Clinical Indications and Results Following Chest Wall Resection for Recurrent Malignant Pleural Mesothelioma

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Presenter Disclosure
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No Relationships to Disclose
Background

• Based on literature review median survival after surgery-based multi-modal therapy for Malignant Pleural Mesothelioma (MPM) is approximately 18 months

• Recurrent disease in MPM after primary EPP or P/D limits survival

• Most common site of recurrence is ipsilateral hemithorax in 35% of all patients and 67% of all recurrences¹

• Trials of second or third line chemotherapy or radiation therapy for recurrent disease have been disappointing

• The role for surgery in this setting has not been defined

Objectives

• Review the outcomes of patients who underwent chest wall resection (CWR) for isolated ipsilateral recurrent disease at our institution following a Macroscopic Complete Resection (MCR) via an EPP or P/D.

• Define the role and indications for a CWR in this selected subset of patients
Material and Methods

- Review of International Mesothelioma Program patient data registry
- Identify cases who had a CWR for isolated ipsilateral recurrence
- Review of demographic, clinical and pathologic features of these patients
- Compute Time to Recurrence (TTR) and overall survival from the time of CWR
Results

• 1147 patients (1988-2011)
  
  EPP, n=794
  P/D, n=348

• 47 patients (4.1%) CWR
## First Surgery (EPP or P/D)

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>61.9y</td>
</tr>
<tr>
<td>(mean, range)</td>
<td>(27.3-81.9)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>36 (77%)</td>
</tr>
<tr>
<td>Female</td>
<td>11 (23%)</td>
</tr>
<tr>
<td><strong>Histology</strong></td>
<td></td>
</tr>
<tr>
<td>Epithelial</td>
<td>32 (68%)</td>
</tr>
<tr>
<td>Biphasic</td>
<td>15 (32%)</td>
</tr>
<tr>
<td><strong>Laterality</strong></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>30 (64%)</td>
</tr>
<tr>
<td>Left</td>
<td>17 (36%)</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td></td>
</tr>
<tr>
<td>EPP</td>
<td>32 (68%)</td>
</tr>
<tr>
<td>PDC</td>
<td>15 (32%)</td>
</tr>
<tr>
<td><strong>Mediastinal nodal metastasis</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10 (21%)</td>
</tr>
<tr>
<td>No</td>
<td>37 (79%)</td>
</tr>
<tr>
<td><strong>NeoAdjuvant Chemotherapy</strong></td>
<td>3 (6%)</td>
</tr>
<tr>
<td><strong>Adjuvant Chemotherapy</strong></td>
<td>17 (36%)</td>
</tr>
<tr>
<td><strong>Adjuvant radiation therapy</strong></td>
<td>20 (43%)</td>
</tr>
<tr>
<td><strong>Hyperthermic intra-operative chemotherapy</strong></td>
<td>24 (51%)</td>
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## Chest Wall Resection (CWR)

<table>
<thead>
<tr>
<th></th>
<th>N=47</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary closure</td>
<td></td>
<td>63%</td>
</tr>
<tr>
<td>Reconstruction with Goretex</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Muscle Flap</td>
<td></td>
<td>9%</td>
</tr>
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<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>2\textsuperscript{nd} CWR</td>
<td></td>
<td>34%</td>
</tr>
<tr>
<td>3\textsuperscript{rd} CWR</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Length of Stay</td>
<td></td>
<td>3 days</td>
</tr>
<tr>
<td>30 day mortality</td>
<td></td>
<td>0%</td>
</tr>
</tbody>
</table>

Muscle Flap

![Muscle Flap Image](image-url)
TTR following primary MCR

- Epithelial n=32, MS=23.4 mo
- Biphasic n=15, MS=11.2 mo

p =0.022
Overall Survival following primary MCR surgery

Proportion Surviving

Survival after primary MCR (mos)

All Pts  n=47, MS 44.9 mo

Survival after primary MCR (mos)

Epithelial  n=32, MS 53 mo

Biphasic  n=15, MS 21 mo

p=0.006
Survival after CWR

Proportion Surviving

Survival after CWR (mos)

Epithelial  n=32, MS 20 mo
Biphasic  n=15, MS 7 mo

p=0.01
Epithelial histology
Survival after CWR by time to recurrence

- Survival after CWR (mos)
- 80
- 70
- 60
- 50
- 40
- 30
- 20
- 10
- 0
- Survival after CWR (mos)

Proportion Surviving

- TTR ≥ 24 mo
- N=15  MS=36 mo
- 12 mo ≤ TTR < 24 mo
- N=10  MS=17 mo
- TTR < 12 mo
- N=7   MS=9 mo

P = 0.0012
Biphasic histology
Survival after CWR by time to recurrence

Proportion Surviving

Survival after CWR (mos)

- TTR > 10 mo
- TTR ≤ 10 mo

N=10 MS=16 mo
N=15 MS=3 mo
P = 0.002
Conclusions

• CWR for isolated ipsilateral recurrent MPM is a safe procedure with minimal morbidity and mortality
• Median survival after CWR for recurrent disease is 17.5 months
• Therefore a surgical approach in this selected subset of patients appears justifiable.
• The shorter the time to recurrence, the shorter the survival following CWR
• Isolated re-recurrence does not preclude repeat CWR
• Further exploration on the potential benefits of this approach with respect to the duration and quality of life is warranted
Survival for patients who had repeat CWR

Median 59.9 months

