Contemporary Surgical Management of Differentiated Thyroid Carcinoma

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Nothing to declare

No disclosures
Thyroid cancer incidence annual trends in the US

Rate per 100,000 population

- Male incidence
- Female incidence
<table>
<thead>
<tr>
<th>Causes of Thyroid Nodules</th>
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</thead>
<tbody>
<tr>
<td>Benign nodular goiter</td>
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<tr>
<td>Chronic lymphocytic thyroiditis</td>
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<tr>
<td>Simple or hemorrhagic cysts</td>
</tr>
<tr>
<td>Follicular adenomas</td>
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<tr>
<td>Subacute thyroiditis</td>
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<tr>
<td>Papillary carcinoma</td>
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<tr>
<td>Follicular carcinoma</td>
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<tr>
<td>Hürthle cell carcinoma</td>
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<tr>
<td>Poorly differentiated carcinoma</td>
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<tr>
<td>Medullary carcinoma</td>
</tr>
<tr>
<td>Anaplastic carcinoma</td>
</tr>
<tr>
<td>Primary thyroid lymphoma</td>
</tr>
<tr>
<td>Sarcoma, teratoma, and miscellaneous tumors</td>
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<tr>
<td>Metastatic tumors</td>
</tr>
</tbody>
</table>
Differentiated Thyroid Malignancy

- Follicular cell origin
- Parafollicular C cells
- Lymphoma
- Metastatic
Papillary Thyroid Carcinoma

- 75% of all thyroid carcinomas in the US
- 3rd to 4th decade
- Spreads to regional nodes
- Multicentric
- Associated with radiation
Follicular Thyroid Carcinoma

- 15% of thyroid carcinomas
- Occurs in a slightly older age range
- Not associated with radiation exposure
- Lymph node metastasis is unusual
Treatment

- Surgical Excision: Thyroidectomy
- Radioactive I\textsubscript{131}
- Thyroid Hormone Suppression
- Ongoing Surveillance
MACIS\textsuperscript{13} Score = 3.1 (if age <40 years) or 0.08 × age (if age ≥40 yrs) + 0.3 × tumor size (cm maximum diameter) + 1 (if incompletely resected) + 1 (if locally invasive) + 3 (if distant spread)

Survival by MACIS score (20-yr):
<6 = 99%
6-6.99 = 89%
7-7.99 = 56%
≥8 = 24%
Extent of Thyroid Resection

- Nodulectomy
- Lobectomy
- Total Thyroidectomy
Extent of Thyroid Resection

- Nodulectomy
- Lobectomy
- Total Thyroidectomy
TABLE 2. Cox Proportional Hazards Analysis Stratified by Tumor Size Demonstrating the Risk of Recurrence and Death for Patients Who Underwent Lobectomy Compared to Total Thyroidectomy for PTC

<table>
<thead>
<tr>
<th></th>
<th>Hazard Ratio (95% Confidence Interval)</th>
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<tbody>
<tr>
<td></td>
<td>All Patients</td>
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<tr>
<td>Recurrence</td>
<td></td>
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<tr>
<td>Total thyroidectomy</td>
<td>1.00 (Referent)</td>
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<tr>
<td>Lobectomy</td>
<td>1.57 (1.20–2.06)</td>
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<tr>
<td></td>
<td>(P = 0.001)</td>
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<tr>
<td>Survival</td>
<td></td>
</tr>
<tr>
<td>Total thyroidectomy</td>
<td>1.00 (Referent)</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>1.21 (1.02–1.44)</td>
</tr>
<tr>
<td></td>
<td>(P = 0.027)</td>
</tr>
</tbody>
</table>

Hazard Ratios greater than 1.0 indicate increased risk of recurrence or death.

*Adjusted for gender, age, race, nodal status, distant metastases, socioeconomic factors, RAI administration, year of diagnosis, and hospital volume.
Key Recommendations

**Total Thyroidectomy** for all high risk thyroid cancer or tumors > 1 cm.

**Thyroid Lobectomy** may be appropriate for Low Risk Thyroid cancer ≤ 1 cm
Other Reasons to Consider Total Thyroidectomy

- Follow Thyroglobulin Levels
- Contralateral Nodules
- Ease of follow-up
- Patient Preference
Neck Dissection
Prophylactic Central Neck Dissection?

- No effect on recurrence
- No effect on mortality
- Can result in upstaging
- Overtreatment with RAI

- pCND safe when performed by experienced surgeons
  - Improve stage accuracy
  - Affect future treatment plans
  - Improve thyroglobulin monitoring
  - Reduce surveillance burden
Key Recommendations

Regional, **en-block neck dissection** for all clinically apparent disease.

Consider **pCND** for all high risk thyroid cancer or tumors > 1-2 cm.
Thank You

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