Does the extent of lymphadenectomy have an impact on in-hospital mortality and reoperations after TME for esophageal cancer?

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Background I

- Patient selection, perioperative care
- Modified surgical techniques
- Neoadjuvant treatment concepts

have led to better outcomes in locally advanced esophageal cancer during the last decades
Background II

However the effect of the extent of lymphadenectomy during surgery for esophageal cancer on outcomes is currently questioned.

Aim of the study

➢ To investigate the effect of the extent of removed lymph nodes on early reoperations and in-hospital mortality and morbidity in patients undergoing TME for esophageal cancer.

➢ Main focus on the last decade (16 years)
➢ Single center, retrospective study
➢ Prospective evaluation of patients since 2001
➢ Logistic regression analysis
Outcome

Primary Outcome:
*Early reoperations and in-hospital mortality*

Secondary Outcomes:
*Epidemiology and Tumor characteristics*
*Perioperative complications*
*Total number of Lymph nodes (Ln) and \(_{or} < 15\) Ln*
*Survival rate*
Surgical approach and nRCT

Period (10/01– present)  n=314

*Cancer cases* treated with TME included  n= 247

Systemic neoadjuvant treatment nRCT (T3+/N+)  n= 189  76.5 %
## Demographics and tumor characteristics

<table>
<thead>
<tr>
<th>Tumor site</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>0.5 %</td>
</tr>
<tr>
<td>Mid</td>
<td>12.2 %</td>
</tr>
<tr>
<td>Lower thoracic/AEG I</td>
<td>87.3 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex (m/f)</th>
<th>77.2/ 22.8 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>67 (IQR 14)</td>
</tr>
<tr>
<td>ASA III</td>
<td>51.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Histology</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squamous cell</td>
<td>20.8%</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>74.3%</td>
</tr>
<tr>
<td>Other</td>
<td>4.4 %</td>
</tr>
</tbody>
</table>
# Tumor characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical T stage</td>
<td>III-IV 60%</td>
</tr>
<tr>
<td>Clinical N stage</td>
<td>N+ 71.6%</td>
</tr>
<tr>
<td>Resection</td>
<td>RO 96%</td>
</tr>
<tr>
<td>Resected lymph nodes (mean)</td>
<td>26 (2-82)</td>
</tr>
</tbody>
</table>
Mortality + reoperations

Mortality

In hospital
2.8%

1x Respiratory failure
2x Heart failure
1x ARDS
1x Pneumonia, 1x MOF, 1x PE

Reoperations

6.4%

4x Leakage
2x Haematoma
2x Cardiac tamponade,
1x Perforation (colon)
1x Bronchopulmonary fistula,
2x Evisceration, 2x Ileus, 1x
Diaphragmatic hernia, 1x Pancreatitis
<table>
<thead>
<tr>
<th>Complications</th>
<th>2001-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonal</td>
<td>24%</td>
</tr>
<tr>
<td>ARDS</td>
<td>1.5%</td>
</tr>
<tr>
<td>Anastomotic leak</td>
<td>12%</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>2.2%</td>
</tr>
<tr>
<td>Wound infection</td>
<td>11.8%</td>
</tr>
<tr>
<td>Recurrent Laryngeal Nerve Paralysis (trans.)</td>
<td>4.5%</td>
</tr>
</tbody>
</table>
Ln harvested and risk of reoperation (n=247) subgroup after nRCT (n=189)

- Total Number LN
  - >15 LN
  - <15 LN

Graph showing odds ratio with p-values:
- p=0.432
- p=0.281
- p=0.481
- p=0.240
- p=0.498
- p=0.481
Ln harvested and risk of mortality (n=247) subgroup after nRCT (n=189)

p=0.338
p=0.819
p=0.856
p=0.833
p=0.530
p=0.494
Ln harvested and risk of morbidity (n=247) subgroup after nRCT (n=189)

- Total Number LN
  - >15 LN Neoadjuvant
  - <15 LN Neoadjuvant

Leak

Total Number LN

Odds ratio

- p=0.881
- p=0.921
- p=0.872
- p=0.692
- p=0.858
- p=0.779
Ln harvested and risk of morbidity (n=247) subgroup after nRCT (n=189)
Overall survival
Survival over Time

![Graph showing overall survival over time with a decreasing trend from 1.0 to 0.6 over 5 years.](image-url)
Conclusion

Extended lymphadenectomy is not associated with an increased rate of reoperations and in-hospital morbidity + mortality

(incl. after neoadjuvant treatment)

Extended lymphadenectomy in patients with TME can be regarded as a safe procedure
Thank you