MINIMALLY INVASIVE ESOPHAGECTOMY FOR CANCER: where do we stand?

Ph Nafteux, MD

Copenhagen, Nov 3rd 2011
Department of Thoracic Surgery, University Hospitals Leuven, Belgium
W. Coosemans, H. Decaluwé, Ph. Nafteux, D. Van Raemdonck, G. Decker, P. De Leyn
Esophagectomy is considered as the gold standard for resectable esophageal and GEJ cancer with long term survival reaching 40%
Results of 2000 Esophagectomies for Cancer

- **The Seventies**: decreasing mortality and morbidity
- **The Eighties**: better selection by refining staging – extent of surgery
- **The Nineties**: introduction of multimodality treatment and new technologies
Background

Leuven Data (2000 esophagectomies)

ALL - RAW survival

- prior 1990
- 1990-1999
- 2000-2007
Background.

- Esophagectomy based treatment is standard of care for resectable esophageal and GEJ cancer.

**BUT:**

- Complication rate 30-80%.
- Mortality rate 4-7%.
- Quality of life?
Can we do better?
Minimally Invasive Way?

Theoretical advantages

- Less impaired immunity
- Less invasive = less complications
- Shortened hospital stay
- Quicker recovery
- Improved quality of life
History.

• First publications early 90 ies (Gossot, Azagra, Cuschieri, ..).
• De Paula (1996): first large series.
• Increasing experience with laparoscopy

Various techniques of MIE
Trans-thoracic MIE

**VATS + laparoscopy** +/- mini-laparotomy +/- cervicotomy  
+/- mini-thoracotomy

**Hybrid techniques:**

VATS +/- minithoracotomy + laparotomy +/- cervicotomy

Laparoscopy +/- mini-laparotomy + thoracotomy +/- cervicotomy

Trans-hiatal MIE

**Laparoscopy** +/- mini-laparotomy + cervical/thoracic anastomosis

+/- robotic

>28 different operations are called « MIE »
Laparoscopic transhiatal esophagectomy

- Laparoscopic mobilization of stomach.
- Transhiatal dissection under direct vision.
- Single lumen ventilation.

BUT:
- Less optimal dissection of the middle and upper esophagus.
- Limited number of thoracic LN harvested.
VATS & laparoscopic MIE

N=222 1996-2002

- 16 conversions (7.2%)
- Hospital stay 7 days (3-75)
- Mortality 1.4% (n=3)
- Major morbidity: 32%

Atrial fibrillation 11.7%
Respiratory complications 11%
Anastomotic leakage 11.7%
Tracheal tear 0.9%

VATS 4 ports
Laparoscopy 5 ports
No regional LND

Quality of life

- **SF 36 QOL (PCS – MCS)**
  - Mean PCS 44,1 (nl = 43,33)
  - Mean MCS 49,67 (nl 52,68  p<0,01)
  - N=57 pre and post op values preserved

- **GER-HRQOL scale**
  - Only 4% GERD (score > 15)

- **Dysphagia measurement (score 1 to 5)**
  - Mean score 1,4

→ Recovery to normal QOL
MIE: Ivor Lewis Approach

« The omission of a cervical dissection has reduced our recurrent nerve injury rate to 0. »

MIE-neck vs MIE-chest

- N=973 pts (49% neck, 51% chest)
  - Hospital stay: 8 days
  - Median LN: 20
  - Mortality: 2% (chest) vs 4% (neck)  \( p=0.09 \)

<table>
<thead>
<tr>
<th>MIE</th>
<th>Neck (%)</th>
<th>Chest (%)</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocal cord palsy</td>
<td>9</td>
<td>1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sepsis</td>
<td>11</td>
<td>7</td>
<td>0.024</td>
</tr>
<tr>
<td>Anast leak</td>
<td>8</td>
<td>4</td>
<td>0.013</td>
</tr>
<tr>
<td>Gastric tube necrosis</td>
<td>3</td>
<td>&lt;1</td>
<td>0.018</td>
</tr>
</tbody>
</table>

« Our technique of MIE has evolved such that laparoscopic-thoracoscopic **Ivor-Lewis esophagogastrectomy** has become our favorite approach. »

Luketich J, abstract ASA April 2011
But some concerns about systematic use for all operable tumor stages

- Difficult mobilization if bulky tumor (R status?).
- LN harvesting is feasible but takes a long time.
- No randomized studies for oncologic outcome.

3-year survival
stage II  <30%
stage III


- Quid QOL versus open surgery?
MIE for cancer in 2011?

- Is MIE less invasive than open surgery?
  
  Less morbidity & mortality?
  Shorter hospital stays?
  Better Quality of Life?

- Similar oncological outcome?

- Learning curve issues.
Trans-thoracic MIE

**VATS + laparoscopy** +/- mini-laparotomy +/- cervicotomy

+/- mini-thoracotomy

**Hybrid techniques:**

VATS +/- minithoracotomy + laparotomy +/- cervicotomy

Laparoscopy +/- mini-laparotomy + thoracotomy +/- cervicotomy

Trans-hiatal MIE

**Laparoscopy** +/- mini-laparotomy + cervical/thoracic anastomosis

+/- robotic

>28 different operations are called « MIE »

→ **Comparison extremely difficult !!**
Open versus minimally invasive esophagectomy: a single-center case controlled study

Abstract

Background Recent advances in laparoscopic and thoracoscopic surgery have made it possible to perform esophagectomy using minimally invasive techniques. Although technically complex, recent case studies showed that this approach was feasible and possible hospital stay [MIE: 12 days (range = 8–46) vs. OE: 24 days (range = 10–79), p = 0.001] was significantly shorter in the minimally invasive group. However, no comparison to open surgery was available to those patients from other centers and lead us to initiate the first prospectively randomized study comparing the morbidity of total minimally invasive esophagectomy with the open technique.

Methods We have performed a case controlled pair-matched study comparing 62 patients who had undergone either minimally invasive (MIE) or open esophagectomy (OE) between 2004 and 2007. Patients were matched by tumor stage and localization, sex, age, and preoperative ASA score. Pathologic stage, operative time, blood loss, transfusion rate, and postoperative respiratory complications were recorded for both groups and compared.

Results Statistically significant differences were seen in the overall number of patients with surgical morbidity (MIE: 25% vs. OE: 74%, p = 0.014), the transfusion rate (MIE: 12.9% vs. OE: 41.9%, p = 0.001), and the rate of postoperative respiratory complications (MIE: 9.7% vs. OE: 38.7%, p = 0.008). There was no difference with respect to lymph nodes and rate of pathologic complete resection. ICU stay [MIE: 3 days (range = 0–15) vs. OE: 6 days (range = 1–40), p = 0.03] and hospital stay [MIE: 12 days (range = 8–46) vs. OE: 24 days (range = 10–79), p = 0.001] were significantly shorter in the minimally invasive group.
Open versus minimally invasive esophagectomy: a single-center case controlled study

Table 3 Surgical parameters

<table>
<thead>
<tr>
<th>Variable</th>
<th>All (n = 62)</th>
<th>MIE (n = 31)</th>
<th>OE (n = 31)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative treatment</td>
<td>23 (37.1%)</td>
<td>15 (48.4%)</td>
<td>8 (25.8%)</td>
<td>ns</td>
</tr>
<tr>
<td>Preoperative stenting</td>
<td>7 (11.3%)</td>
<td>5 (16.1%)</td>
<td>2 (6.5%)</td>
<td>ns</td>
</tr>
<tr>
<td>Reconstruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stomach PU</td>
<td>60 (96%)</td>
<td>30 (96.8%)</td>
<td>30 (96.8%)</td>
<td>ns</td>
</tr>
<tr>
<td>Colon IP</td>
<td>2 (3.2%)</td>
<td>1 (3.2%)</td>
<td>1 (3.2%)</td>
<td></td>
</tr>
<tr>
<td>Orthotopic</td>
<td>50 (80.6%)</td>
<td>29 (93.5%)</td>
<td>21 (67.7%)</td>
<td>0.011*</td>
</tr>
<tr>
<td>Retrosternal</td>
<td>12 (19.4%)</td>
<td>2 (6.5%)</td>
<td>10 (32.3%)</td>
<td></td>
</tr>
<tr>
<td>Anastomosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand-sewn</td>
<td>44 (71%)</td>
<td>16 (51.6%)</td>
<td>28 (83.9%)</td>
<td>0.001*</td>
</tr>
<tr>
<td>Stapled</td>
<td>18 (29%)</td>
<td>15 (48.4%)</td>
<td>3 (9.7%)</td>
<td></td>
</tr>
<tr>
<td>Cervical</td>
<td>41 (66.1%)</td>
<td>16 (51.2%)</td>
<td>25 (80.6%)</td>
<td>0.02*</td>
</tr>
<tr>
<td>Intrathoracic</td>
<td>21 (33.9%)</td>
<td>15 (48.8%)</td>
<td>6 (19.4%)</td>
<td>0.012*</td>
</tr>
<tr>
<td>Duration of surgery (min)</td>
<td>405 (240–600)</td>
<td>411 (270–600)</td>
<td>400 (240–550)</td>
<td>ns</td>
</tr>
<tr>
<td>Transfusion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of patients</td>
<td>17 (27.4%)</td>
<td>4 (12.9%)</td>
<td>13 (41.9%)</td>
<td>0.011**</td>
</tr>
<tr>
<td>Number of blood units</td>
<td>0.9 ± 1.9</td>
<td>0.52 ± 1.86</td>
<td>1.29 ± 1.95</td>
<td>0.014***</td>
</tr>
<tr>
<td>Number of invest. LNNs</td>
<td>19.2 ± 10.4</td>
<td>17.9 ± 7.74</td>
<td>20.52 ± 12.6</td>
<td>ns</td>
</tr>
<tr>
<td>Type of resection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R0</td>
<td>59 (95.2%)</td>
<td>29 (93.5%)</td>
<td>30 (96.8%)</td>
<td>ns</td>
</tr>
<tr>
<td>R1</td>
<td>3 (4.8%)</td>
<td>2 (6.5%)</td>
<td>1 (3.2%)</td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant with sign-test
**Statistically significant with Mann–Whitney U test
***Statistically significant with Wilcoxon rank test
Is minimally invasive surgery beneficial in the management of esophageal cancer? A meta-analysis

Kamal Nagpal · Kamran Ahmed · Amit Vats · Danny Yakoub · David James · Hutan Ashrafian · Ara Darzi · Krishna Moorthy · Thanos Athanasiou

Received: 2 April 2009/Accepted: 8 August 2009 © Springer Science+Business Media, LLC 2010

Conclusion  Minimally invasive esophagectomy is a safe alternative to the open technique. Patients undergoing MIE may benefit from shorter hospital stay, and lower respiratory complications and total morbidity compared with open invasive esophagectomy (MIE) and hybrid minimally invasive esophagectomy (HMIE).

Methods  Literature search was performed using Medline, Embase, Cochrane Library, and Google Scholar databases for comparative studies assessing different techniques of esophagectomy. A random-effects model was used for meta-analysis, and heterogeneity was assessed. Primary outcomes of interest were 30-day mortality and anastomotic leak. Secondary outcomes included operative outcomes, there was no significant difference between the two groups.

Conclusion  Minimally invasive esophagectomy is a safe alternative to the open technique. Patients undergoing MIE may benefit from shorter hospital stay, and lower respiratory complications and total morbidity compared with open esophagectomy. Multicenter, prospective large randomized controlled trials are required to confirm these findings in order to base practice on sound clinical evidence.
Is minimally invasive surgery beneficial in the management of esophageal cancer? A meta-analysis

« Meta-analysis » based on 5 retrospective studies (18-47 MIE pat.)
Surgical outcome comparison after MIE vs OE (historical controls)

Fig. 3 Forest plot for respiratory complications: MIE versus open esophagectomy

Nagpal, Surg Endoscopy 2010
Systematic review: 46 original series (1932 patients)

the morbidity and mortality of MIE is substantial and not inferior to radical open esophagectomy in experienced centers.

Oncological outcome of MIE remains largely unknown by lack of good quality data and selection bias.
**Outcome of MIE: Literature review**

46 studies; 1932 patients

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Mortality</th>
<th>Morbidity (total *)</th>
<th>ICU stay (days)</th>
<th>Hospital stay Median (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall MIE</td>
<td>2.9%</td>
<td>46% (18-100%)</td>
<td>1 (0.5-5)</td>
<td>11.3 (5.5-29)</td>
</tr>
<tr>
<td>VATS+laparoscopy</td>
<td>2.4%</td>
<td>43%</td>
<td>1</td>
<td>9 (6.5-16)</td>
</tr>
<tr>
<td>VATS+laparotomy</td>
<td>2.1%</td>
<td>47%</td>
<td>1</td>
<td>18 (10-28)</td>
</tr>
<tr>
<td>Laparoscop+thoracot</td>
<td>4.8%</td>
<td>48%</td>
<td>2</td>
<td>18 (11-29)</td>
</tr>
<tr>
<td>Laparoscopic THE</td>
<td>4.9%</td>
<td>40%</td>
<td>2.5</td>
<td>10 (5.5-17)</td>
</tr>
</tbody>
</table>

* only major complications reported in many studies

Decker, Nafteux; Eur J Cardiothor Surg 2009
# Outcome of MIE: updated review

<table>
<thead>
<tr>
<th></th>
<th>Mortality</th>
<th>Morbidity total (*)</th>
<th>Respiratory compl.(*)</th>
<th>Vocal cord palsy</th>
<th>Anastom leaks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EJCT Surg 2009</strong></td>
<td>2.9%</td>
<td>46%</td>
<td>22%</td>
<td>7.1%</td>
<td>8.8%</td>
</tr>
<tr>
<td>46 series</td>
<td></td>
<td>(18-100%)</td>
<td>(0-76%)</td>
<td>(0-55%)</td>
<td>(0-25%)</td>
</tr>
<tr>
<td>1932 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Update</strong></td>
<td>2.7%</td>
<td>48%</td>
<td>12%</td>
<td>9.6%</td>
<td>11%</td>
</tr>
<tr>
<td>14 series</td>
<td></td>
<td>(14-93%)</td>
<td>(0-43%)</td>
<td>(0-28%)</td>
<td>(2.7-27%)</td>
</tr>
<tr>
<td>523 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall literature update 2010</strong></td>
<td>2.75%</td>
<td>46.4%</td>
<td>19.2%</td>
<td>9.2%</td>
<td>9%</td>
</tr>
<tr>
<td>58 series</td>
<td></td>
<td>(14.5%-100%)</td>
<td>(0-76%)</td>
<td>(0-55%)</td>
<td>(0- 33%)</td>
</tr>
<tr>
<td>2448 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* only major complications reported in many studies

*Updated from Decker, Nafteux; Eur J Cardiothor Surg 2009*
# Outcome of MIE: updated review

<table>
<thead>
<tr>
<th></th>
<th>Conversion rate</th>
<th>Reoperations</th>
<th>Tracheal injuries</th>
<th>LN yield (median)</th>
<th>Hospital stay (median/days)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EJCTSurg 2009</strong></td>
<td>5.9% (0-36%)</td>
<td>6.1%</td>
<td>0.8%</td>
<td>14</td>
<td>11.3 (5.5-29)</td>
</tr>
<tr>
<td>46 series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1932 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Update</strong></td>
<td>4.6% (0-17%)</td>
<td>5.2% (3-12%)</td>
<td>1.3%</td>
<td>17.9</td>
<td>13.6 (9-21)</td>
</tr>
<tr>
<td>14 series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>523 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall literature update 2010</strong></td>
<td>5.8%</td>
<td>6%</td>
<td>0.9%</td>
<td>14.1</td>
<td>12</td>
</tr>
<tr>
<td>58 series</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2448 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Updated from Decker, Nafteux; Eur J Cardiothor Surg 2009
Fast-track **open** esophagectomy - Literature

*Cerfolio B, Chest 2004*

N=90 pat.    median hospital stay 7 days (6-74)

*Jiang K, World J Gastroenterol. 2009*

N=88 pat.    median hospital stay 7 days (5 - 28)

*Tomaszek S, EurJ Cardioth. Surg 2010*

N= 110 pat.    median hospital stay 7 days (4 - 54)

*Lerut, Nafteux et al. UZ Leuven (unpublished data)*

N=150 pat. (2005-2006)    median hospital stay 8 days

*Luketich J, abstract ASA April 2011 (973 MIE)*

N=973 pat    median hospital stay 8 days
## MIE: Learning curve

<table>
<thead>
<tr>
<th>Series with &lt; 25 cases</th>
<th>Mortality</th>
<th>Morbidity</th>
<th>Respiratory complications</th>
<th>Conversion rate</th>
<th>LN yield median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.9%</td>
<td>60%</td>
<td>31%</td>
<td>6.6%</td>
<td>12 (5-17)</td>
</tr>
<tr>
<td>50 or &gt; cases</td>
<td>2.1%</td>
<td>44%</td>
<td>20%</td>
<td>4.5%</td>
<td>22.5 (16-62)</td>
</tr>
<tr>
<td>100 or &gt; cases</td>
<td>2.2%</td>
<td>46%</td>
<td>19.7%</td>
<td>3.6%</td>
<td>18 (17-62)</td>
</tr>
</tbody>
</table>

* only major complications reported in many studies

*Decker, Nafteux; Eur J Cardiothor Surg 2009*
MIE: the lymph node issue

LN retrieval reported in 36 MIE series / 58 (62%)

Overall LN (median) 14.1 (5 -62)

Transthoracic MIE

Median LN retrieved 17.9 (7-62)

Trans-hiatal MIE

10.5 (5-15)


Minimum of 23 LN is needed
Lymph node retrieval in MIE

Eastern versus Western series?

Lymph nodes yield (median of series)

Eastern Asia series  34.5  (23-62)
(14 series, 733 patients)

Western series  13  (5-18)
(44 series, 1715 patients)
LN yield: Leuven M1E experience

N=65 pts (pT<2 and N0)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>13.8</td>
<td>9</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>2006</td>
<td>12.0</td>
<td>12</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>2007</td>
<td>10.8</td>
<td>9</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>2008</td>
<td>21.8</td>
<td>21</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td>2009</td>
<td>19.3</td>
<td>21</td>
<td>10</td>
<td>28</td>
</tr>
</tbody>
</table>

2010-2011: median 27 LN (17pts)
Leuven MIE experience

January 2005 - January 2010
pT<2 and pN0

175 patients
Mean age 63.7y

74 pts started MIE
Open (OE) N=101
Conversion N=9
MIE N=65

Excluded

- Bleeding (N=1)
- Technical (N=2)
- Adhesions (N=6)

Installation

Abdominal

Thoracic
Abdominal part
Thoracic part

Subcarinal – Recurrent nerve – Thoracic duct
Neck anastomosis
Population: surgery

- Minimally invasive esophagectomy: N=65

- Open esophagectomy:
  - Right thoracotomy- laparotomy: N=18
  - Left thoracoabdominal: N=83

Outcome

- **Hospital stay:**
  - 19.2 d (OE) vs. 14.4 d (MIE) \( p = 0.1 \)

- **Mortality:**
  - 1.98% (OE) vs. 3.08% (MIE) \( p = 0.65 \)

- **Morbidity:**
  - 40% (OE) vs. 32% (MIE) \( p = 0.34 \)

Outcome

- Surgical parameters:

```
Outcome
- Surgical parameters:

Values for Bloodloss and Duration:
- Bloodloss: p=0.01
  - OE: 491
  - MIE: 290
- Duration: p=0.001
  - OE: 322
  - MIE: 375

```
Outcome

- Morbidity:

- Admission/ICU: 20.8%, p=0.02
- Pulmonary: 46.5%, p=0.008
- Gastroesophageal: 20.0%, p=0.005

QoL evaluation

- EORTC approved QLQ-C30 and EOS-18 questionnaires
- At baseline and three monthly post surgery for the first year
- Response rate: >85%

Quality of Life

**Fatigue**

P = 0.09

**Pain general**

P = 0.05

**GI pain**

P = 0.01

**Role functioning**

P = 0.02

Oncological outcome: MIE vs OE
Oncological outcome: MIE vs OE

Review of 58 papers, N= 2,448 patients

Median follow-up in MIE series: 19 m (4 - 42)

15 papers report 1 y overall survivals: 77% (65-94%)
8 papers reported 3 y survivals: 43% (25-62%)

5 papers reported 5 y survivals: 41% (22-52%)

the later had a median LN yield of 17.5 (17 to 62)

Updated from Decker, Nafteux; Eur J Cardiothor Surg 2009
Survival after VATS+laparotomy +3-F LND MIE

N=112

VATS
5-6 ports
+/- mini-thoracotomy

“8 cm” mini-laparotomy

3 Field LN dissection

median 62 lymph nodes

overall 5y-survival 62%

Early cancer (Leuven experience)
Survival and recurrence rate

- **5 year cancer specific survival**
  - pTIS/1a: 95.4% (OE) vs. 95.1% (MIE) \( p = 0.90 \)
  - pT1b: 76.2% (OE) vs. 100% (MIE) \( p = 0.14 \)

- **5 year recurrence-free survival**
  - pTIS/1a: 94.1% (OE) vs. 96.9% (MIE) \( p = 0.75 \)
  - pT1b: 81.5% (OE) vs. 100% (MIE) \( p = 0.14 \)

Conclusion: MIE status in 2011

- No reduction in overall complications
- Potentially less pulmonary complications
- Hospital stay not shorter than for “open” fast-track
- Potentially better HR-QoL after 1 to 3 months post-op. but no difference after 1 year
- Oncological valid for stage I, validity for stage II-III still unknown
- Learning curve: MIE restriction to high-volume units?
This is the future of Open Surgery!

Surgeons must evolve and develop less morbid procedures and embrace new technology!

J. Luketich
Surgical approach may be of little importance for outcome!

Surgeons should perform en-bloc resections with adequate lymph node dissections!

or

the future of esophageal cancer Surgery might be chemo-radiotherapy!
### Background

- Morbidity and mortality have declined markedly

#### Historical Data

<table>
<thead>
<tr>
<th></th>
<th>EARLAM/CUNHA MELO 1980</th>
<th>MULLER 1999</th>
<th>JAMIESON 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>83,783</td>
<td>76,911</td>
<td>70,751</td>
</tr>
<tr>
<td>Operability</td>
<td>58%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resectability</td>
<td>19%</td>
<td>56%</td>
<td></td>
</tr>
<tr>
<td>Oper. mort.</td>
<td>19%</td>
<td>13%</td>
<td>8.8%</td>
</tr>
<tr>
<td>5-yr survival</td>
<td>4%</td>
<td>10%</td>
<td>28%</td>
</tr>
</tbody>
</table>