Long-term Follicular Cancer

ENDORAMA
2/21/2014
HPI

• 66 year old male
• 1970’s - Left thyroid lobectomy for benign disease
• 2003 – Right completion lobectomy and central neck dissection for follicular thyroid carcinoma
• Treated twice with RAI (12/03, 8/04)
• Neck Ultrasound showed a right-sided neck node in the thyroid bed
  – Ethanol ablation
HPI

- October 2013 – new palpable cervical node
- Neck ultrasound – node around the location of the isthmus
<table>
<thead>
<tr>
<th>PMHx</th>
<th>PSurgHx</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HTN</td>
<td>• As above</td>
</tr>
<tr>
<td>• Arthritis</td>
<td></td>
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<tr>
<td>• Gout</td>
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<tr>
<td>• Hyperlipidemia</td>
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</table>
Surgery

- Pretracheal LN was superficial and adjacent to the strap muscles
  - Confirmed by frozen section to be thyroid cancer
- Complete right central lymph node dissection
  - Thyroid remnant with scar tissue overlying right RLN
• 82 patients for review
  – 49 patients from original study
  – 33 patients found in our pathology bank
• Original study followed patients for average of 10.7 years
  – 18% recurrence rate (disease in neck or distant more than 12 months from original surgery)
  – 16% thyroid specific mortality
  – 8/9 patients with recurrence died of thyroid specific complications
  – Recurrence was not seen past 13 years
Fig. 5. Survival is shown for patients under age 45 yr (0) or over age 45 yr (1).
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mean (years)</th>
<th>Range (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age at Dx</td>
<td>41 ± 16</td>
<td>14-79</td>
</tr>
<tr>
<td>Average Age at Death</td>
<td>69 ± 17</td>
<td>32-94</td>
</tr>
<tr>
<td>Years of Death followup</td>
<td>20.8 ± 13.1</td>
<td>0.1-48</td>
</tr>
<tr>
<td>Years of Recurrence followup</td>
<td>19.6 ± 13.4</td>
<td>0.2-48</td>
</tr>
</tbody>
</table>
All Cause Mortality Pre-Path

**Kaplan-Meier survival estimate**

All Cause Mortality FCC/HCC (pre-path review)

- Median time to death: 36 years.
- 39.4% survival at 48 years.
Thyroid-related Deaths Pre-path

Kaplan-Meier survival estimate
Thyroid Related Mortality FCC/HCC (pre-path review)

FCC: 71.8% disease-free survival at 48 years
Recurrence Pre-Path

Kaplan-Meier survival estimate
Recurrence for FCC/HCC (pre-path review)

FCC: 77.9% recurrence-free at 48 years
Path-Review

• Of the 54 specimens (out of 82) that were reviewed
  – 24 PTC/FV-PTC
  – 14 FCC (Follicular cell carcinoma)
  – 4 HCC (Hurthle cell carcinoma)
  – 12 benign (FTA, HCA, fibrosis)
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mean/ Median (years)</th>
<th>Range (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age at diagnosis</td>
<td>43 ± 15</td>
<td>16-74</td>
</tr>
<tr>
<td>Average age at death</td>
<td>67 ± 18</td>
<td>32-94</td>
</tr>
<tr>
<td>Years to Death FU (median)</td>
<td>21</td>
<td>0.1-48</td>
</tr>
<tr>
<td>Years to Recurrence FU (median)</td>
<td>21</td>
<td>0.2-48</td>
</tr>
</tbody>
</table>
Kaplan-Meier survival estimates
All Cause Mortality after Path Review

Median time toDeath from all
causes:
FCC: 16 years
HCC: 10 years
FCC: 24.5% at 32
years

Log rank p=0.0001
Kaplan-Meier survival estimates
Thyroid Specific Mortality after Path Review

FCC: 50.2% survival at 32 years
HCC: 66.7% survival at 34 years

Log rank p=0.0003
FCC: 50.9% recurrence-free at 32 years
HCC: 71.4% recurrence-free at 34 years

Log rank p=0.0003
Path Review

- 54 patients reviewed
  - 24 PTC/FV-PTC
  - 9 minimally invasive FCC/HCC
  - 2 widely invasive FCC/HCC
  - 7 metastatic or poorly differentiated FCC/HCC
  - 12 benign
Kaplan-Meier survival estimates
All Cause Mortality after path review

Median time to Death from all causes:
MI: 27 years
WI: 1 month
Met/poor diff: 9 years

Log rank p<0.0001
Kaplan-Meier survival estimates
Thyroid Specific Mortality post path review

Median time to Death from thyroid cancer:
WI: 1 month
Met/poor diff: 11 years

Log rank p<0.0001
Kaplan-Meier survival estimates

Recurrence post path review

Median time to recurrence:
WI: 4 months
Met/poor diff: 10 years

Log rank p<0.0001
<table>
<thead>
<tr>
<th>Category</th>
<th>Median Survival Time (years)</th>
<th>Survival/Recurrence-Free</th>
<th>Follow-up Time (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Path FCC All Cause Mortality</td>
<td>36</td>
<td>39.4%</td>
<td>48</td>
</tr>
<tr>
<td>Pre-Path FCC Thyroid Mortality</td>
<td>71.8%</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Pre-Path FCC Recurrence</td>
<td>77.9%</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Post-Path FCC All Cause Mortality</td>
<td>16</td>
<td>24.5%</td>
<td>32</td>
</tr>
<tr>
<td>Post-Path FCC Thyroid Mortality</td>
<td>52.2%</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Post-Path FCC Recurrence</td>
<td>50.9%</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>
Kaplan-Meier survival estimates
All-Cause Survival for FCC pre and post path

Log rank p=0.002
Kaplan-Meier survival estimates

Recurrence for FCC pre and post path review

Log rank p=0.0179
<table>
<thead>
<tr>
<th>FCC&amp;HCC</th>
<th>Median survival at</th>
<th>At 48 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-cause survival</td>
<td>36 years</td>
<td>39%</td>
</tr>
<tr>
<td>Thyroid Specific survival</td>
<td></td>
<td>71%</td>
</tr>
<tr>
<td>Recurrence free survival</td>
<td></td>
<td>78%</td>
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