



To Operate or Not: Which Thyroid Nodules Need Surgery

Endocrine Surgical
Oncology
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- Thyroid nodules are found in about 7% of the world's population or in over 850 million persons

- Clinical thyroid cancer is present in about 40 patients per million. A selective approach to patients with thyroid nodules is appropriate.



Thyroid cancer is the most rapidly increasing cancer in women and is now the 7th most common cancer in women.



- From 1992 to 2001 age-adjusted mortality was stable for women and increased 2.3% per year in men. (Sherman S, Phagin J: Thyroid 15: 303-4, 2005.)
- The cause-specific 10 year survival rate for papillary thyroid cancer is 93% (Hundahl SA et al: Cancer 83: 2638-2648, 1988.)

Factor Predisposing to Thyroid Cancer



- History of radiation exposure to neck.
- Family history of thyroid cancer.
 - ◆ Isolated (FNMTC).
 - ◆ Associated with Cowden's Syndrome/ Gardeners' Syndrome/ Carney's Syndrome/ Wermer's Syndrome (In Japanese)/ MEN2/ MEN1.
- Multinodular goiter.
- Goitrogens/ Iodine deficiency and perhaps excess/ Carcinogens.

Suspicious Thyroid Nodule



- History
 - ◆ Growing nodule.
 - ◆ Children and older patients.
 - ◆ Symptomatic nodule.
 - ◆ Family history of thyroid cancer or radiation exposure.
- Physical Examination
 - ◆ Hard isolated nodule.
 - ◆ Fixed nodule.
 - ◆ Ipsilateral adenopathy.
 - ◆ Distant metastases.
- Localizing Studies
 - ◆ Ultrasonography/ radionuclide/ CT, MRI, PET.

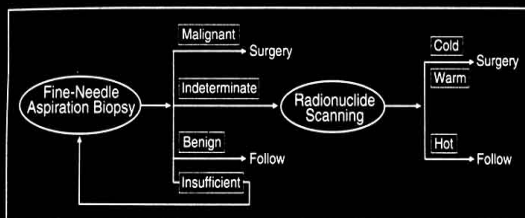
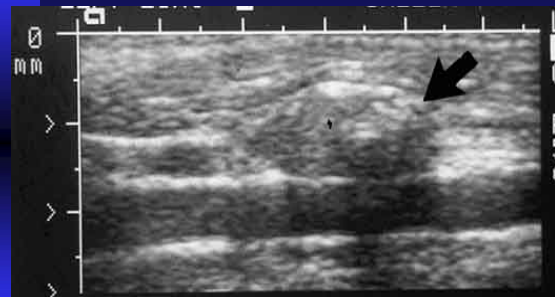


Figure 3. Sequence for the Evaluation of Patients with a Thyroid Nodule. The results of radionuclide scanning are expressed as "hot," "warm," or "cold" to indicate the function of the nodule in relation to the normal thyroid tissue in the patient.

Preoperative ultrasonography of thyroid and adjacent lymph nodes.



- Can detect suspicious thyroid nodules in multinodular goiter.
- Can detect suspicious lymphadenopathy

Indications for Operation for Nodular Goiter

- Symptoms of airway, esophageal, or superior vena caval obstruction.
- Thyroid enlargement despite nonoperative treatment.
- Fine-needle aspiration biopsy positive or suspicious for malignancy.
- Radiologic finding of tracheal deviation or compression.
- Substernal goiter.
- Cosmetic deformity/ patient preference.

Superior Mediastinal Mass



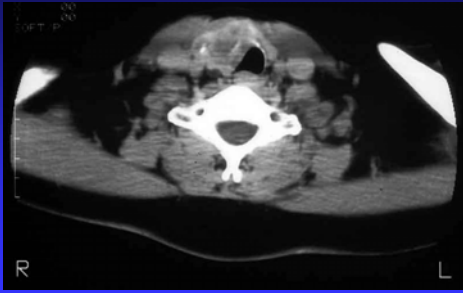
Large Mass Left Lobe



Position of Incision



Tracheal Invasion



Resected Invaded Trachea

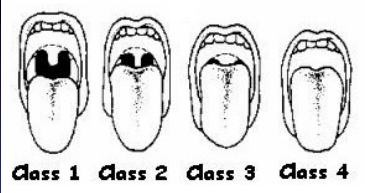


Pre-Op Evaluation

- As for all operations
- Direct laryngoscopy
 - ◆ Reoperation
 - ◆ Any change in voice
- Consider Difficulties with intubation

Mallampati Score

- Visual examination of posterior wall of pharynx
- 4 structures: the soft palate, uvula, faucial pillars, and posterior wall are visible
- Divided into 4 classes



Class I: Soft palate, uvula, pillars, and posterior wall are visible
 Class II: Upper part of pillars and soft palate are visible
 Class III: Only soft palate is visible
 Class IV: None of the structures are visible

Thyromental Distance

- Measured from the thyroid cartilage to the bony point of the chin with neck extended
- Distance > 6 cm associated with easy intubation



Surgical Techniques

- Position and size of incision
- Central or lateral approach
- Nerve monitor?



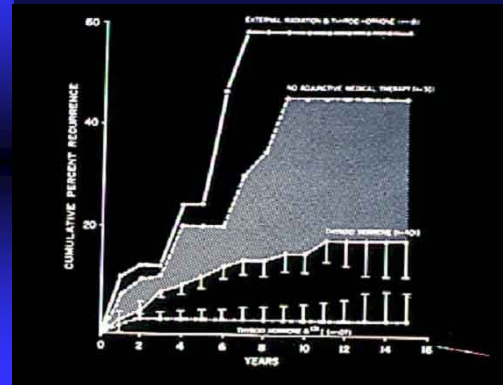
Natural History, Treatment and Course of Papillary Thyroid Carcinoma (Complications)

Hypoparathyroidism		
		(Percent)
Experienced surgeon	0/84	(0)
Lobectomy or subtotal	1/40	(2.5)
Overall - all patients	16/269	(5.9)
Overall - total or near total	15/178	(8.4)
Other institutions	10/75	(13.3)

Recurrent laryngeal nerve		
		(Percent)
Overall - total or near total	3/178	(1.7)

DeGroot LJ et al. *JCEM* 71:414-424, 1990

Extent of Operation I131 & TSH



Conclusion

- A selective approach for the patient with a thyroid nodule.
- Ultrasound and FNA cytology have allowed earlier diagnosis and appropriate treatment.