 patients underwent RPN between 2006 and 2018 within the VCQI database

- Double layer reconstruction: 1260 patients
- Single layer reconstruction: 120 patients
### Feasibility of omitting outer (cortical) renorrhaphy during robotic partial nephrectomy - A multi-institutional analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Double Layer</th>
<th>Single Layer</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time, minutes, median (IQR)</td>
<td>168 (140-203)</td>
<td>162 (140-202)</td>
<td>0.2</td>
</tr>
<tr>
<td>Ischemia time, minutes, median (IQR)</td>
<td>18 (14-22)</td>
<td>17 (13-20)</td>
<td>0.7</td>
</tr>
<tr>
<td>Estimated blood loss, mL, median (IQR)</td>
<td>100 (50-200)</td>
<td>100 (50-200)</td>
<td>0.6</td>
</tr>
<tr>
<td>% drop in eGFR, ml/min/1.73m², median (IQR)</td>
<td>7.3 (16.9-1.4)</td>
<td>10.4 (17.5-3.6)</td>
<td>0.9</td>
</tr>
<tr>
<td>Intraoperative complications, %</td>
<td>7.4</td>
<td>8.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Postoperative Clavien grade ≥ 3 complications, %</td>
<td>1.0</td>
<td>2.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Positive surgical margin, %</td>
<td>2.2</td>
<td>3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Hospital stay, days, median (IQR)</td>
<td>3 (2-4)</td>
<td>2 (2-4)</td>
<td>0.4</td>
</tr>
<tr>
<td>Need for angioembolization within 1 year, %</td>
<td>0.7</td>
<td>1.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

**Conclusion:**

Omission of cortical renorrhaphy did not significantly improve operative or ischemia time; however, it also had no adverse effect on perioperative outcomes after RPN in a multi-institutional setting.
• Won best poster prize at EAU Barcelona
• Being presented at AUA annual meeting, Chicago as we speak.