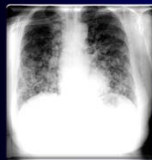


Recurrent Thyroid Cancer: What to do & When

A risk adapted approach

*R Michael Tuttle, MD
Professor of Medicine
Memorial Sloan Kettering Cancer Center
New York, New York*

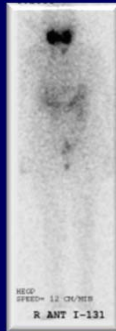
Increasingly Sensitive Tools for Disease Detection



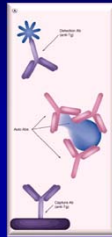
CXR



?



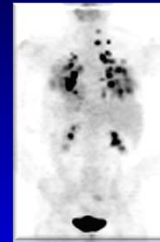
RAI



Supp Tg
Stim Tg




Ultrasound




FDG PET

The result
Much higher rates of
persistent disease than
previously known

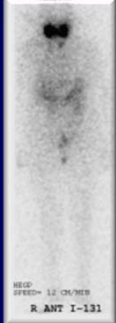
Increasingly Sensitive Tools for Disease Detection



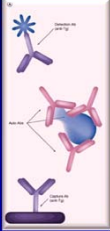
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PE



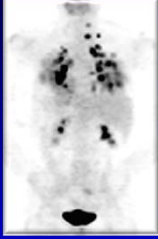
RAI



**Supp Tg
Stim Tg**



Ultrasound

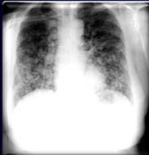


FDG PET


Consequences of Occult Disease Detection

- Repeated doses of RAI
- More therapeutic neck dissections for recurrent disease
- More therapeutic neck dissections as primary therapy
- Prophylactic neck dissections for occult disease

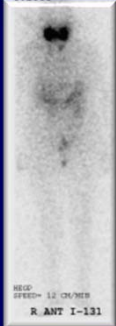
Increasingly Sensitive Tools for Disease Detection



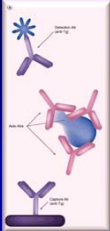
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PE



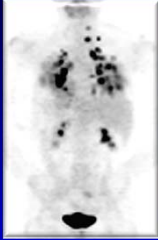
RAI



**Supp Tg
Stim Tg**



Ultrasound



FDG PET

Results of these additional treatments

- Sometimes were beneficial
- Repeated doses of RAI seldom cured the patient
- Most patients had persistent disease after repeat neck dissections
- Small incidence of clinically significant side effects

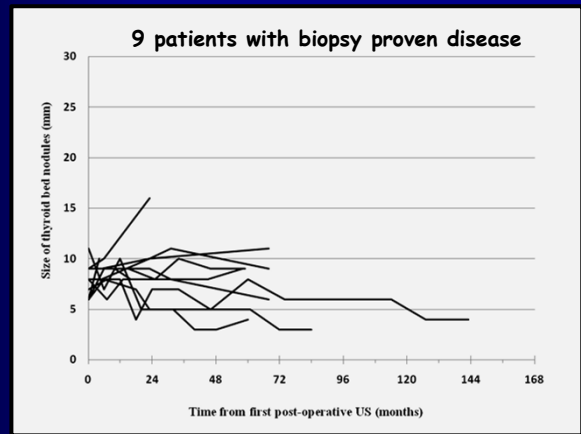
THYROID
 Volume 21, Number 8, 2011
 © Mary Ann Liebert, Inc.
 DOI: 10.1089/thy.2011.0011

THYROID CANCER AND NODULES

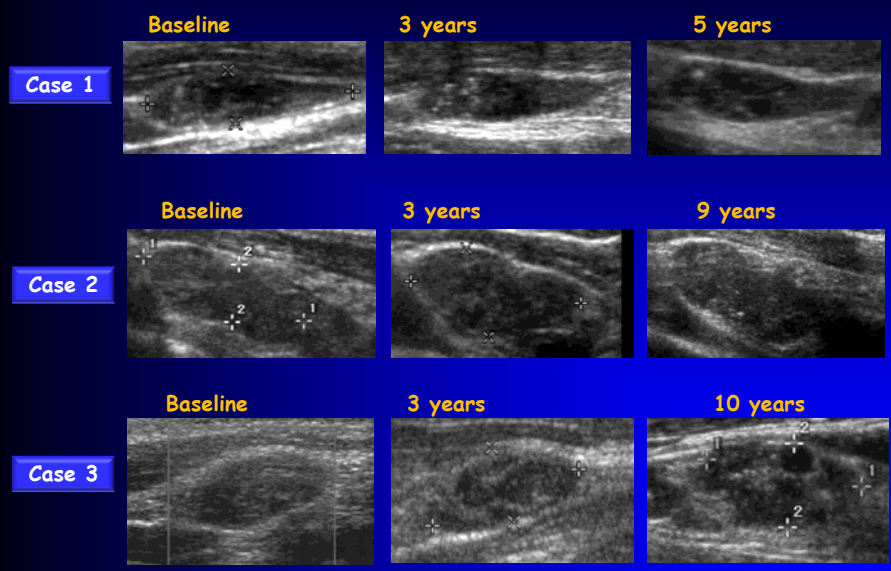
Ultrasonographically Detected Small Thyroid Bed Nodules Identified After Total Thyroidectomy for Differentiated Thyroid Cancer Seldom Show Clinically Significant Structural Progression

Geneviève Rondeau,¹ Stephanie Fish,¹ Lucy E. Hann,² James A. Fagin,¹ and R. Michael Tuttle¹

Subcm thyroid bed nodules
191 patients
5 mm (2-11 mm)
9% increased in size
Over 5 yrs follow up



FNA Proven Cervical LN Mets



E Robenshtok, JCEM 2012

Suspicious Cervical Lymph Nodes Detected after Thyroidectomy for Papillary Thyroid Cancer Usually Remain Stable Over Years in Properly Selected Patients
JCEM 2012

E. Robenshtok, S. Fish, A. Bach, Jose M. Dominguez, A. Shaha, and R. M. Tuttle

166 differentiated thyroid cancer patients
With suspicious lateral neck LN's by US (1.3 cm)
Followed with serial US (median of 6)
Median of 3.5 yrs (range 1-13 yrs)

Growth of Suspicious LN

≥ 3 mm	33/166 (20%)
≥ 5 mm	15/166 (9%)

Time to progression 2 years

FNA Proven Cervical LN Mets

22 patients with documented PTC in the abnormal LN's



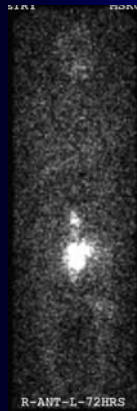
Salvage therapy was effective at the time of progression

Expected selection bias: none with PDTTC, 91% classical PTC

E Robenshtok, JCEM 2012

Observation of Abnormal Tg in the Absence of Structurally Identifiable Disease

25 yr old male, 3 cm PTC, 12/38 LN +
 100 mCi RAI

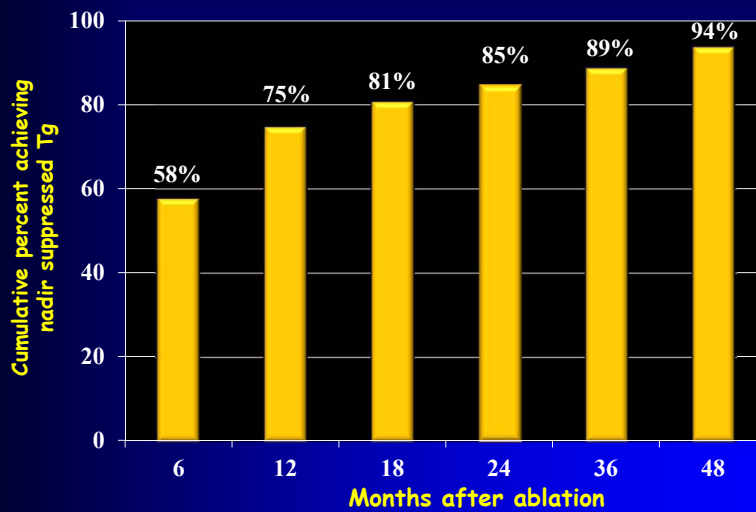


Diagnostic RAI Scan
 1 year later
 US negative
 Supp Tg 5.3
 Stim Tg 26.9

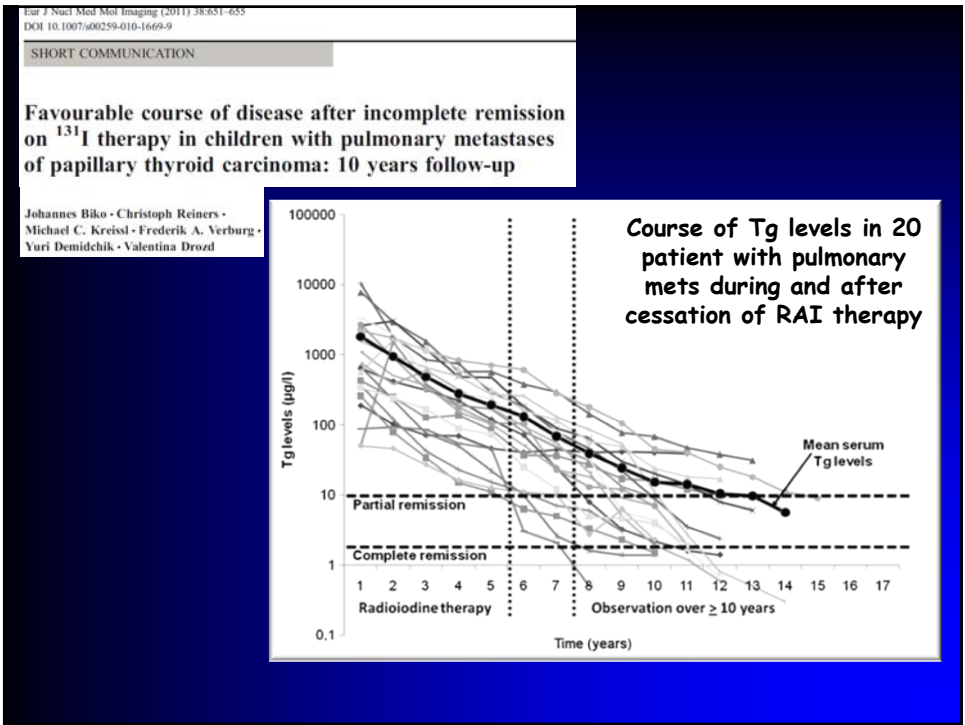
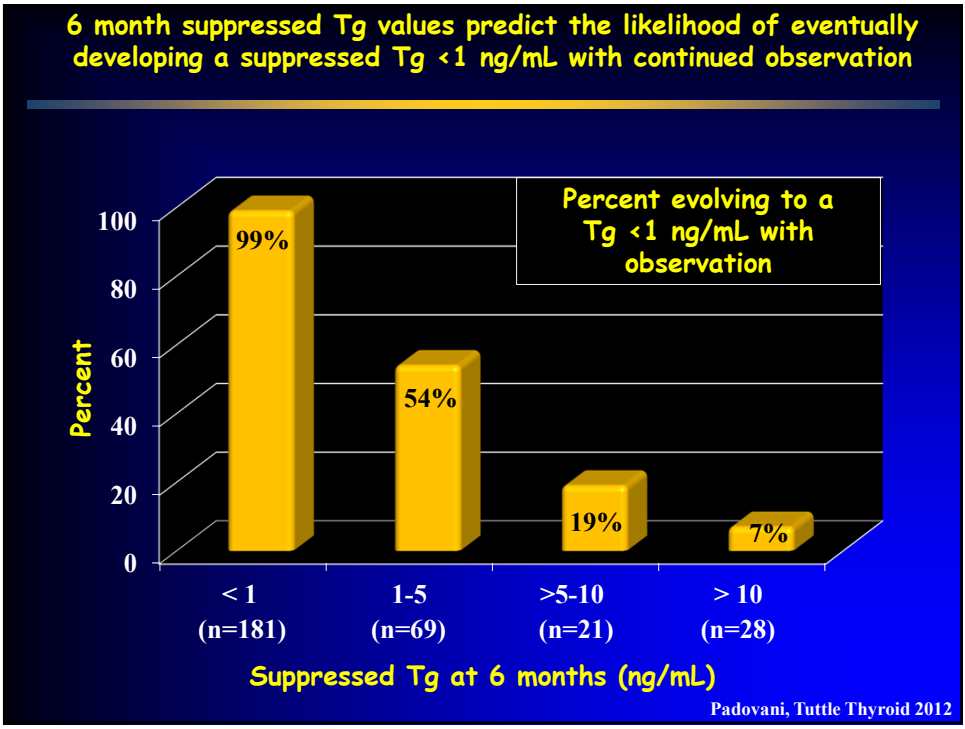
Supp Tg

2001	5.3
2002	5.1
2003	5.0
2004	4.8
2005	4.9
2006	4.5
2007	4.1
2008	3.9
2009	3.8
2010	3.5
2011	2.9
2012	2.5
2013	2.1

Serum Tg levels continue to decline for years after total thyroidectomy and RAI remnant ablation with observation

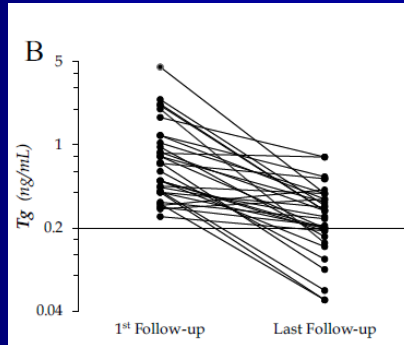


Padovani, Tuttle Thyroid 2012

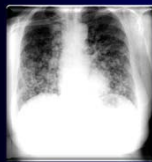


Long-Term Surveillance of Papillary Thyroid Cancer Patients Who Do Not Undergo Postoperative Radioiodine Remnant Ablation: Is There a Role for Serum Thyroglobulin Measurement?

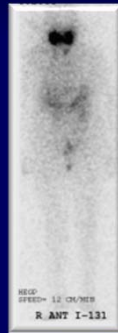
Cosimo Durante, Teresa Montesano, Marco Attard, Massimo Torlontano, Fabio Monzani, Giuseppe Costante, Domenico Meringolo, Marco Ferdeghini, Salvatore Tumino, Livia Lamartina, Alessandra Paciaroni, Michela Massa, Laura Giacomelli, Giuseppe Ronga, and Sebastiano Filetti on behalf of the PTC Study Group



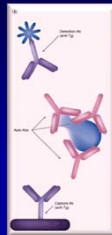
Increasingly Sensitive Tools for Disease Detection



CXR



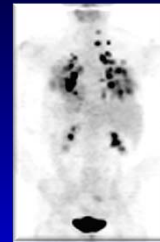
RAI



**Supp Tg
Stim Tg**



Ultrasound



FDG PET



PE

Clinical Findings
 Disease foci that require treatment
 Low level Tg abnormalities often stable or resolve spontaneously
 Structural disease that is often stable for years
What is the optimal management of recurrent disease?

Risk Stratification

Biochemical vs. Structural

Risk Associated with Recurrent Disease

Impact on Disease Specific Mortality

Risk of Additional Therapies

Risk of Observation

Observation vs Intervention

Biochemical Incomplete Response

Persistent abnormal thyroglobulin values in the absence of localizable disease

Trend in Tg

Tg doubling time

Structural Incomplete Response

Persistent or newly identified loco-regional or distant metastases

Size

Location

Rate of change

FDG Avidity

Histology

Goals of Follow-up?

Evolving Management Approach

1990's

Seek and destroy residual/recurrent thyroid cancer
Surgery/RAI/EBRT/Systemic therapy
To improve clinical outcomes

2015

Identify clinically significant residual/recurrent disease
Observe clinically insignificant disease
Treat clinically significant disease