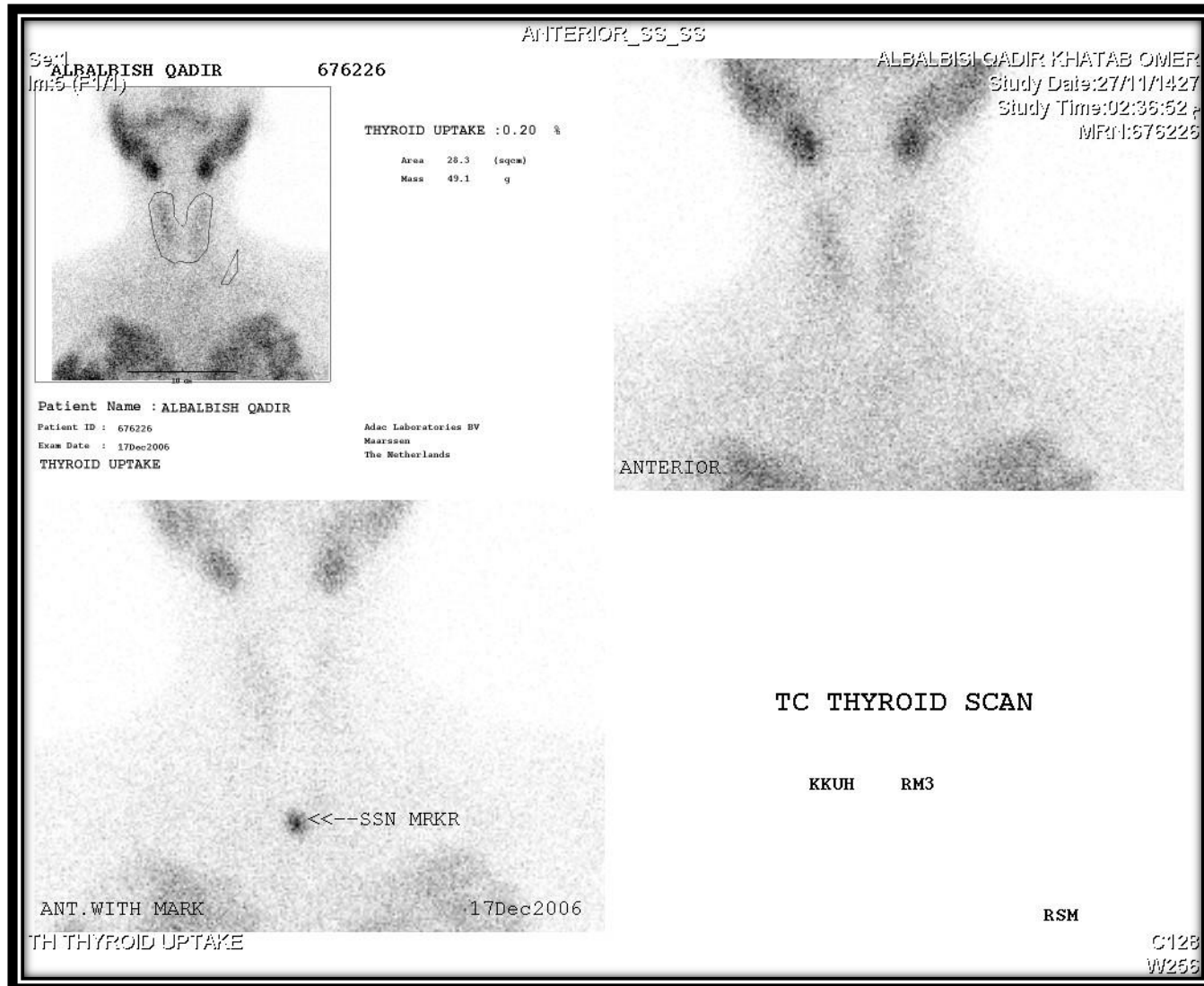


**RAD 366**

**NUCLEAR MEDICINE**

**2019**

# Elevated T4 and suppressed TSH



# Elevated T4 and suppressed TSH



Se:1  
Im:9 (F1/1)  
SALHA ALSHAHRANI

ALSHAHRANI SALHA SAAD ABDULLAH  
Study Date: 09/08/1426  
Study Time: 12:57  
MFI: 793268

793268

THYROID UPTAKE : 24.13 %

Area	0.0	(sqcm)
Mass	0.0	g



10 cm

10 cm

Thyroid

TC THYROID UPTAKE

ANT THYROID  
Thyroid\_SS\_SS

Adac Laboratories BV  
Maarsse  
The Netherlands

Exam Date : 12Sep2005

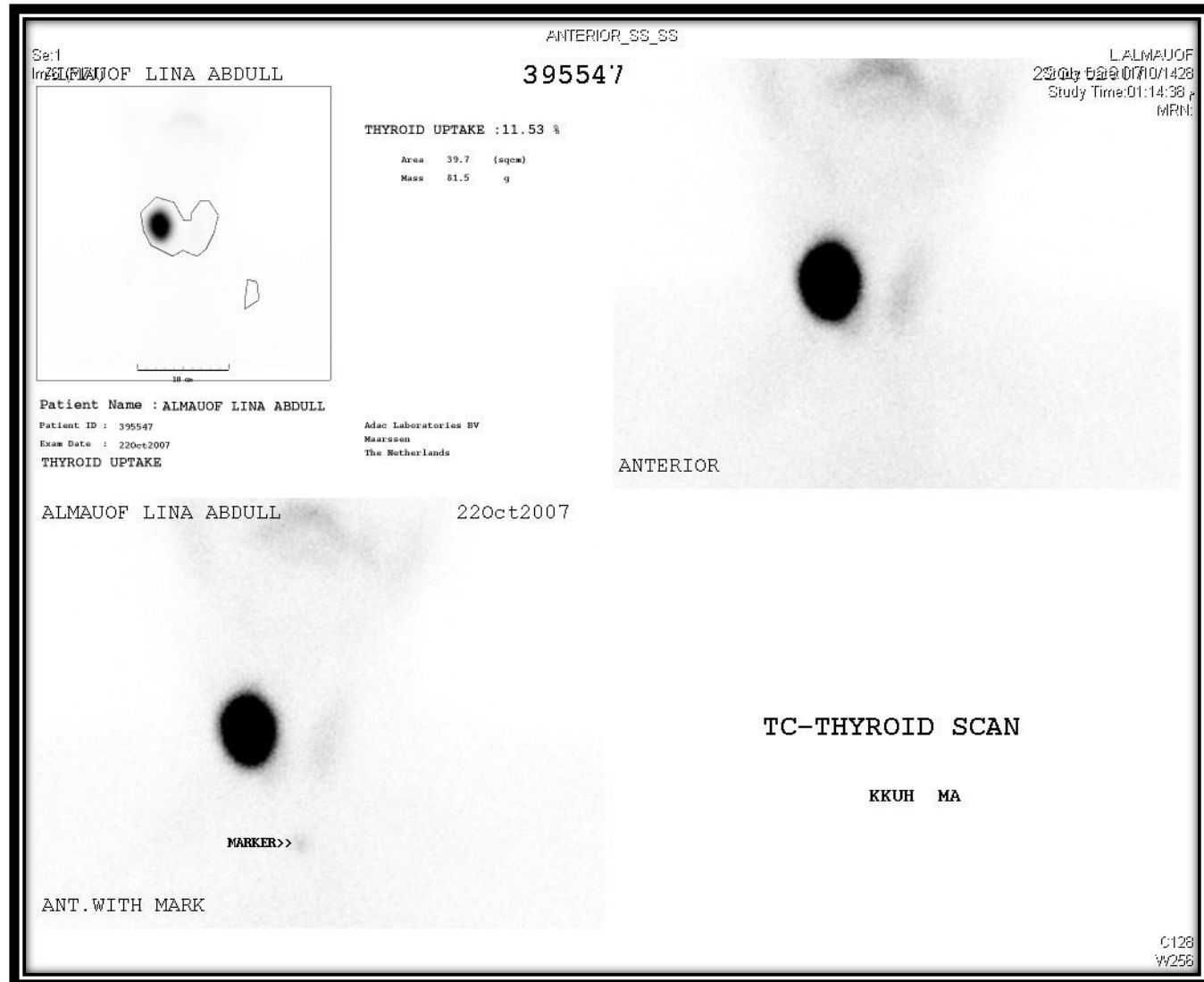
THYROID UPTAKE

<-MARKER

KKUH HS

C128  
W256

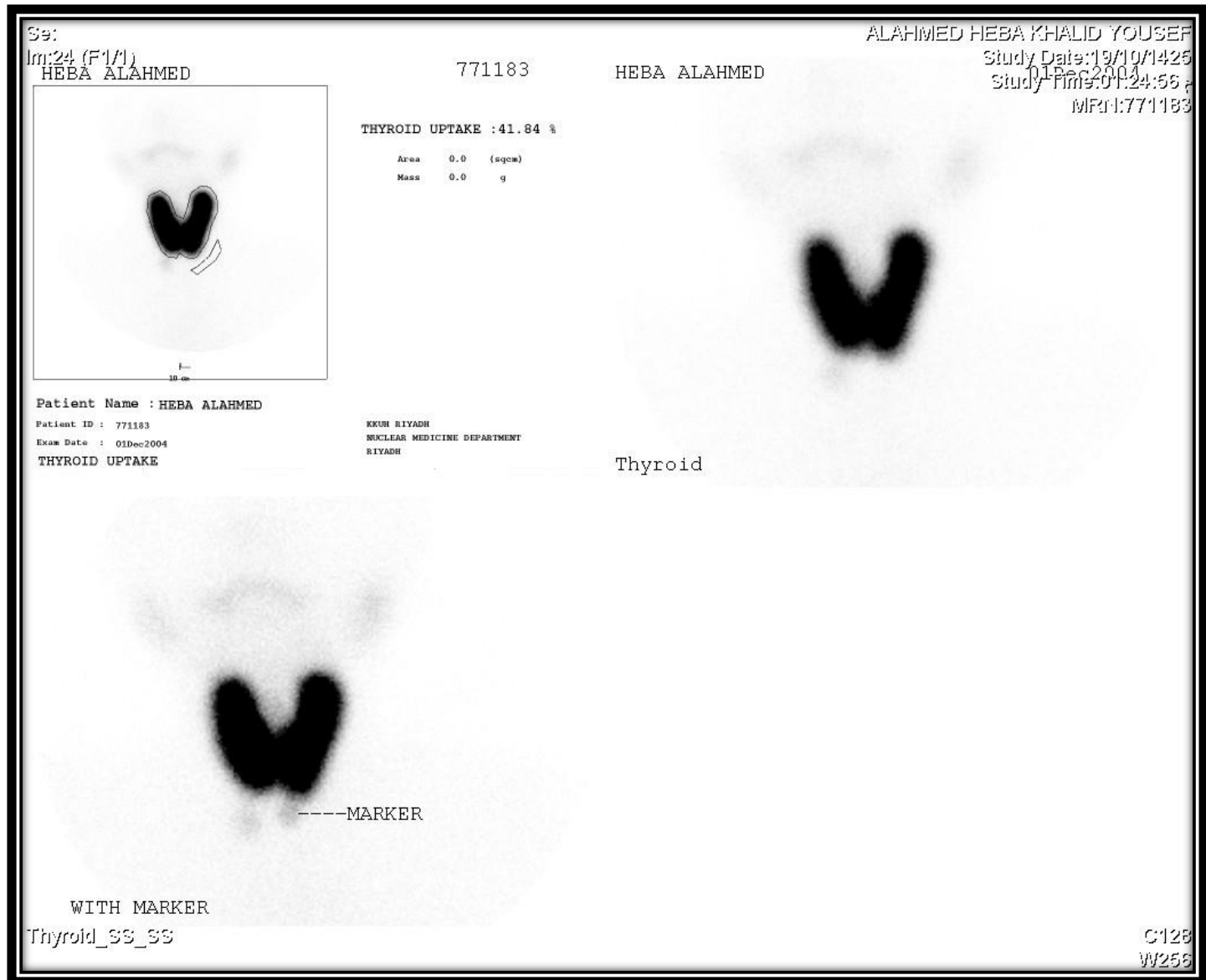
# Elevated T4 and suppressed TSH



# Teaching Points

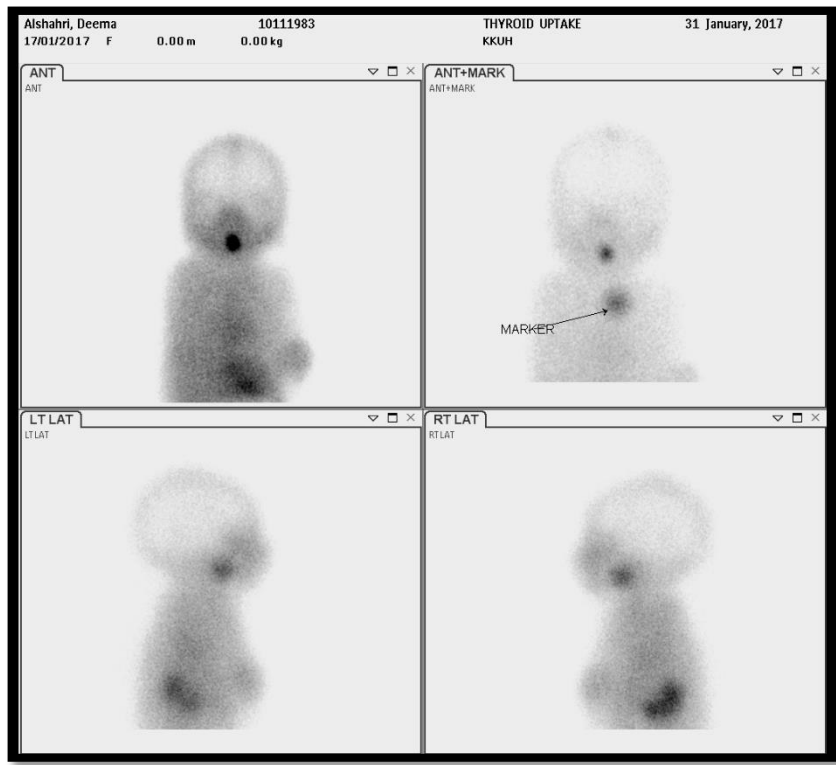
- In patients with thyrotoxicosis , thyroid scan is used to differentiate thyrotoxicosis with hyperthyroidism from thyrotoxicosis without hyperthyroidism

# Elevated TSH and low T4 (2 YEARS OLD)



# Elevated TSH and low T4





Alshahri, Deema 10111983 THYROID UPTAKE 31 January, 2017  
 17/01/2017 F 0.00 m 0.00 kg KKHU

Thyroid ANT

R 10 cm L 30 cm

Results

Thyroid	
Counts	13603
Number of pixels	194
Uptake (%)	0.91
Thyroid area(cm2)	2.20
Thyroid weight (g)	1.07
Thyroid volume(cm3)	3.27



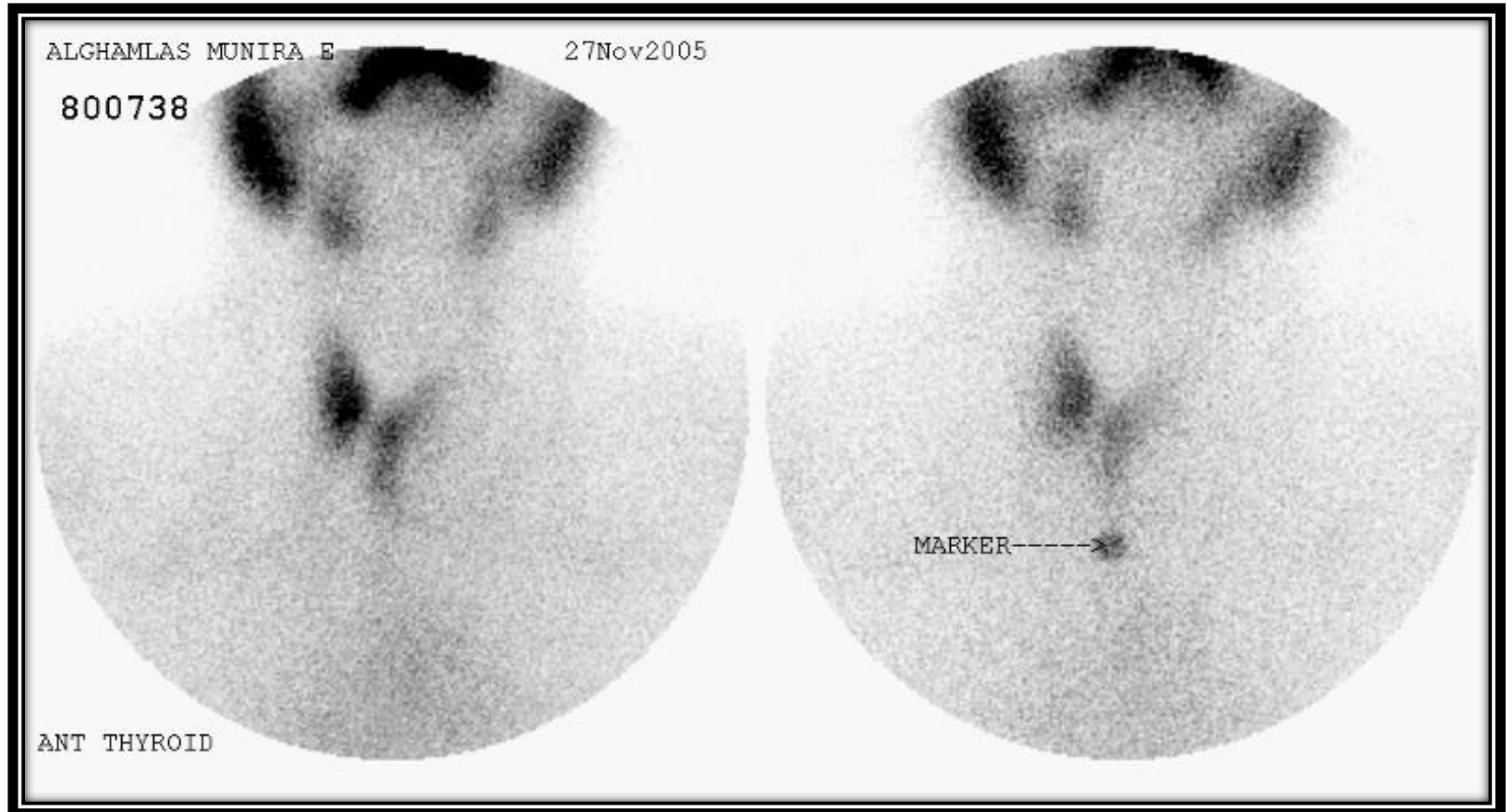
# Teaching Points

- In patients with neonatal hypothyroidism, thyroid scan is used to differentiate dyshormonogenesis from ectopic thyroid and thyroid aplasia.

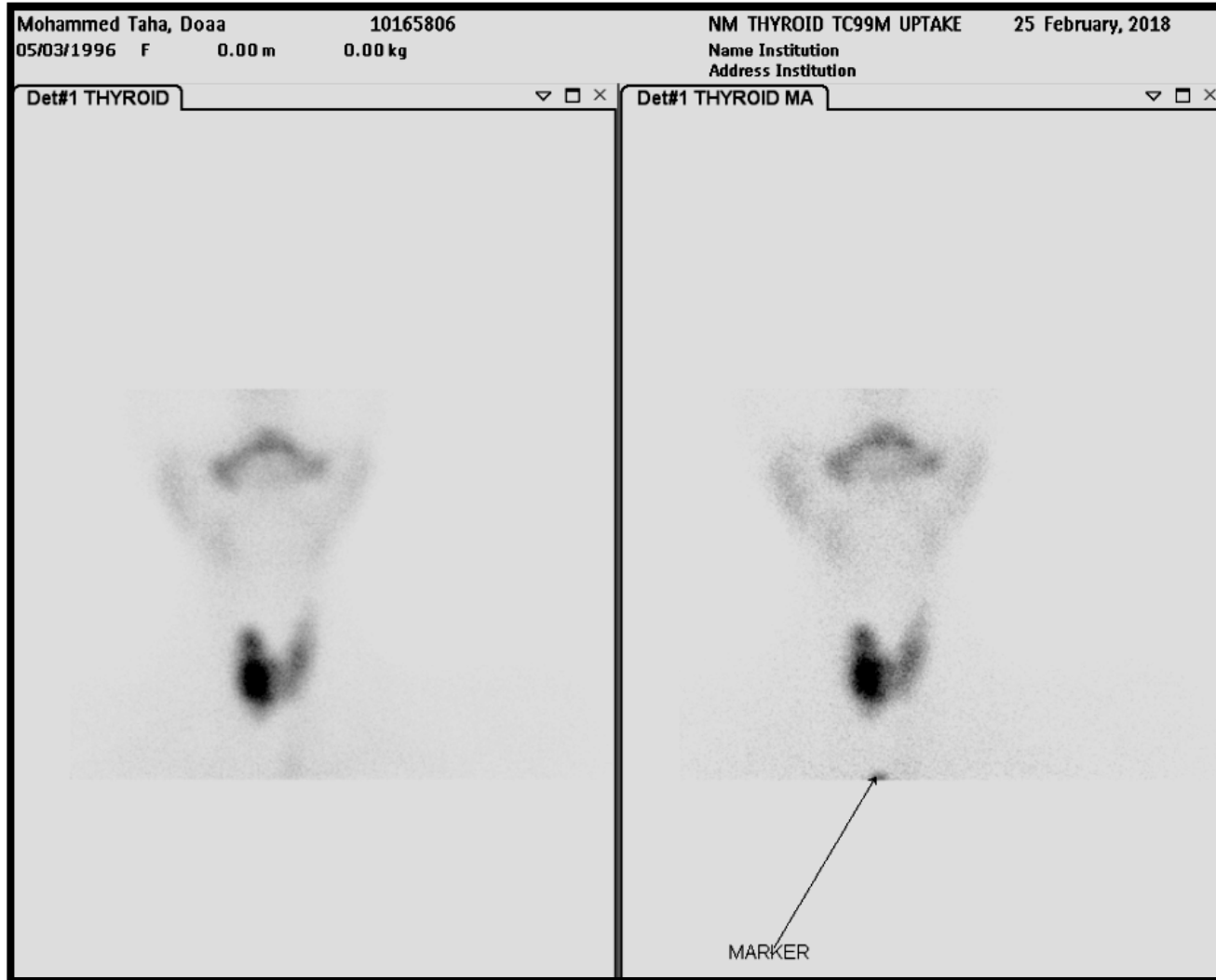
# Palpable Neck Mass



# Palpable Neck Mass



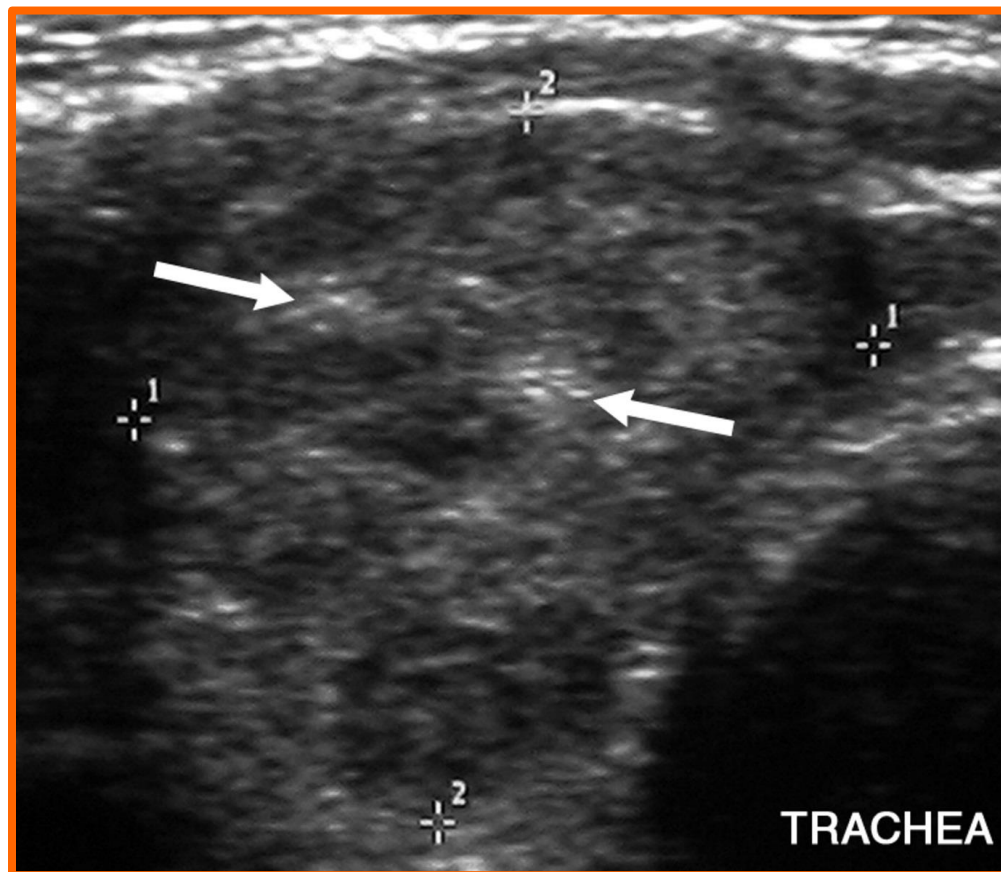
# Palpable Neck Mass



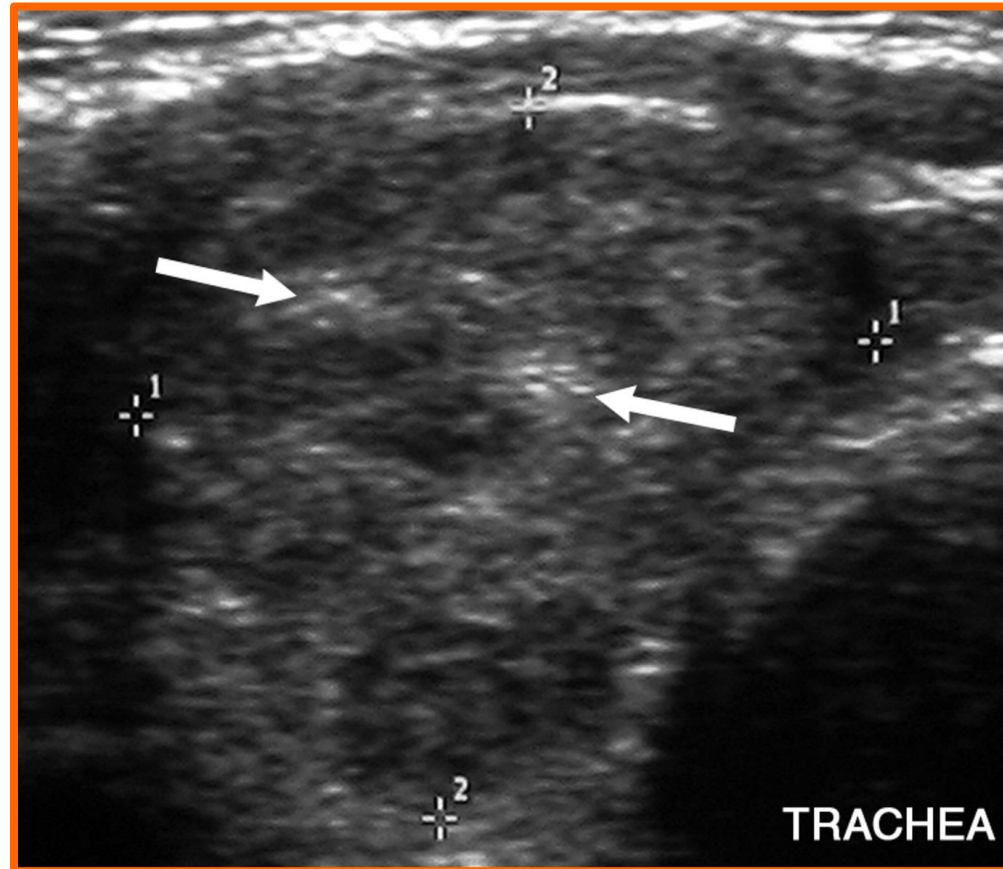
# Teaching Points

- In patients with neck mass, thyroid scan is used to differentiate cold from hot thyroid nodules.

**Right Thyroid lobe : Papillary thyroid carcinoma in a 42-year-old man.**



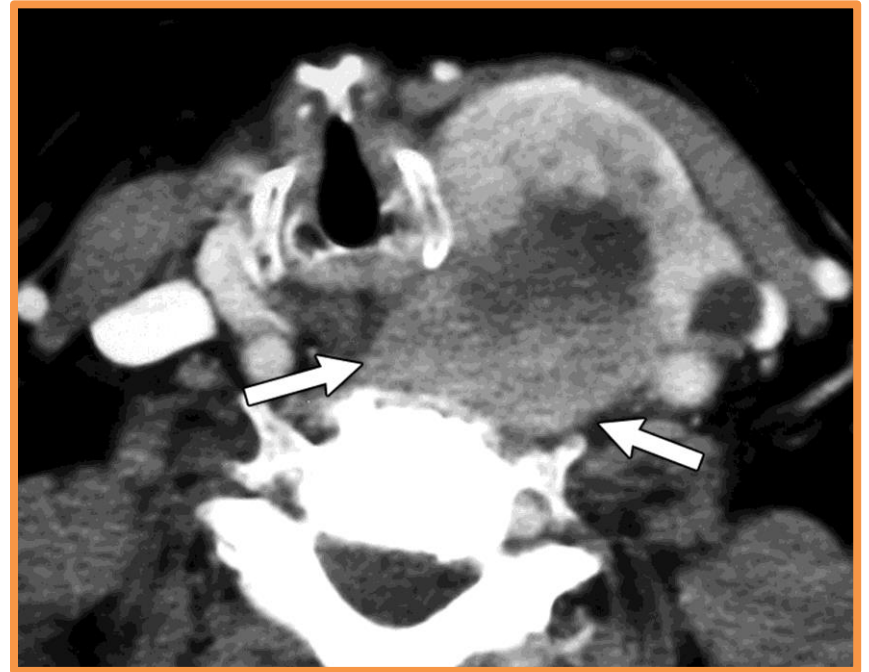
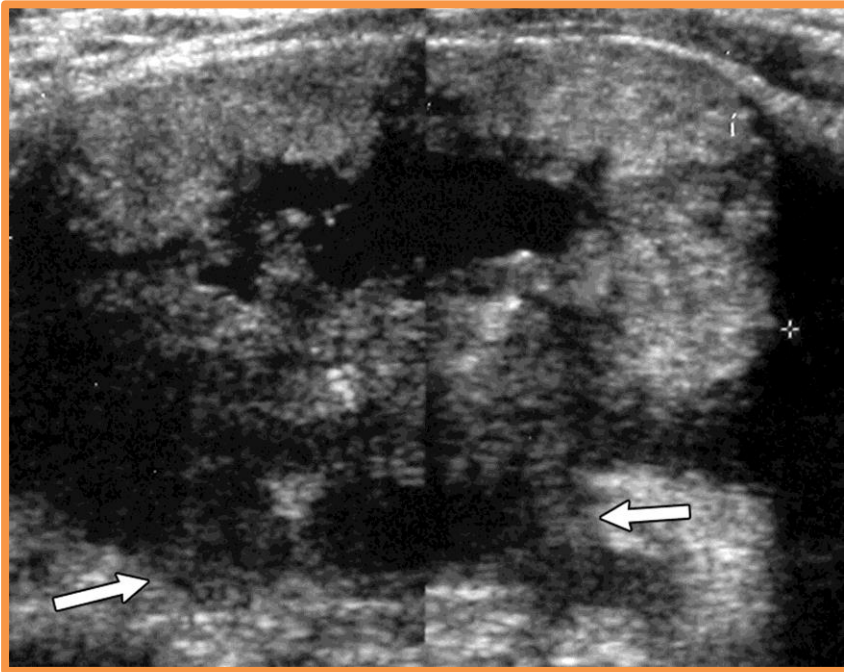
**Right Thyroid lobe : Papillary thyroid carcinoma in a 42-year-old man.**



Transverse sonogram of the right lobe of the thyroid demonstrates:

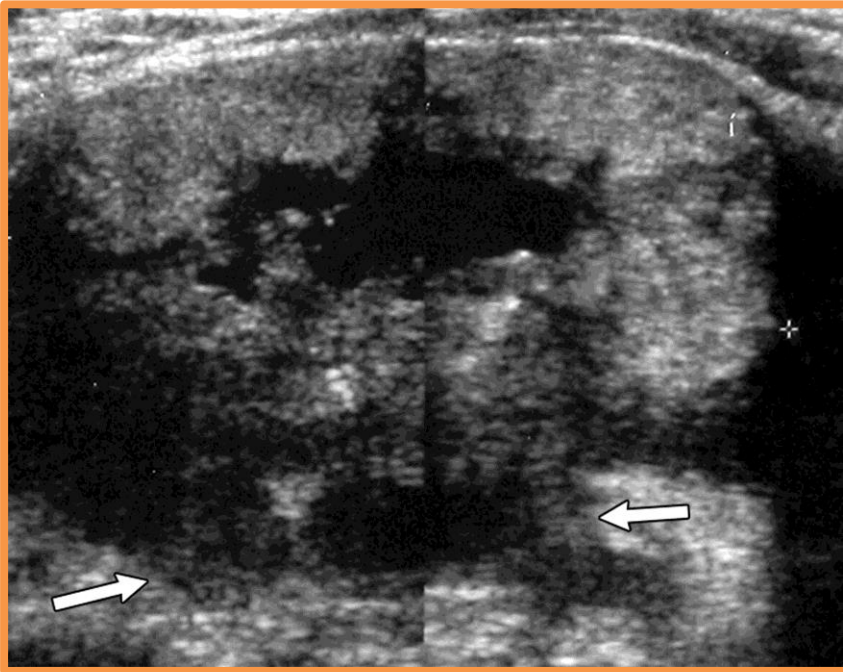
Punctate echogenic foci without posterior acoustic shadowing, findings indicative of **microcalcifications** (arrows).

## Anaplastic thyroid carcinoma in an 84-year-old woman

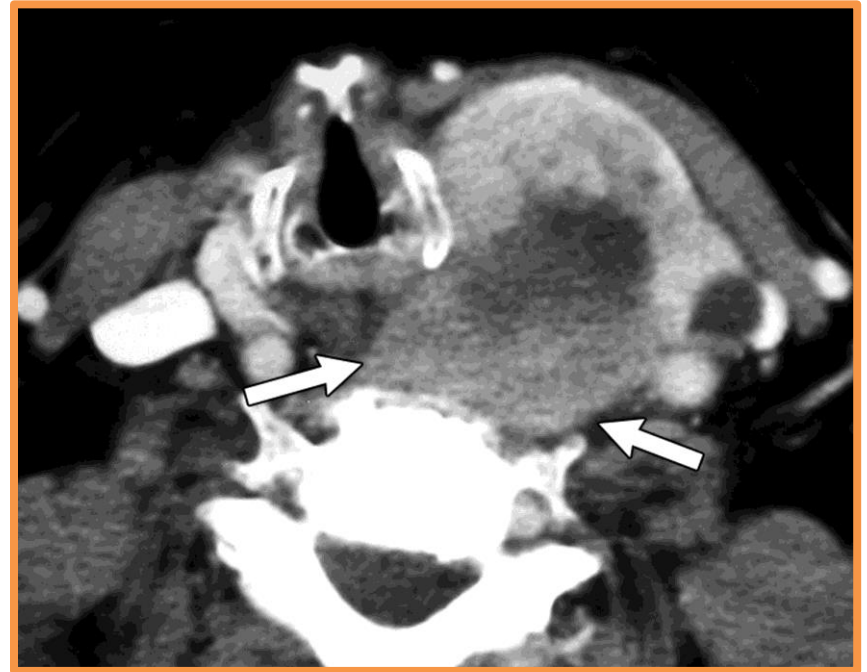




## Anaplastic thyroid carcinoma in an 84-year-old woman

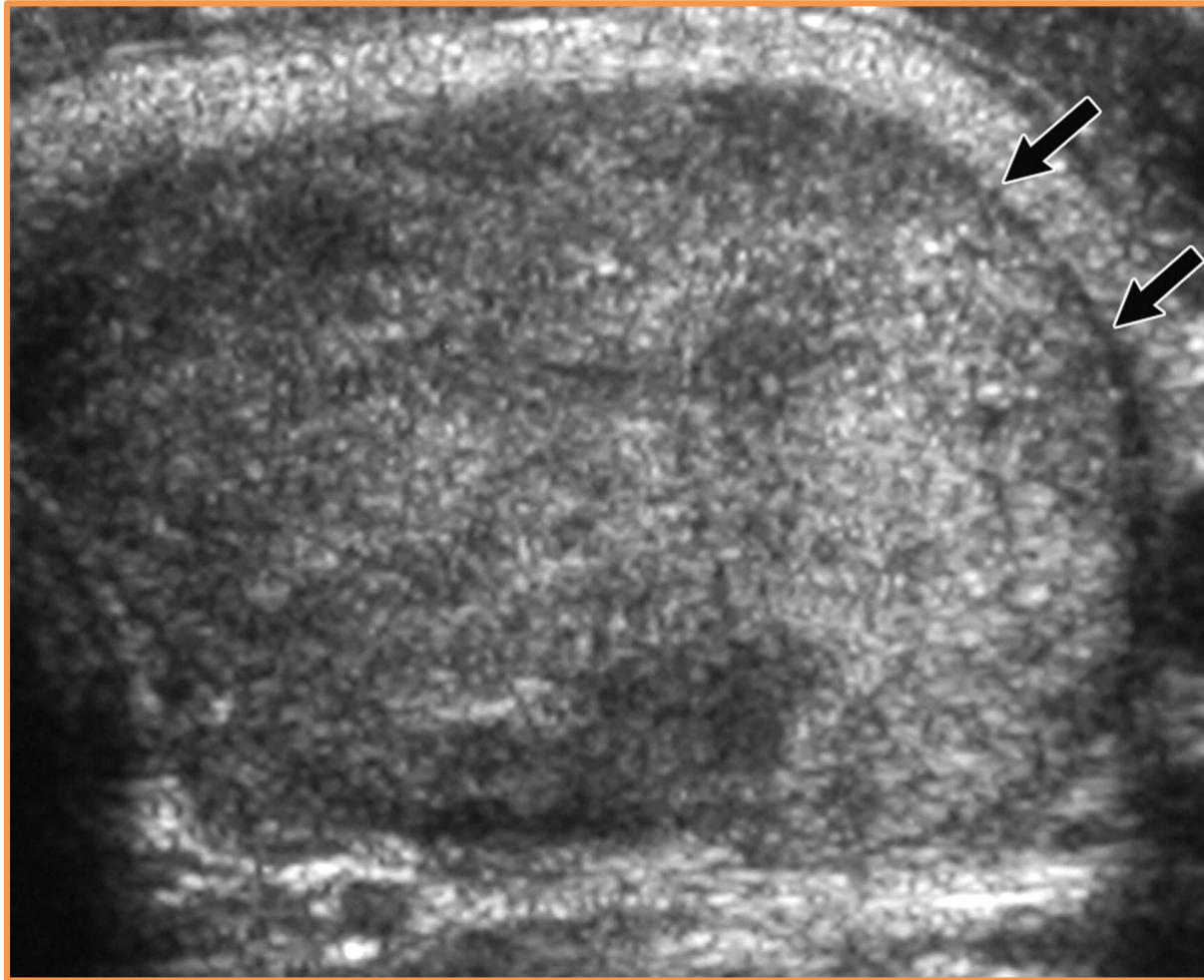


Transverse sonogram of the left lobe of the thyroid shows an advanced tumor with infiltrative posterior margins (arrows) and invasion of prevertebral muscle.

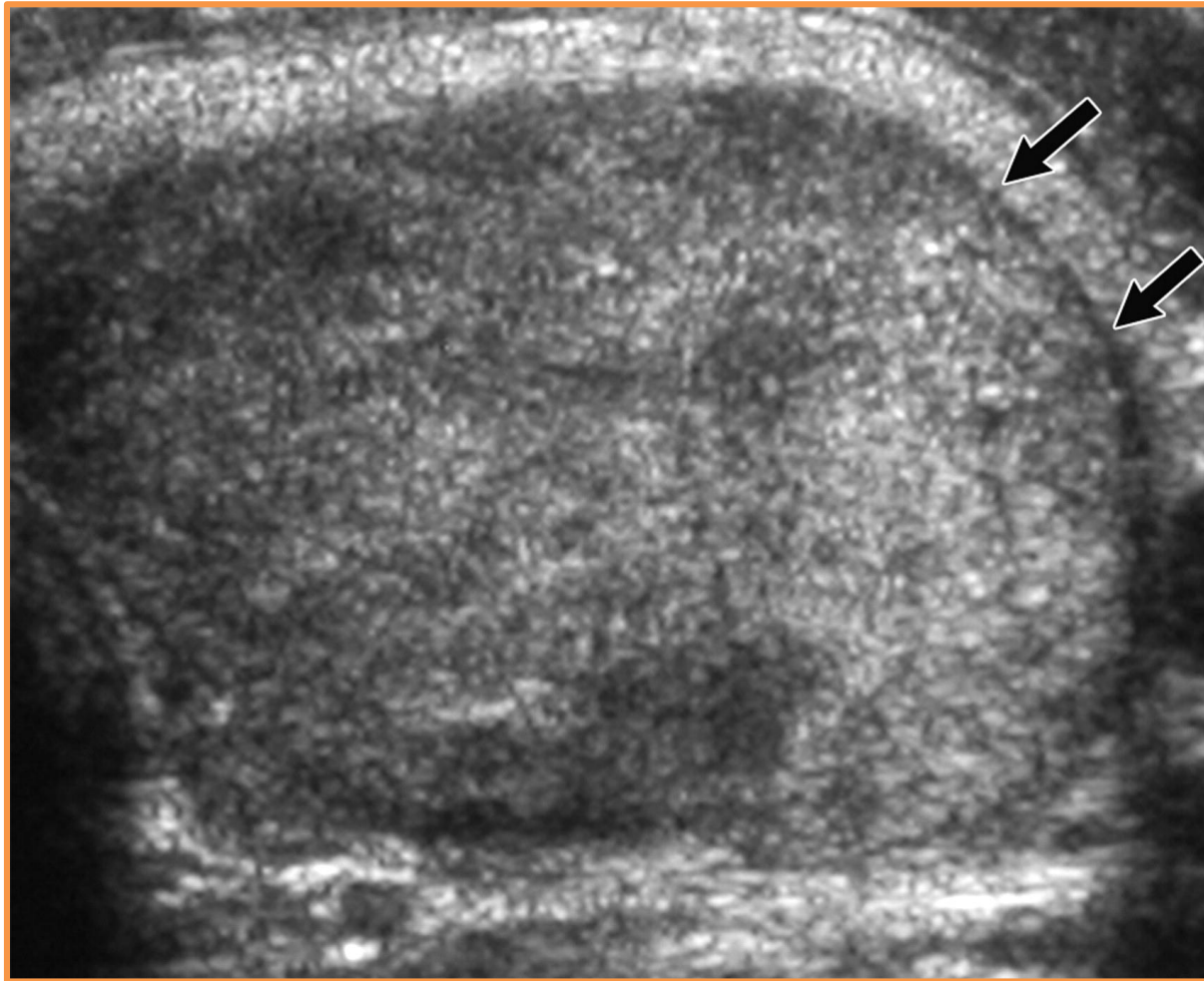


Axial contrast-enhanced CT image shows a large tumor that has invaded the prevertebral muscle (arrows).

## Follicular adenoma in a 30-year-old woman

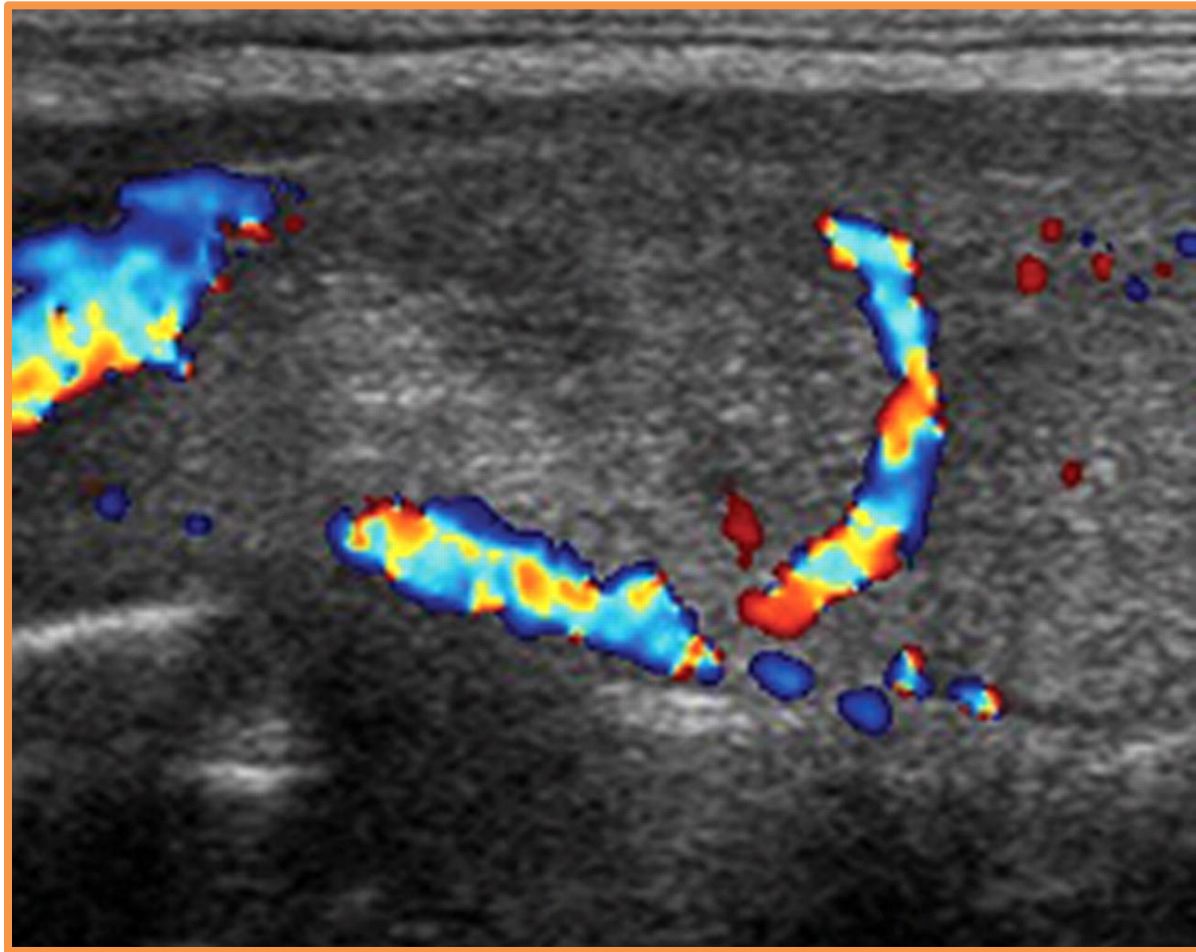


## Follicular adenoma in a 30-year-old woman

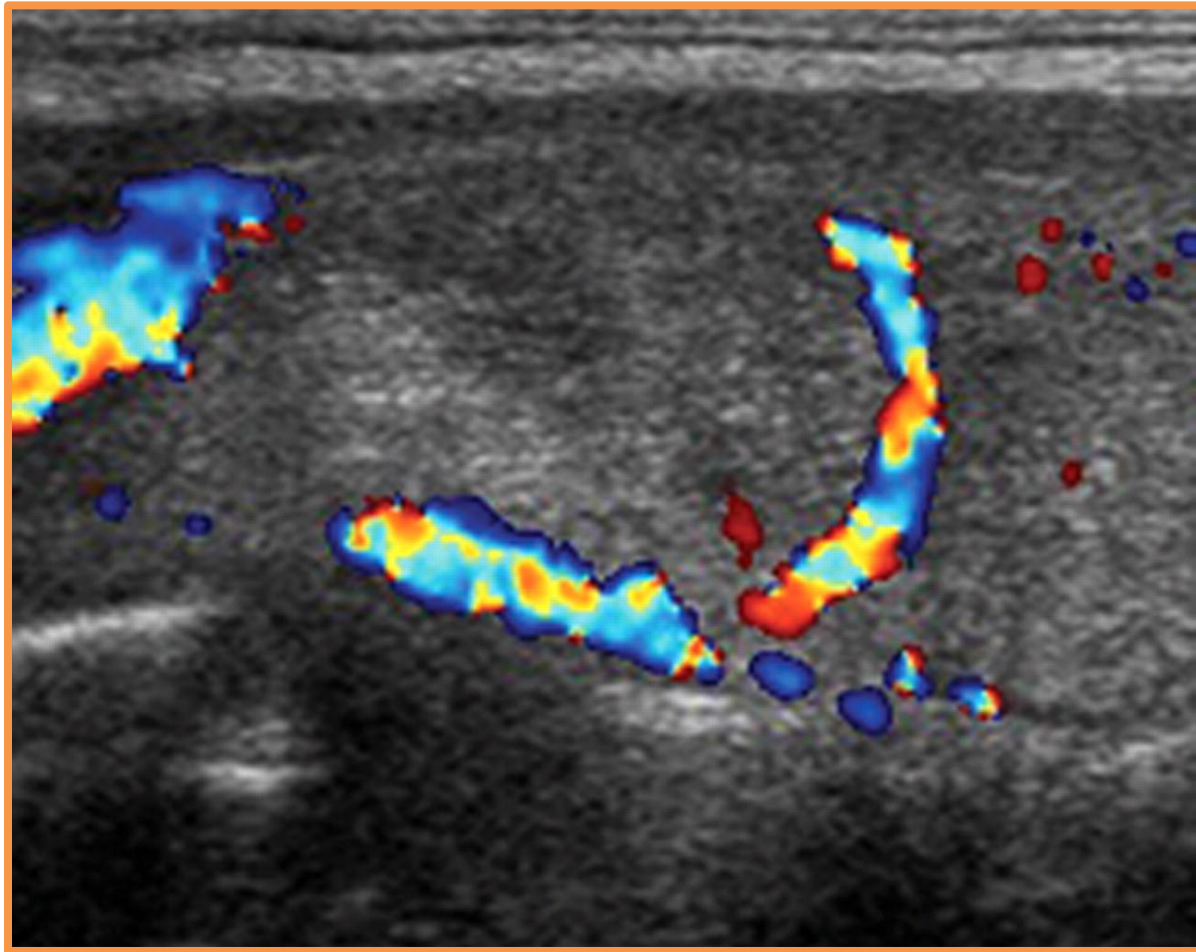


Transverse sonogram of the left lobe of the thyroid shows a follicular adenoma with a hypoechoic halo (arrows).

## Follicular adenoma in a 36-year-old woman

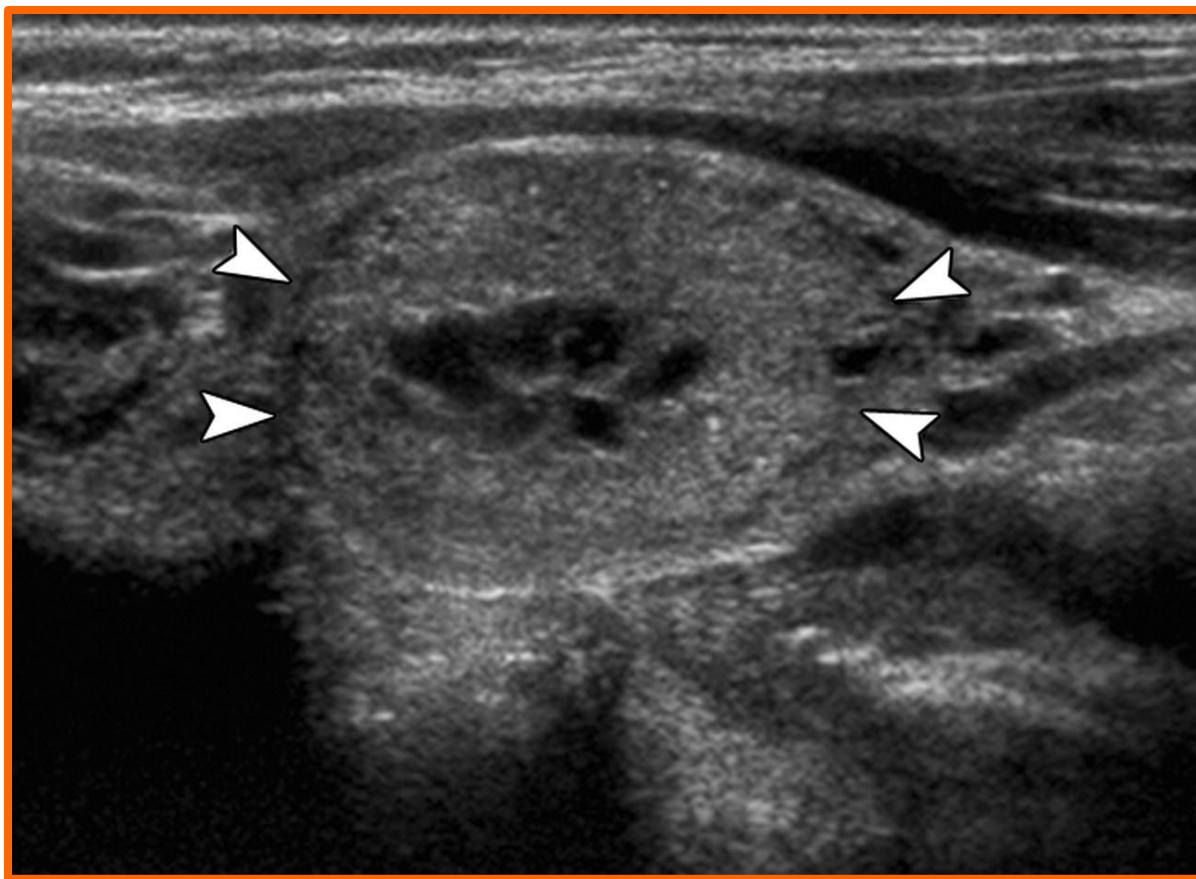


## Follicular adenoma in a 36-year-old woman

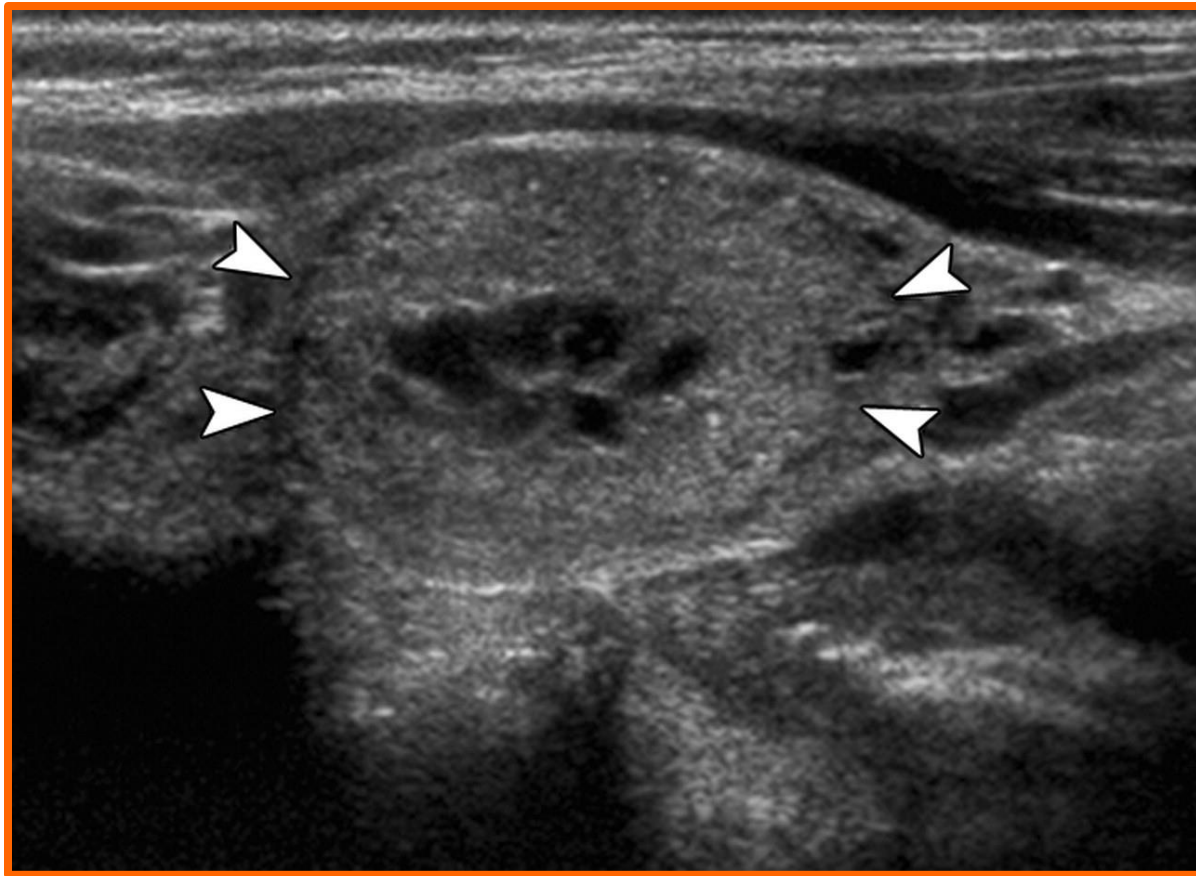


Longitudinal color Doppler sonogram of the right lobe of the thyroid shows perinodular flow around a follicular adenoma.

## US images of thyroid nodules

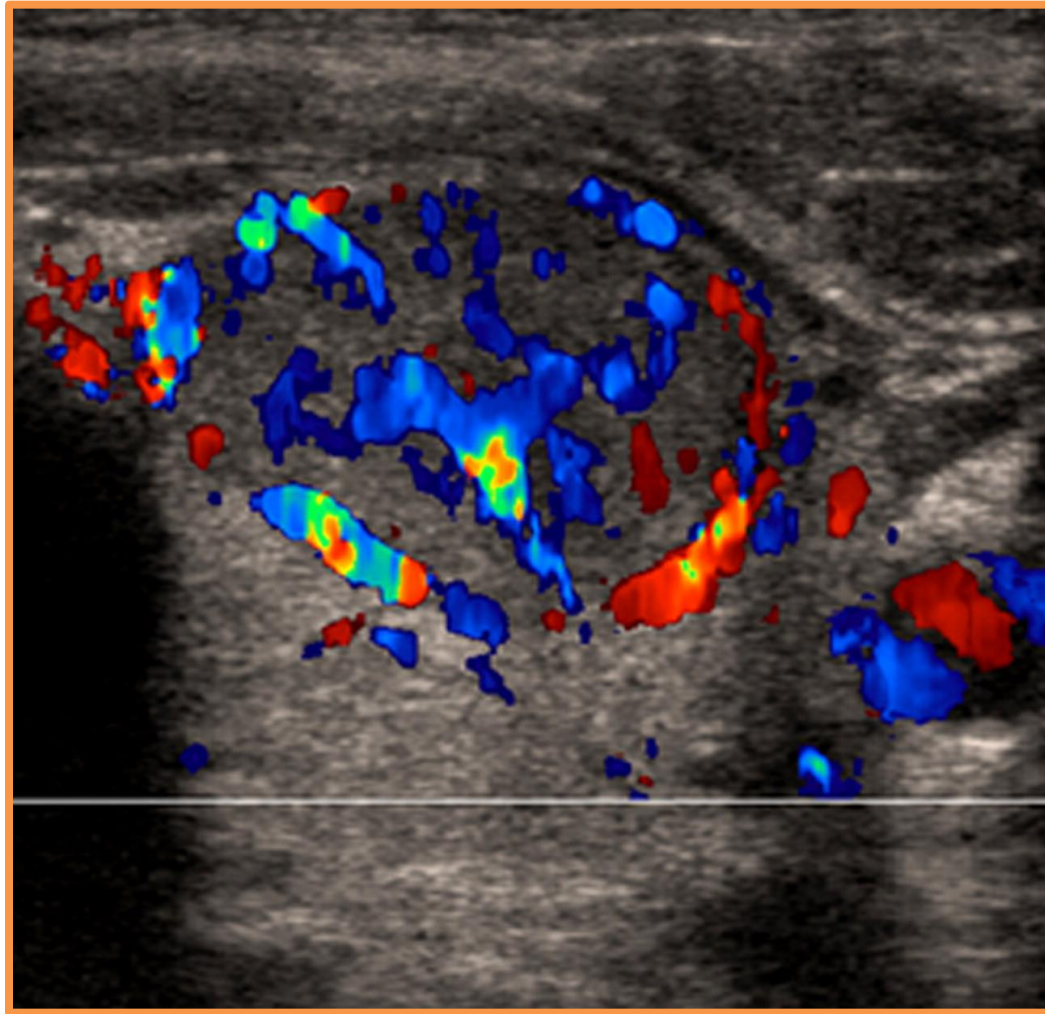


**US images of thyroid nodules of varying parenchymal composition (solid to cystic).**



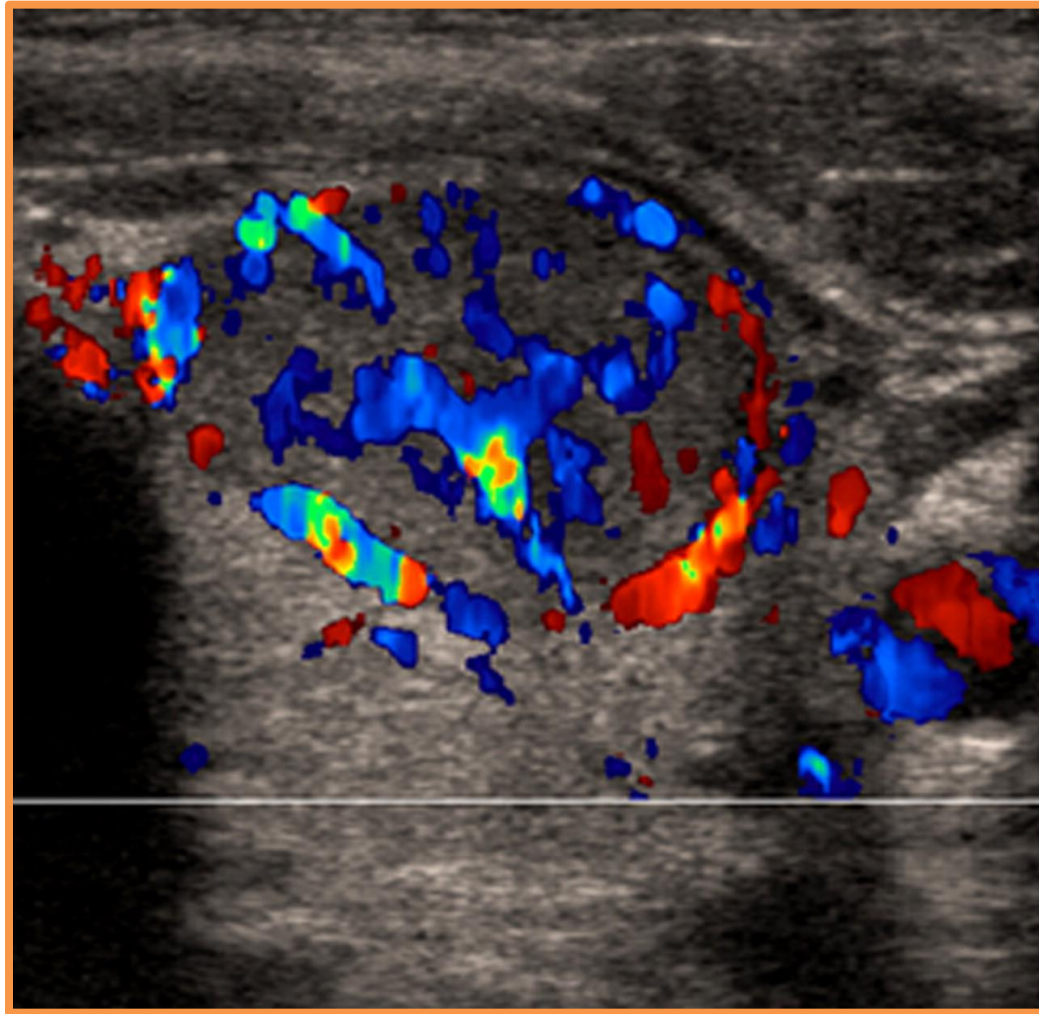
Proved to be benign at cytologic examination

## Papillary carcinoma: Predominantly solid thyroid nodule





## Papillary carcinoma: Predominantly solid thyroid nodule



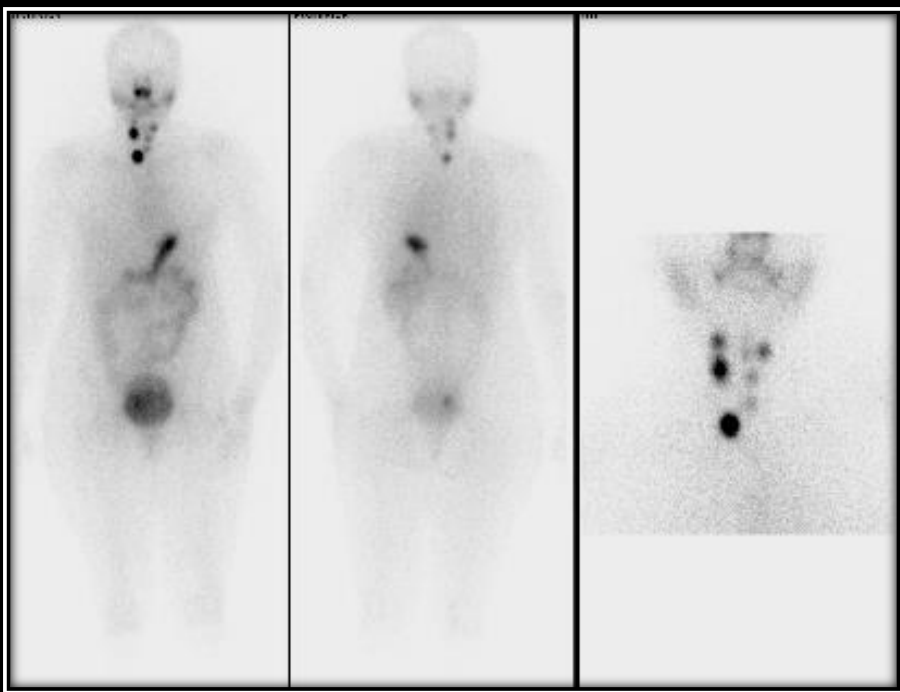
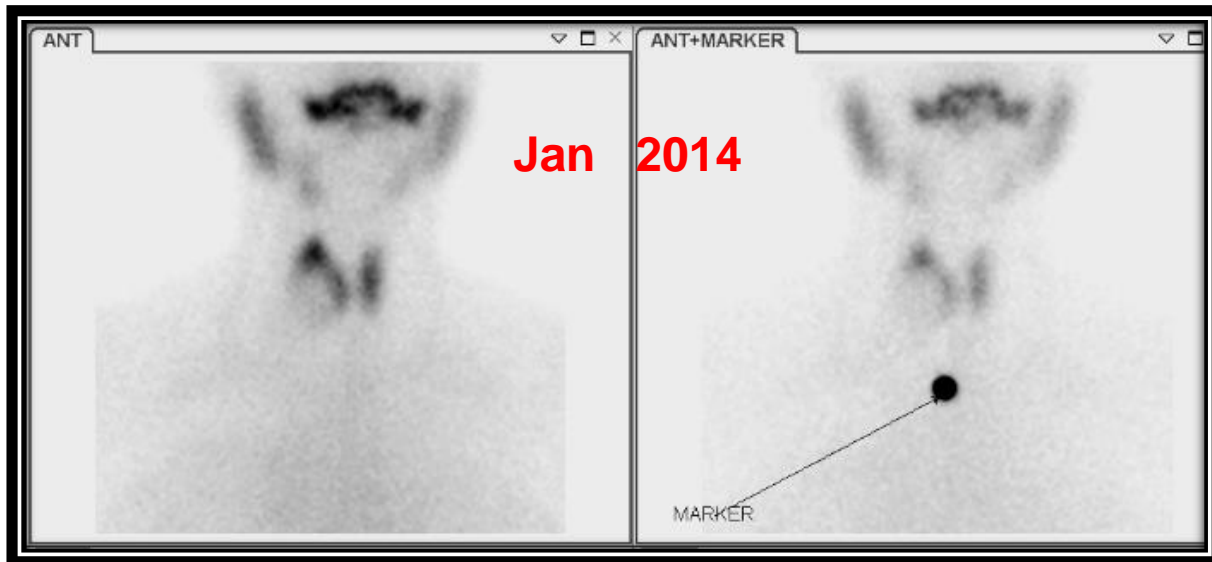
Role of colour Doppler US: colour Doppler mode shows marked internal vascularity, indicating increased likelihood that nodule is malignant. This was a papillary carcinoma.

# Teaching Points

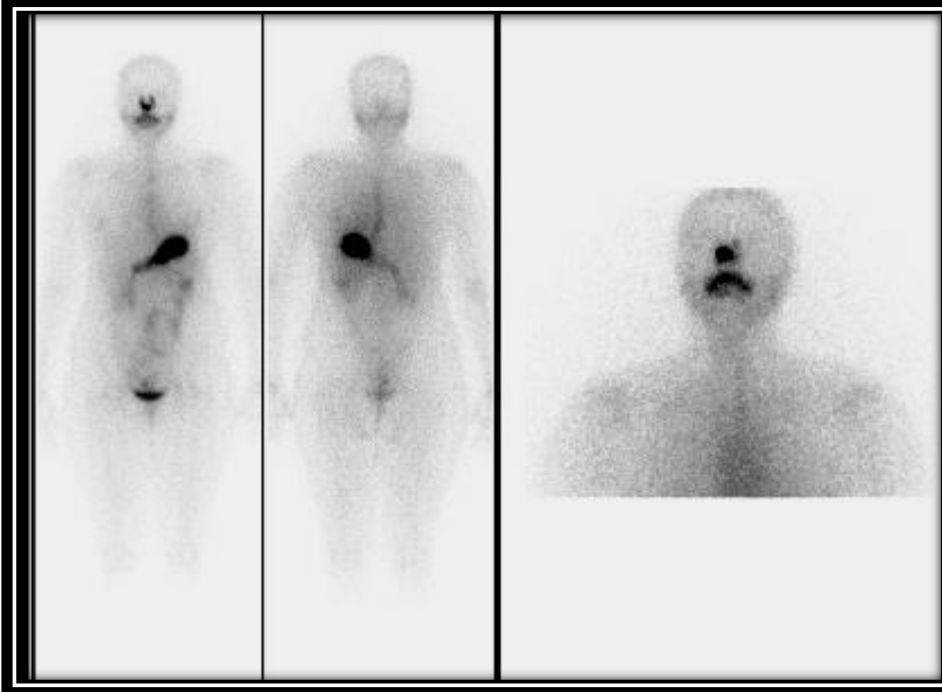
- **In patients with thyroid nodules ultrasound and color Doppler is used to:**
  1. Determine number of nodules.
  2. Differentiate solid from cystic nodules.
  3. Characterize thyroid nodule : Benign versus malignant.
  4. Assess for regional associated lymph node involvement

**A32 years old female patient with neck swelling**

- Agents and procedure
- Findings
- Differential diagnosis
- Other investigations
- Final diagnosis
- Management



March 2014

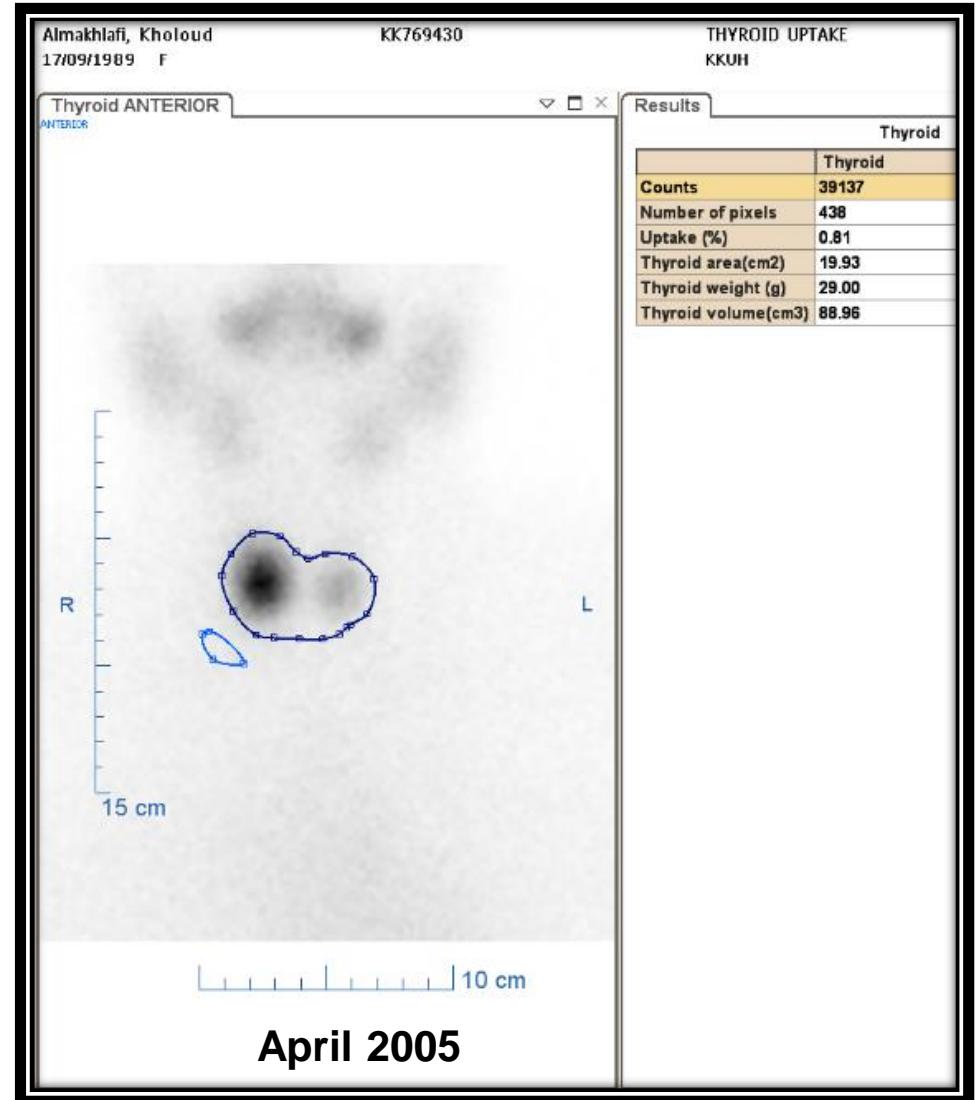
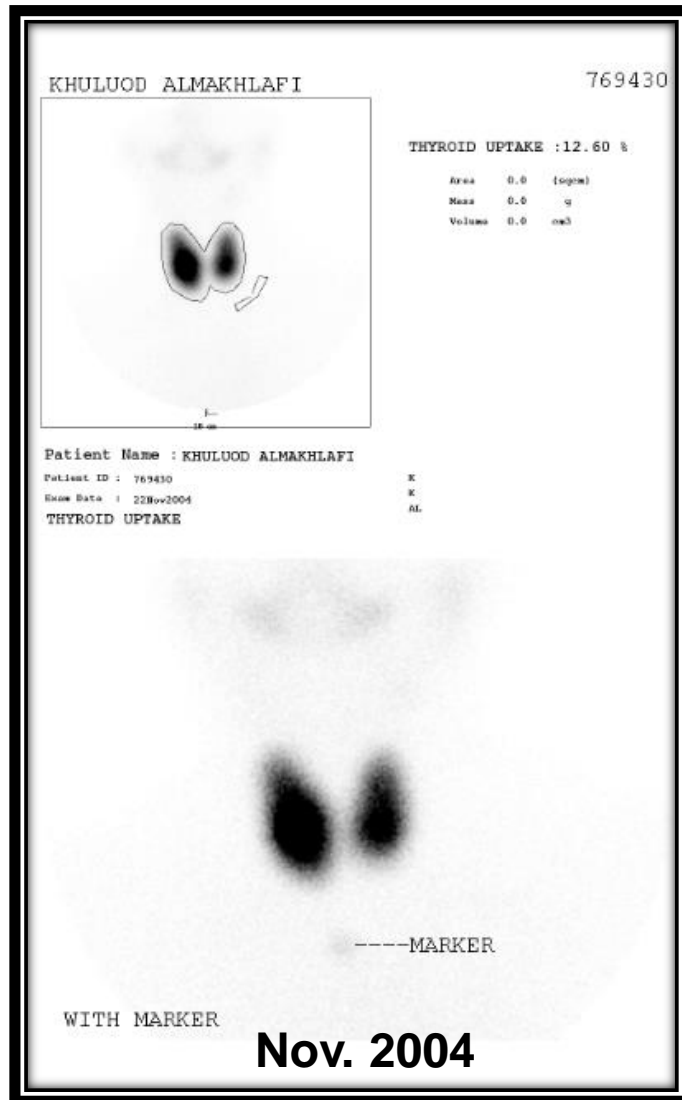


October 2014

Agent and procedure.

Findings

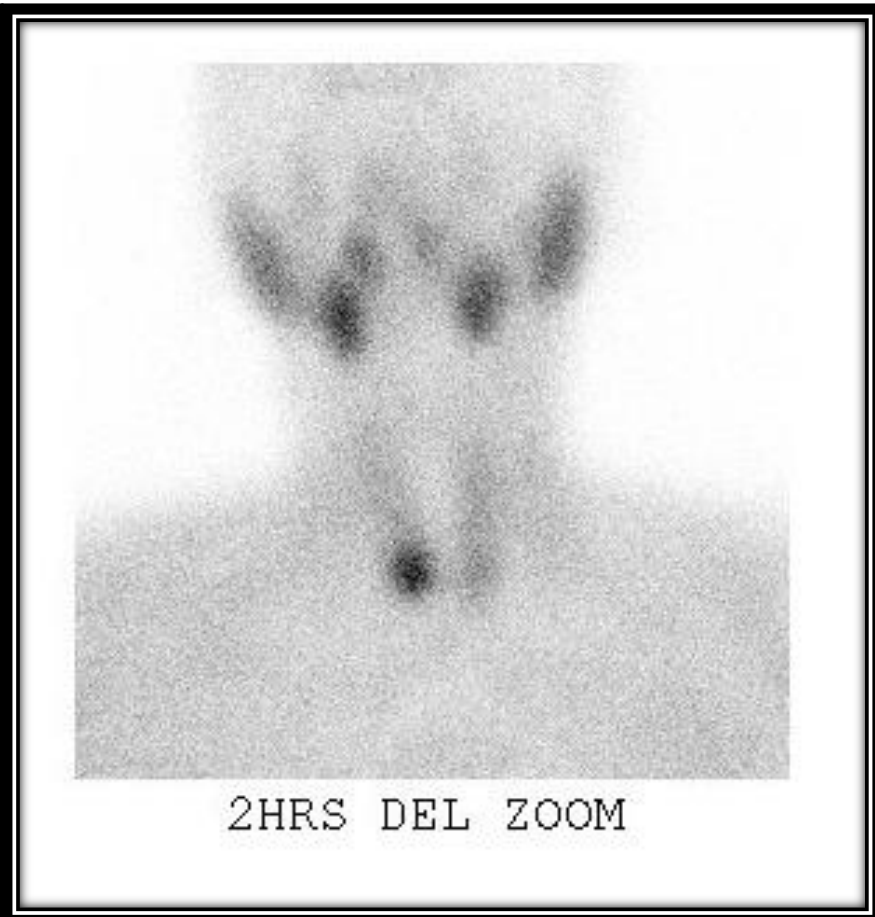
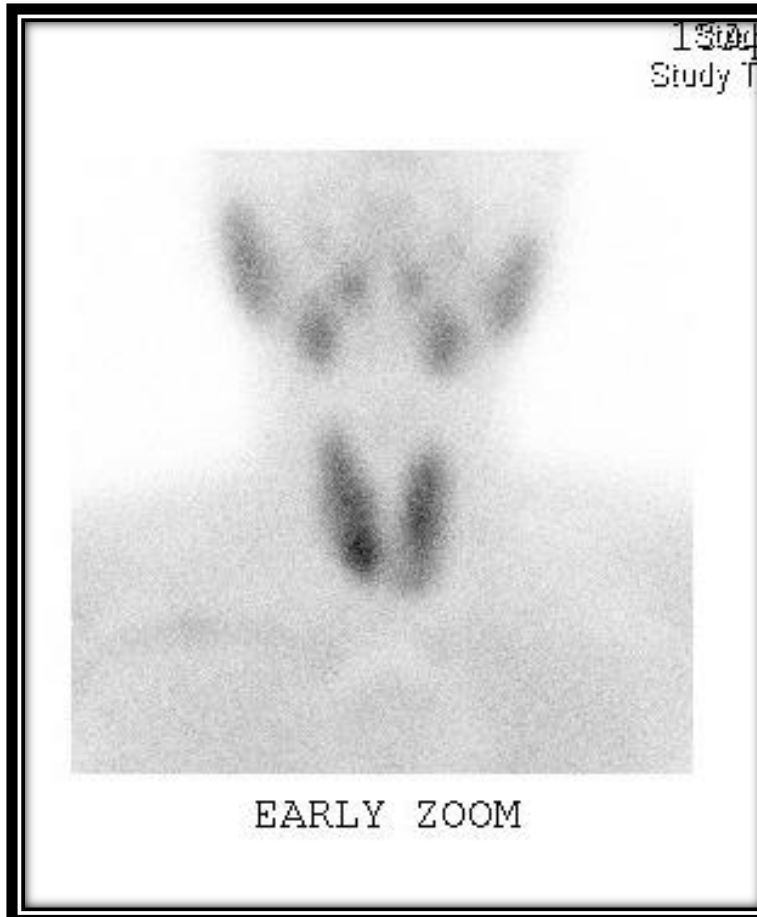
Conclusion



# Teaching Points

- Iodine 131 is used to treat thyroid disorders including thyroid cancer and hyperthyroidism

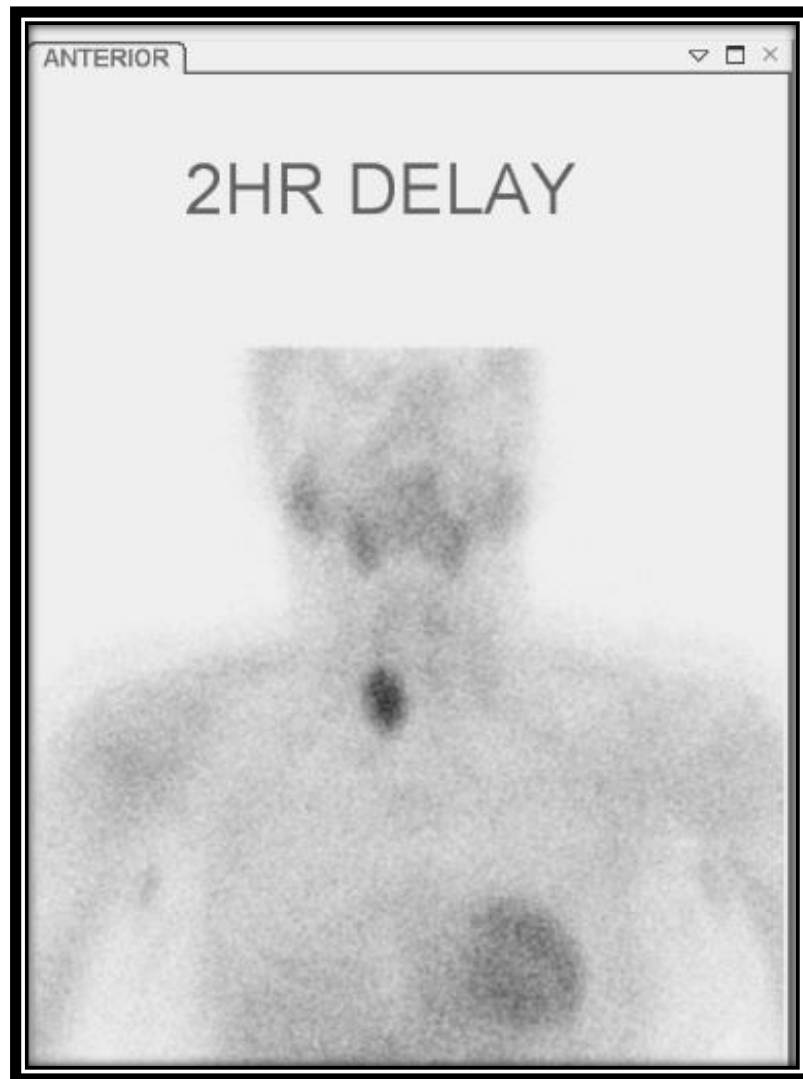
# High PTH and High Ca



# High PTH and High Ca

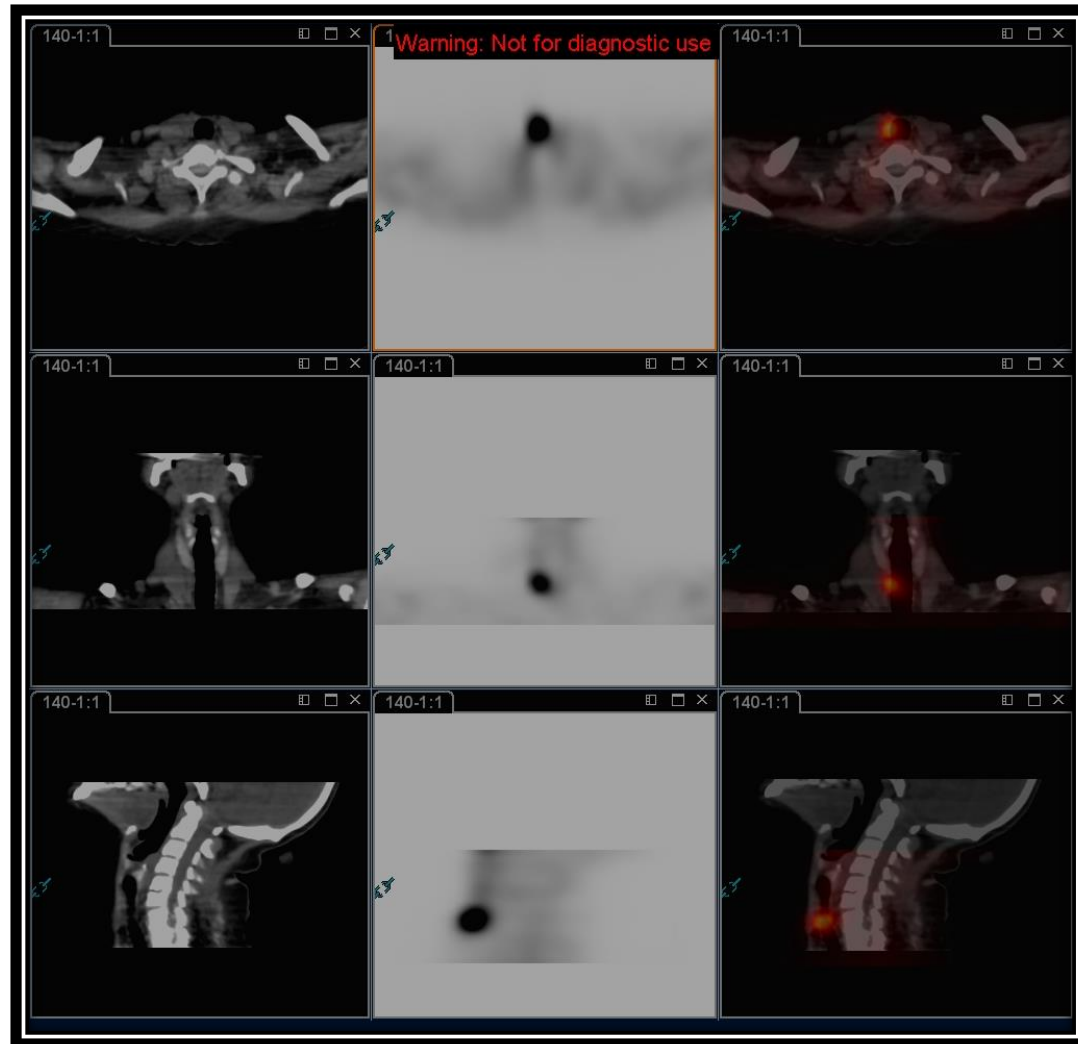


# High PTH and High Ca...1

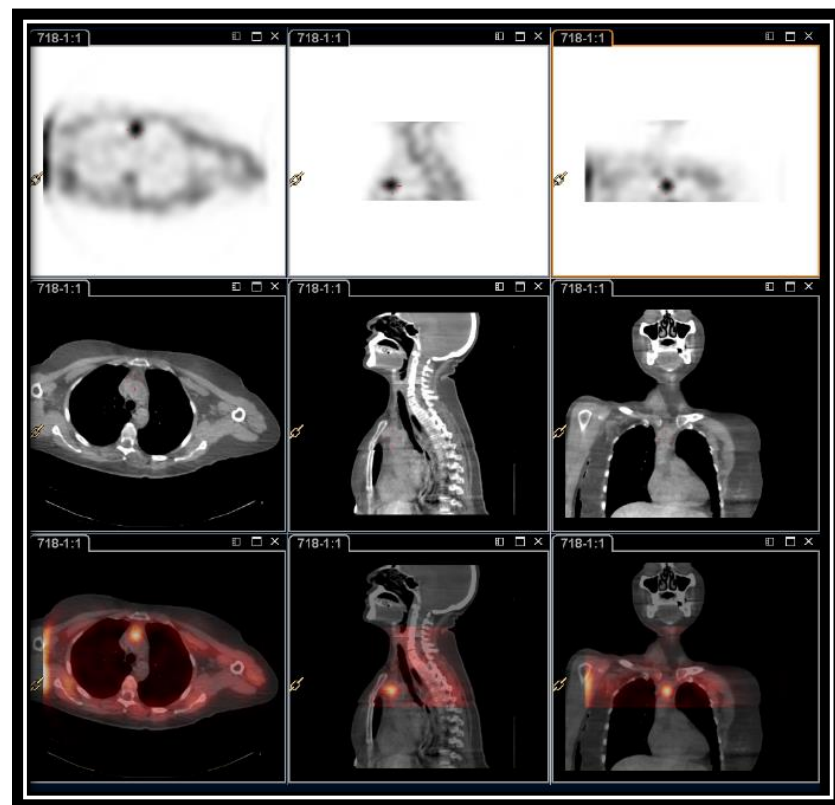
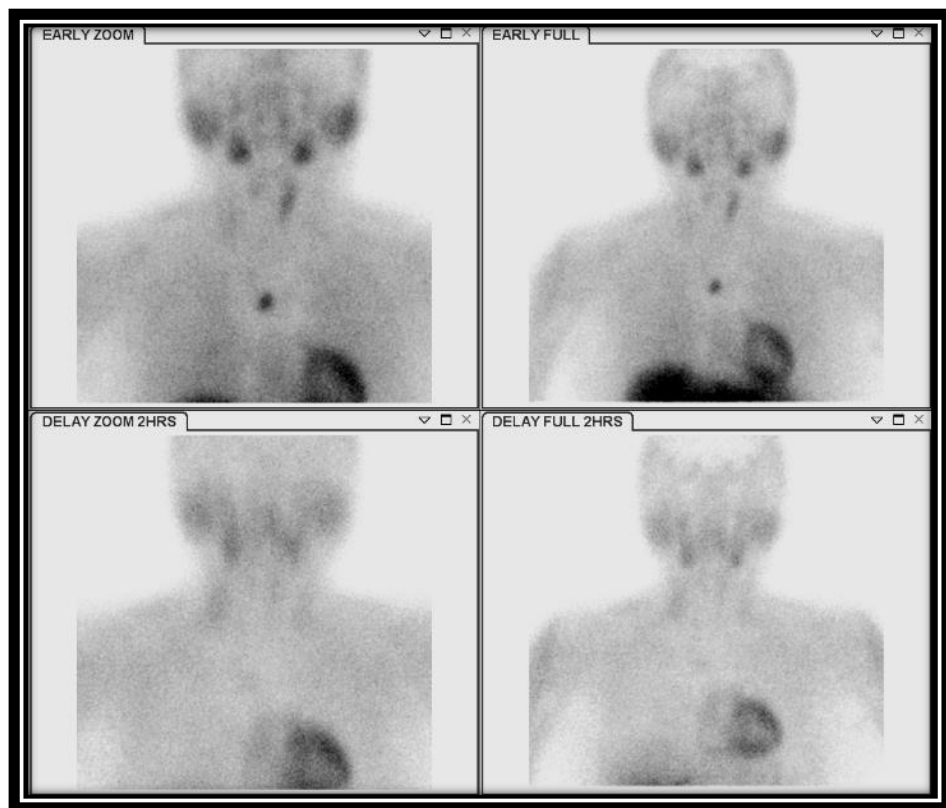




# High PTH and High Ca...II



- Agent and procedure
- Findings
- Final diagnosis



# Teaching Points

- In patients with hyperparathyroidism, parathyroid scan is used to detect and localize eutopic and ectopic parathyroid adenoma.