Optimizing Laparoscopic TME/How Low Can You Go?

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Optimizing Laparoscopic TME

- No financial disclosures
Contiguous Spread of Rectal Cancer
Laparoscopic vs Open TME

- Z6051
  - 486 patients
  - 35 institutions
  - Stage II and III rectal cancers
  - Lap vs Open LAR
  - Composite outcome
    - Circumferential margin
    - Distal margin
    - Intactness of TME
  - Trial failed to prove non-inferiority of Lap

1. Fleshman, JAMA 2015
Laparoscopic vs Open TME

- NCDB
  - 2010-2011
  - 18,765
- Laparoscopic versus open LAR
- No difference
  - Gross margin positivity
  - Microscopic margin positivity
  - Circumferential margin >1 cm
  - Number of LN’s harvested

1. Nussbaum, JGIS 2015
Laparoscopic vs Open TME

- NCDB
  - 14,033 patients
  - No difference in survival at 36 months

**TABLE 2. Multivariable Adjusted Outcomes of Minimally Invasive (MI-LAR) vs. Open Low Anterior Resection (OLAR) for Rectal Cancer (Reference: OLAR)**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Effect Size</th>
<th>Lower 95% CI</th>
<th>Upper 95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymph node retrieval (number)</td>
<td>0.386</td>
<td>0.074</td>
<td>0.697</td>
<td>0.015</td>
</tr>
<tr>
<td>Any positive margin (OR)</td>
<td>0.901</td>
<td>0.775</td>
<td>1.047</td>
<td>0.174</td>
</tr>
<tr>
<td>Hospital length of stay (days)</td>
<td>-0.866</td>
<td>-0.984</td>
<td>-0.748</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>30-day unplanned Readmission (OR)</td>
<td>1.052</td>
<td>0.917</td>
<td>1.208</td>
<td>0.471</td>
</tr>
<tr>
<td>30-day mortality (OR)</td>
<td>0.817</td>
<td>0.540</td>
<td>1.237</td>
<td>0.340</td>
</tr>
<tr>
<td>Use of any adjuvant therapy (OR)</td>
<td>1.023</td>
<td>0.942</td>
<td>1.111</td>
<td>0.589</td>
</tr>
<tr>
<td>Survival (36 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of mortality (HR)</td>
<td>0.885</td>
<td>0.769</td>
<td>1.019</td>
<td>0.089</td>
</tr>
</tbody>
</table>

Adjusted variables include age, sex, race, insurance status, Charlson Comorbidity Index, facility type and volume, pathologic T and N stage, and use of neoadjuvant chemotherapy or radiation therapy. CI indicates confidence interval; HR, hazard ratio; OR, odds ratio.

Laparoscopic versus Robotic TME

- Equivalent oncologic outcomes
- Early data suggested lower conversion rate with Robotic TME versus Laparoscopic
- ROLLARR Randomized Clinical Trial
  - 471 patients
  - Endpoint was rate of conversion to open
  - No difference between robotic and laparoscopic

2. Jayne, JAMA 2017
Port Placement

Abdomen

12mm

Umbilicus

Duke Surgery
Laparoscopic TME: Entering the Pelvis
Laparoscopic TME: Identifying the Autonomic Nerves
Laparoscopic TME: Identifying the Autonomic Nerves
Laparoscopic TME: Dissection
Laparoscopic TME: Rectal Transection
Laparoscopic TME

- IMA/IMV Ligation/Entry into pelvis
- Identification of Nerves
- Bloodless dissection
- Accentuate anterior dissection via pexy of uterus and forward traction via assistant
- Distal transection may be most difficult portion of the case
  - Adjunctive measures
    - TaTME