



# Radiology- Pathology Conference 4/29/2012

---

## “Lymph Nodes”

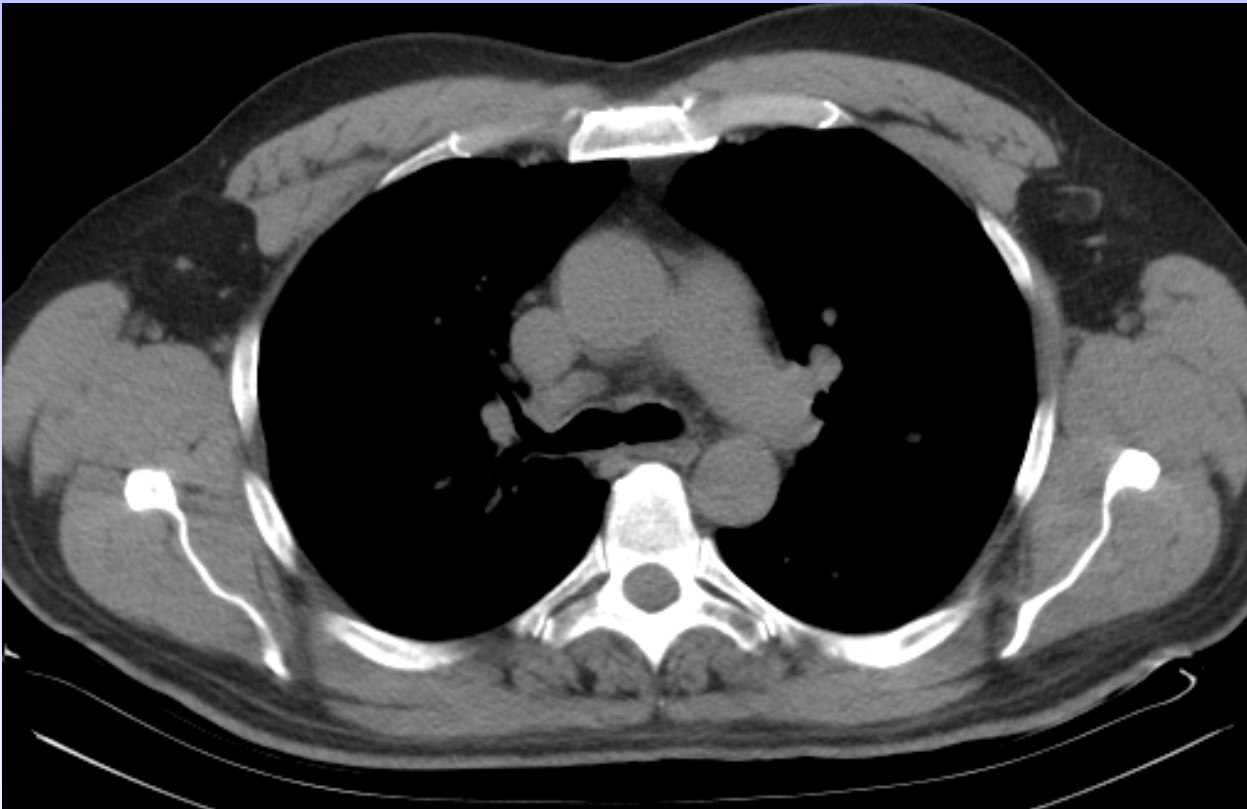
John McGrath

---

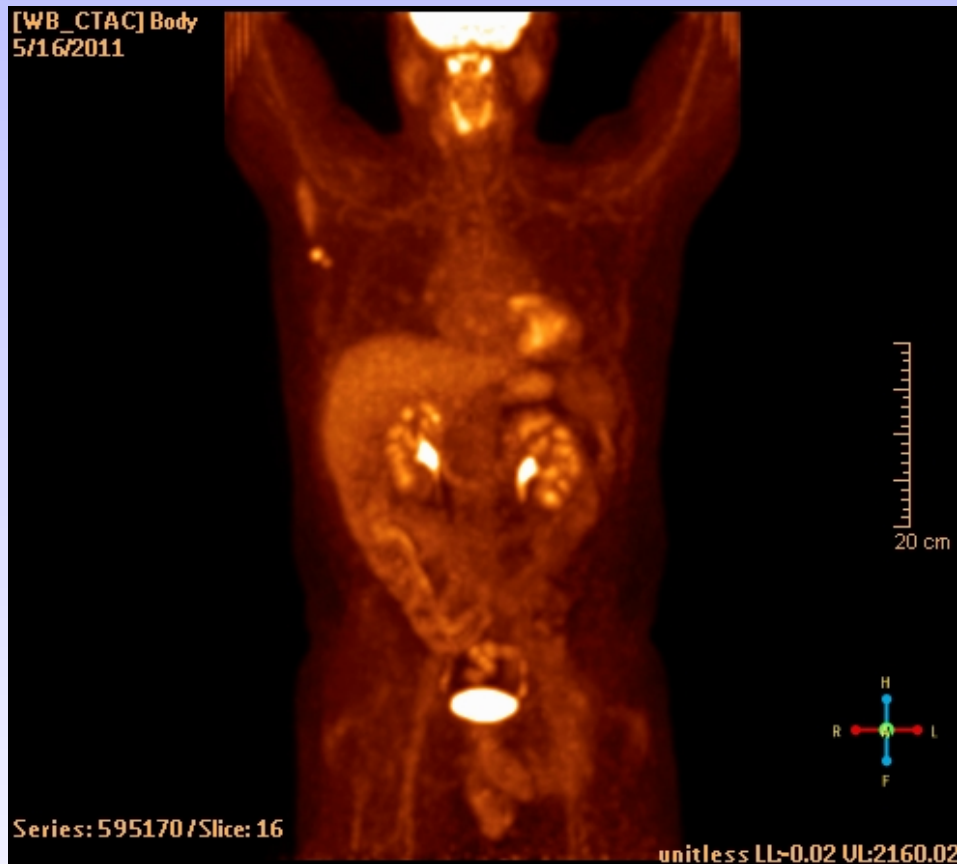
# Case 1: 51 year-old male presents with palpable right axillary lump



# 3 years prior...

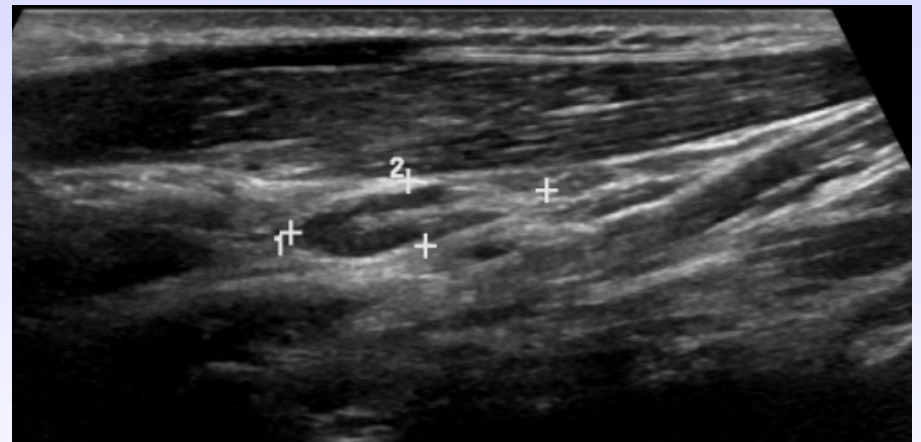
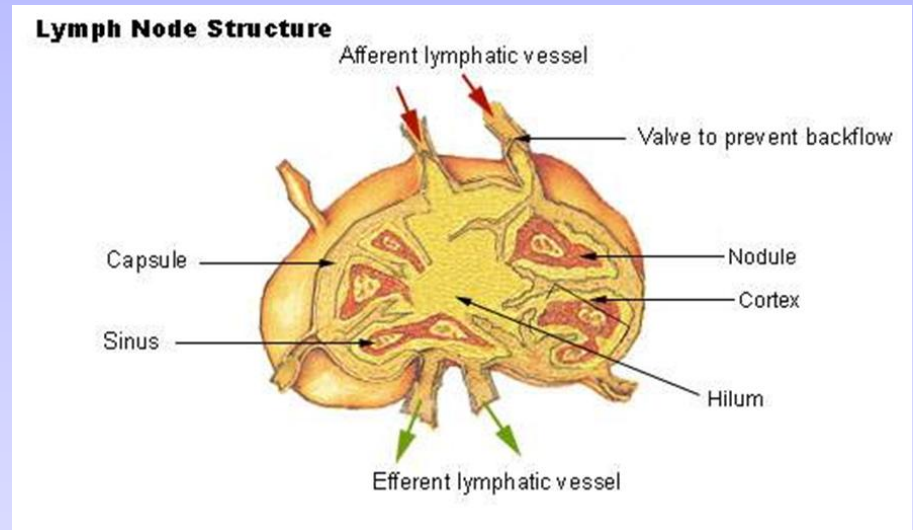


# Diagnosis?



# Lymphatics

- 500-700 lymph nodes scattered throughout the body
- Common drainage pathways via the right and (left) thoracic duct, into the venous system
- Assess size, morphology, and interval change on imaging



# Abnormal Lymph Nodes

## CT

- > 1 cm (short axis)  
generally considered abnormal
  - Inguinal: > 1.5 cm
  - Epitrochlear: > 0.5 cm
  - Subcarinal: > 1.5 cm
- May see necrosis, calcifications, etc.

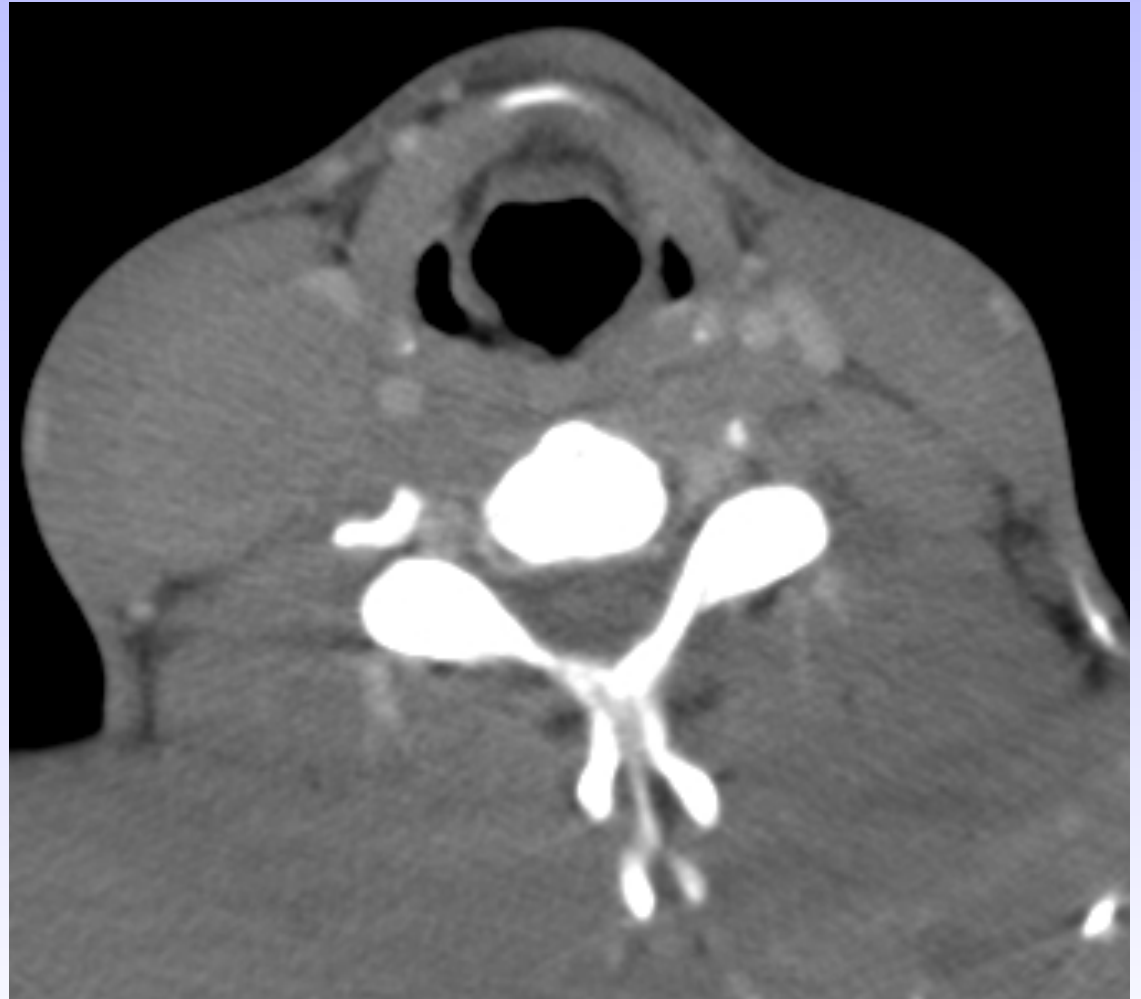
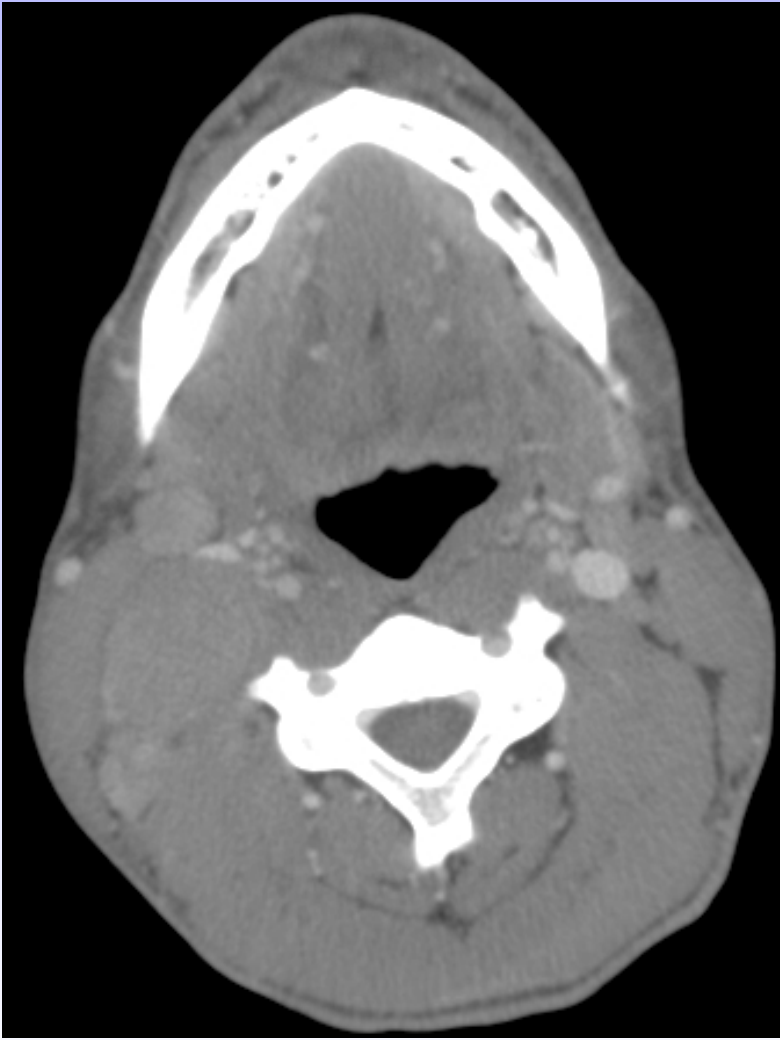
## US

- Obliteration of echogenic hilum
- Long-axis to short-axis ratio < 1.5
- Cystic changes
- Microcalcifications





# Case 2: 24 year old male status post assault

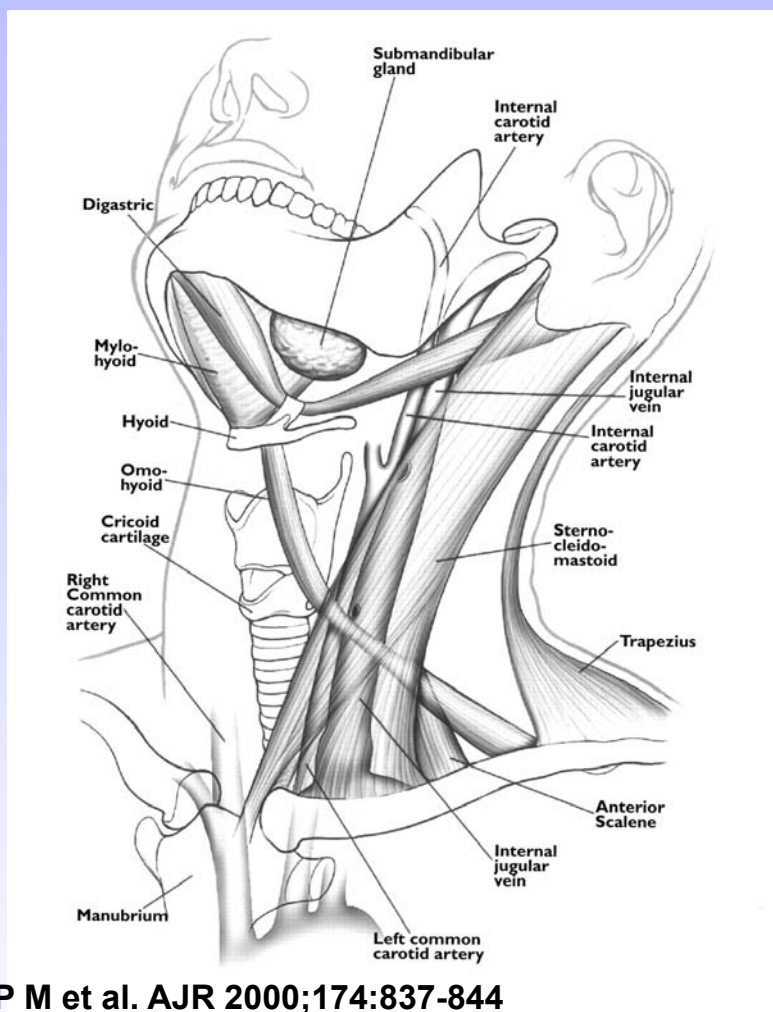


# Normal or Abnormal?

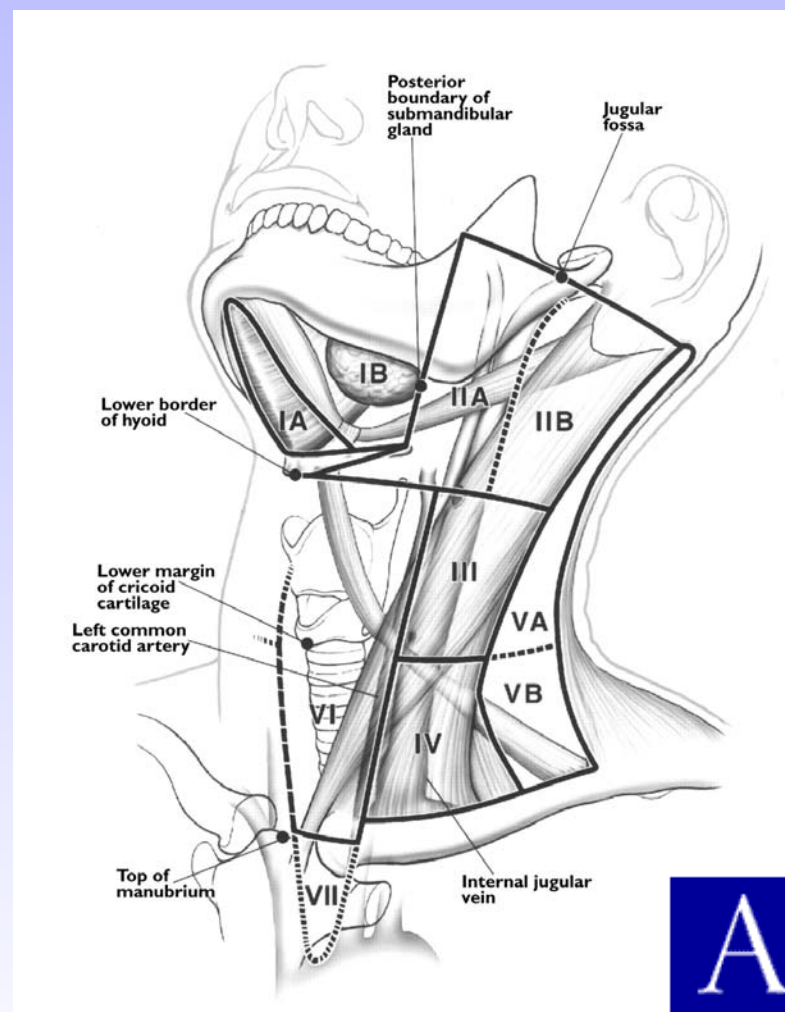




# Neck Classification- Adenopathy



Som P M et al. AJR 2000;174:837-844

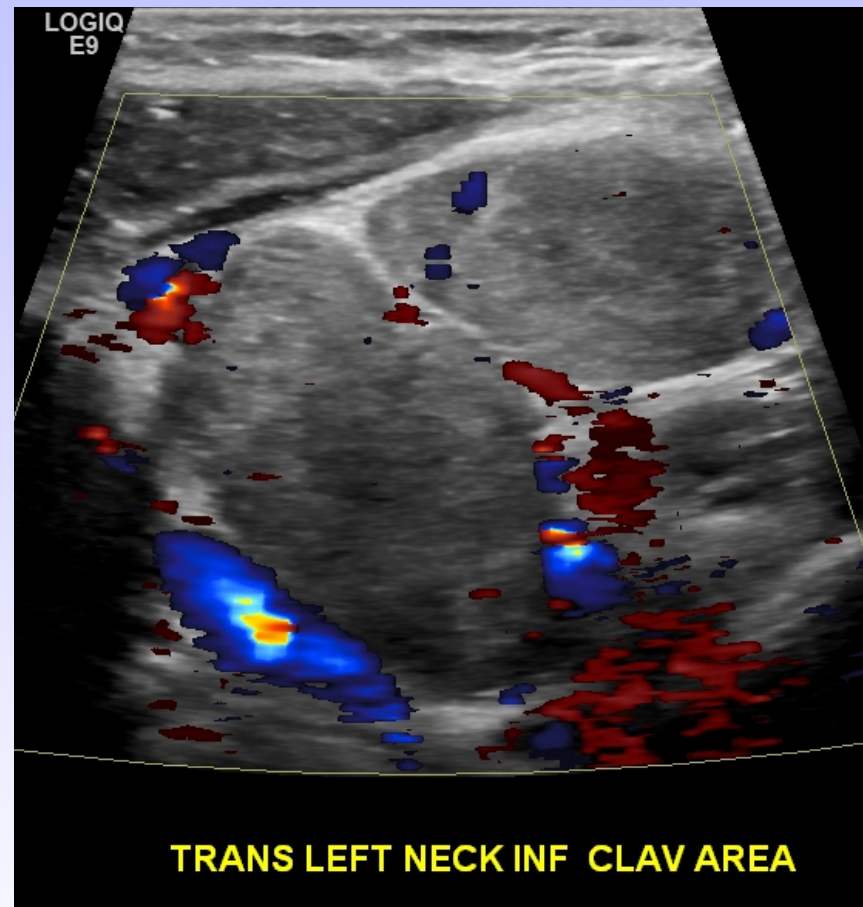
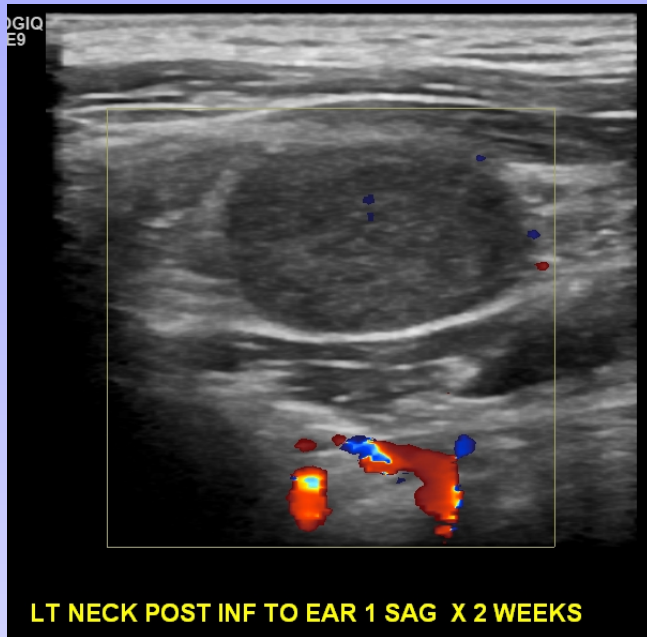


AJR

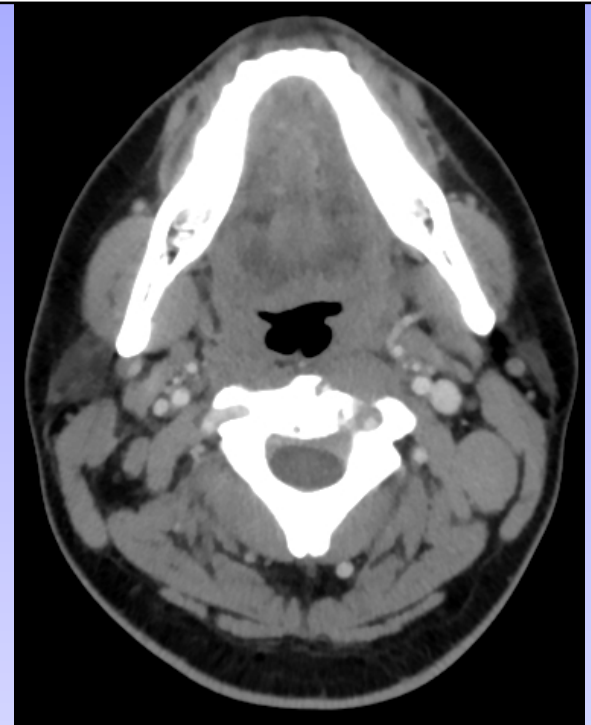
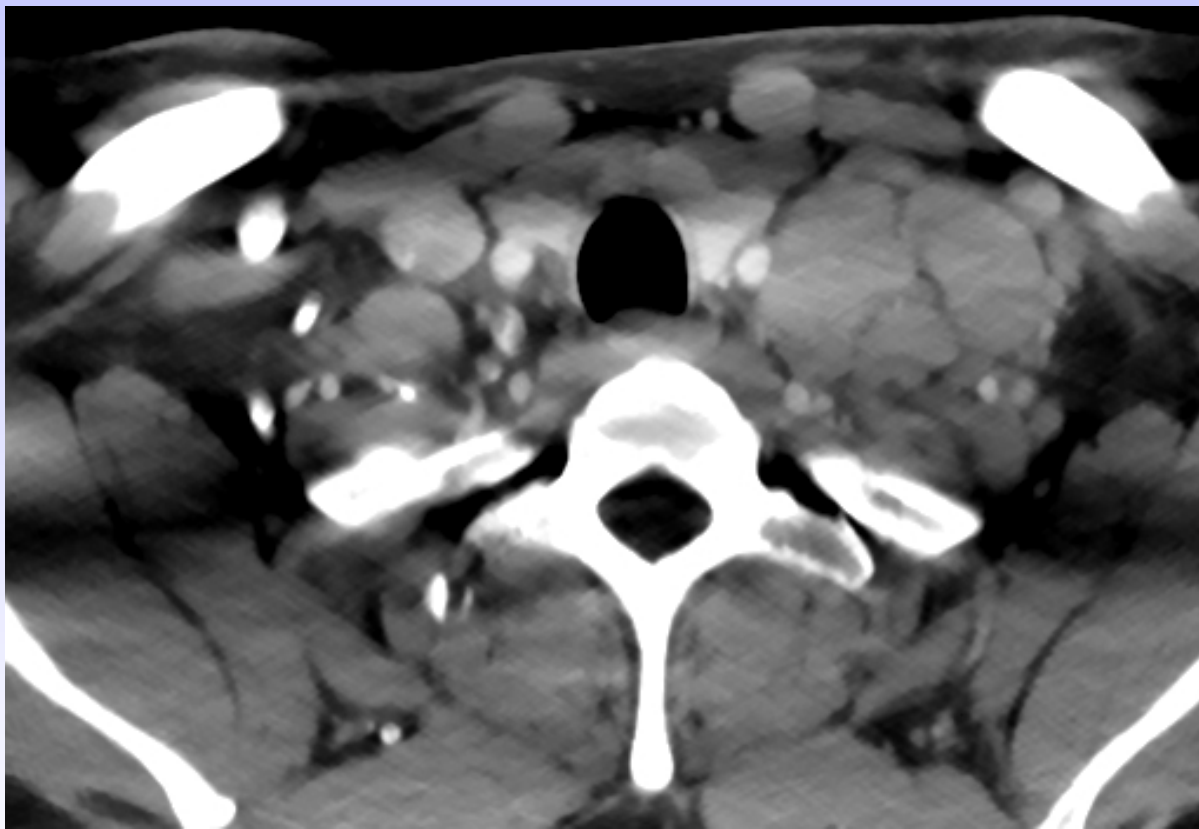


UNIVERSITY of ROCHESTER

- 27 year-old male with left-sided neck swelling for 6 months, worsening...

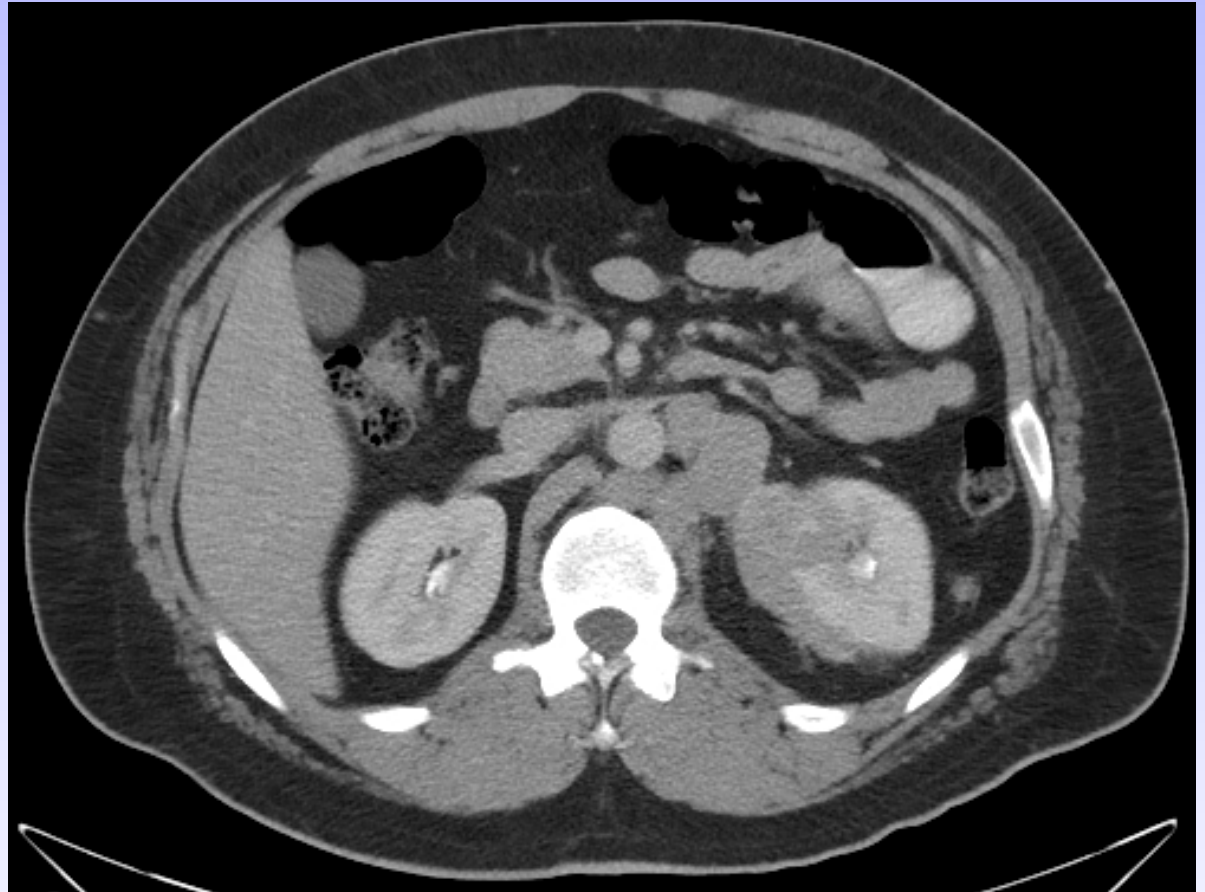


## CT Neck, same date...





# Left supraclavicular and cervical lymphadenopathy, plus...



## Differential Diagnosis?



UNIVERSITY of ROCHESTER

# Thoracic Duct

## Right Thoracic Duct

- Drains:
  - Right arm and right side of chest
  - Neck and head
  - Left lower lobe

## (Left) Thoracic Duct

- Drains into systemic circulation at left brachiocephalic vein
- Virchow's node- left supraclavicular node, vicinity of entrance of thoracic duct into circulation
- Drains much of the remainder of the body



# Virchow's Node

- Left supraclavicular lymphadenopathy
- Especially concerning for malignancy
- Differential considerations (especially if unilateral):
  - Lymphoma
  - Thoracic or retroperitoneal cancer
  - Bacterial or fungal infections



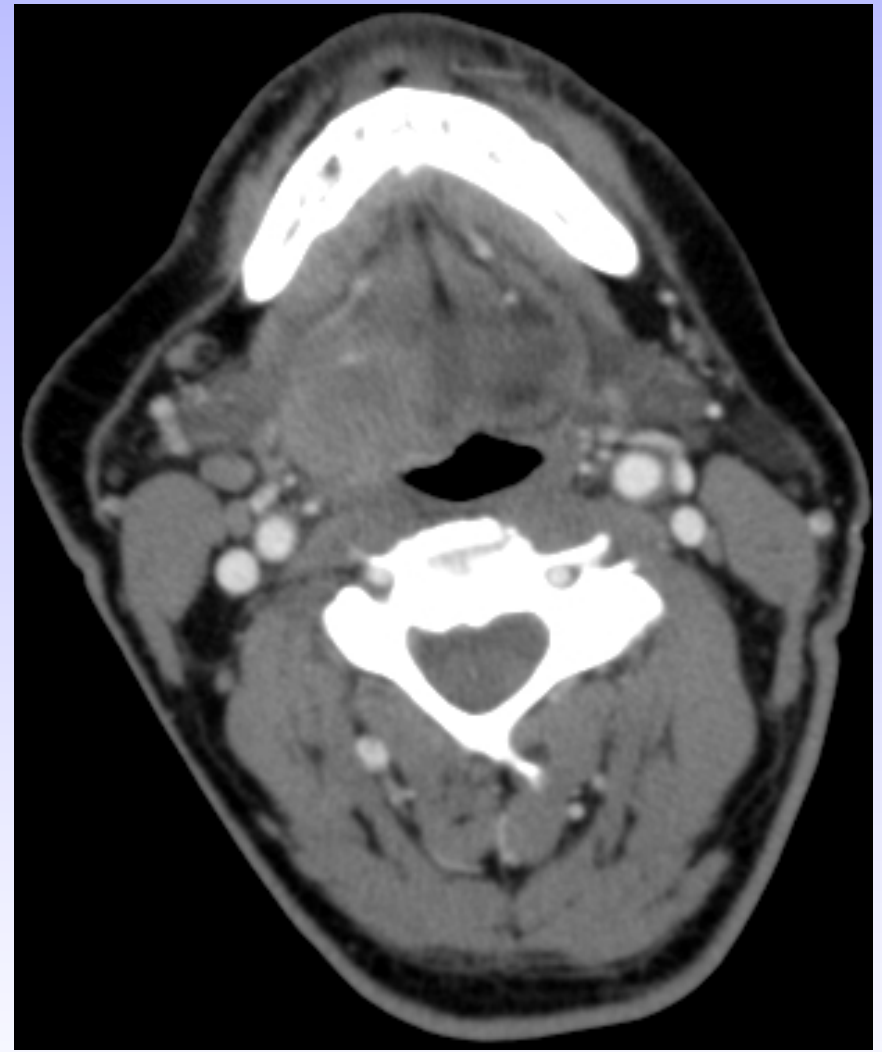
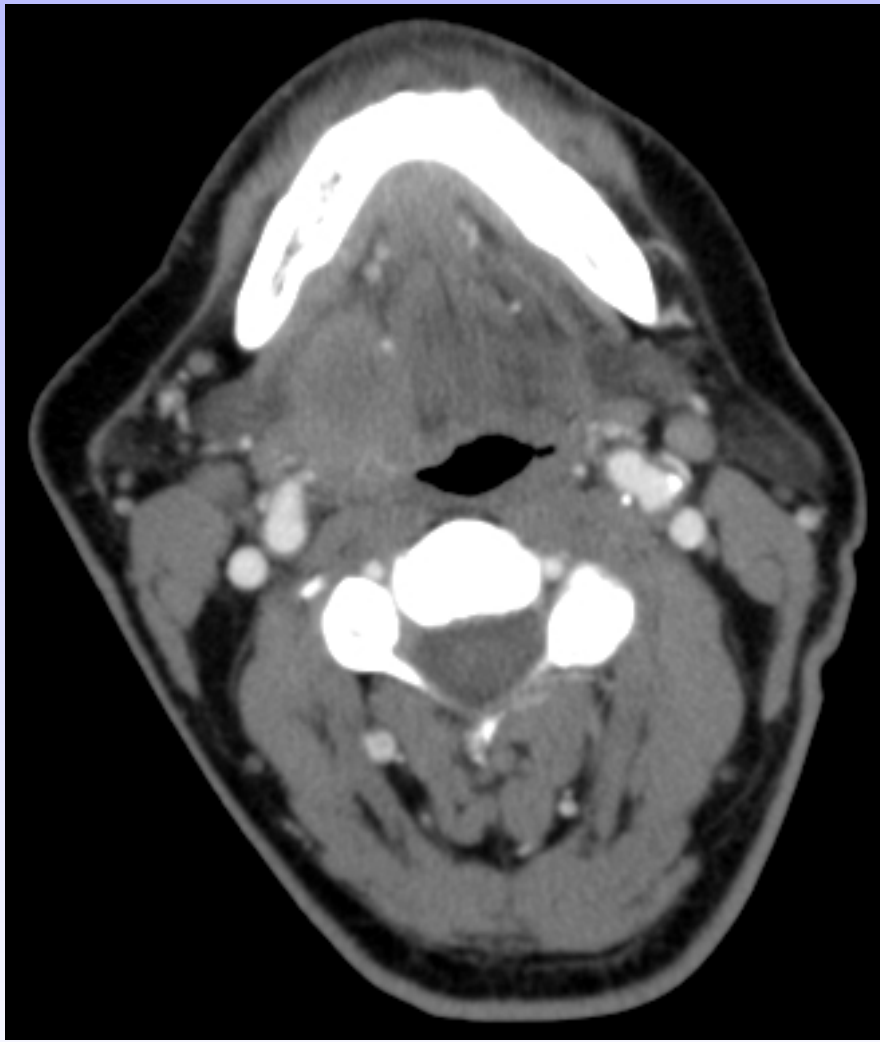


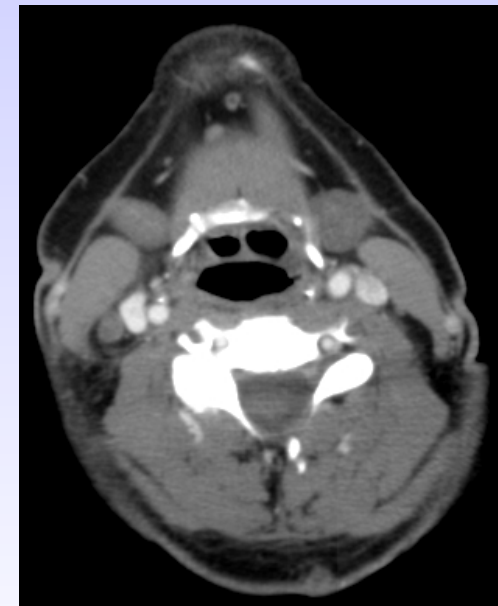
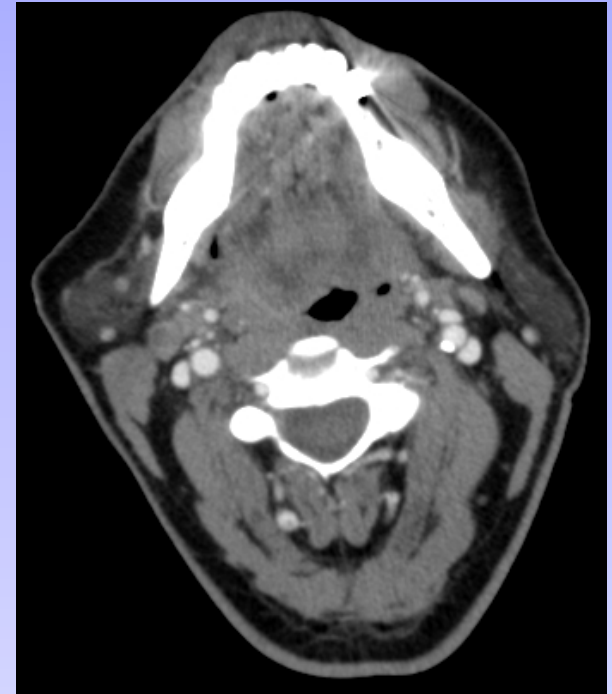
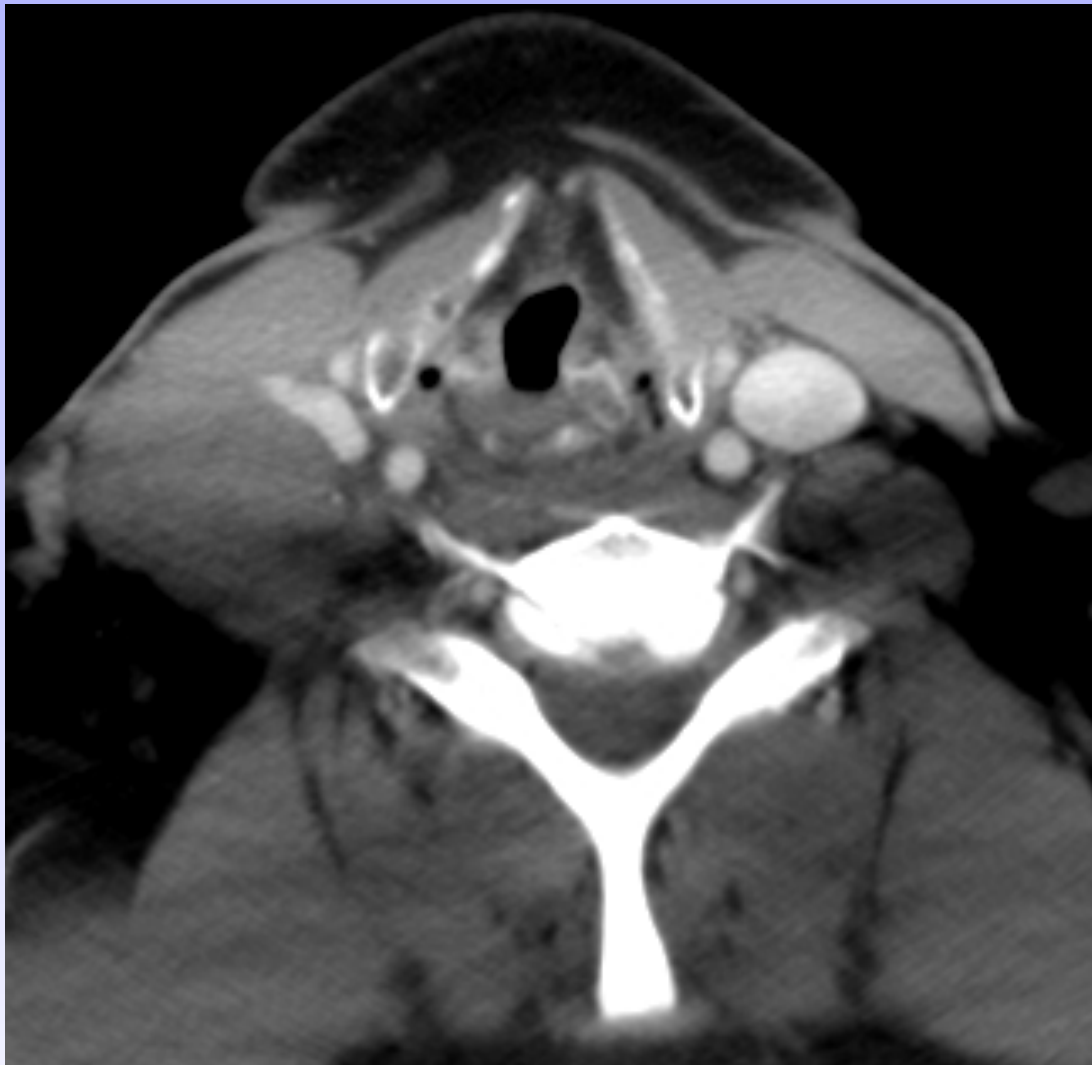
# Lytic Metastases

- **Renal cell carcinoma**
  - expansile
- **Thyroid carcinoma**
- Lung
- Breast



60 year-old with right neck pain and fullness for several months...





# Post Chemoradiation...

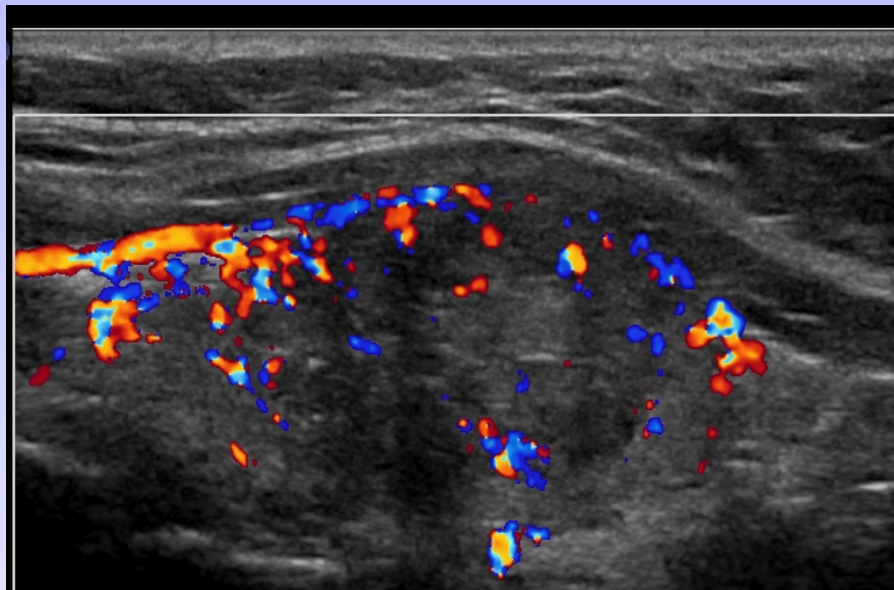


# Regional Nodal Metastases

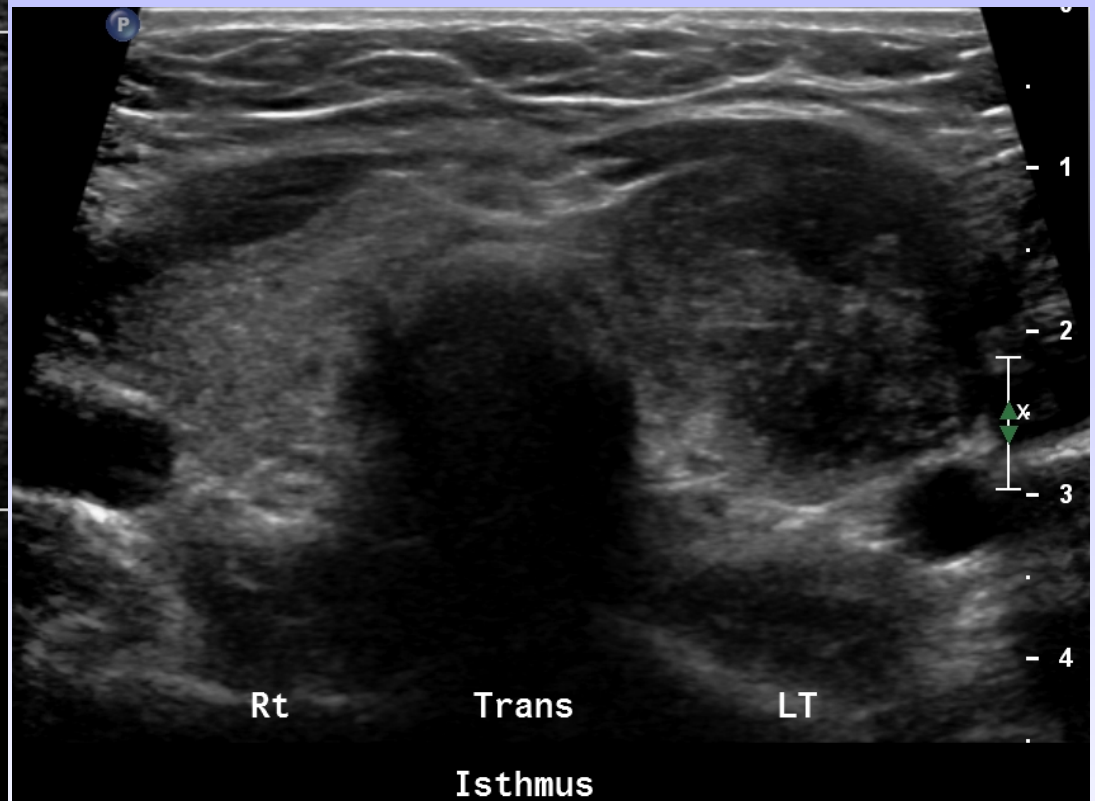
- NX- regional lymph nodes cannot be assessed
- N0- no regional node metastasis
- N1- single ipsilateral node < 3 cm
- N2a- single ipsilateral node (3-6 cm)
- N2b- multiple ipsilateral nodes, all < 6 cm
- N2c- bilateral or contralateral nodes, < 6 cm
- N3- metastasis in a lymph node > 6 cm



# 26 year-old female presents with neck swelling...

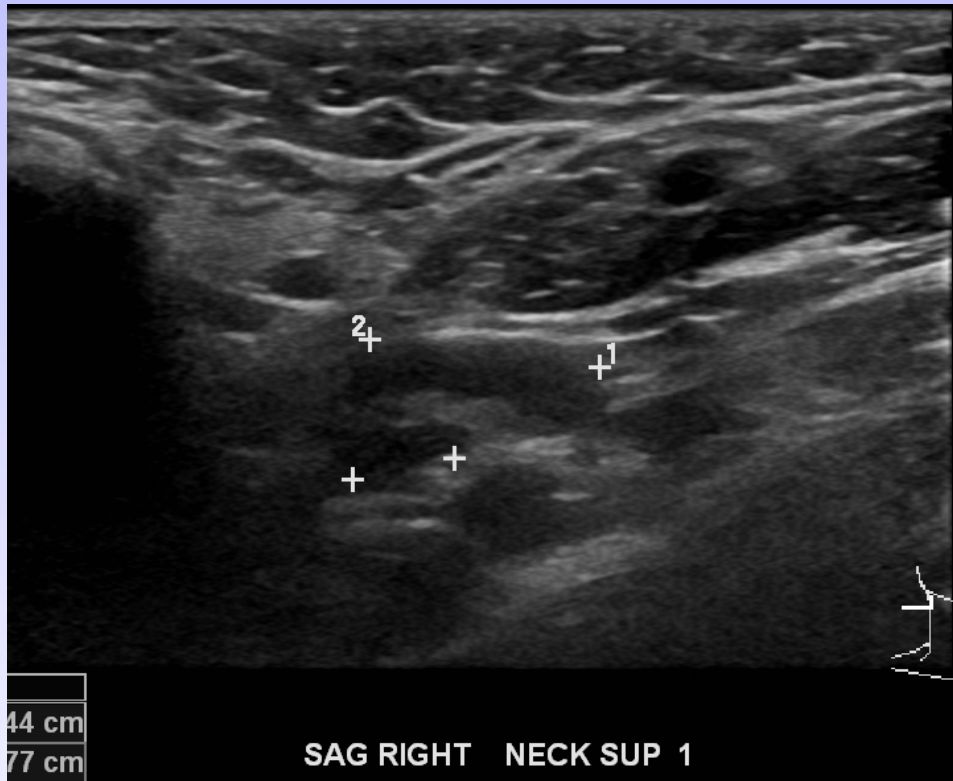


Long Lt Lobe Mid

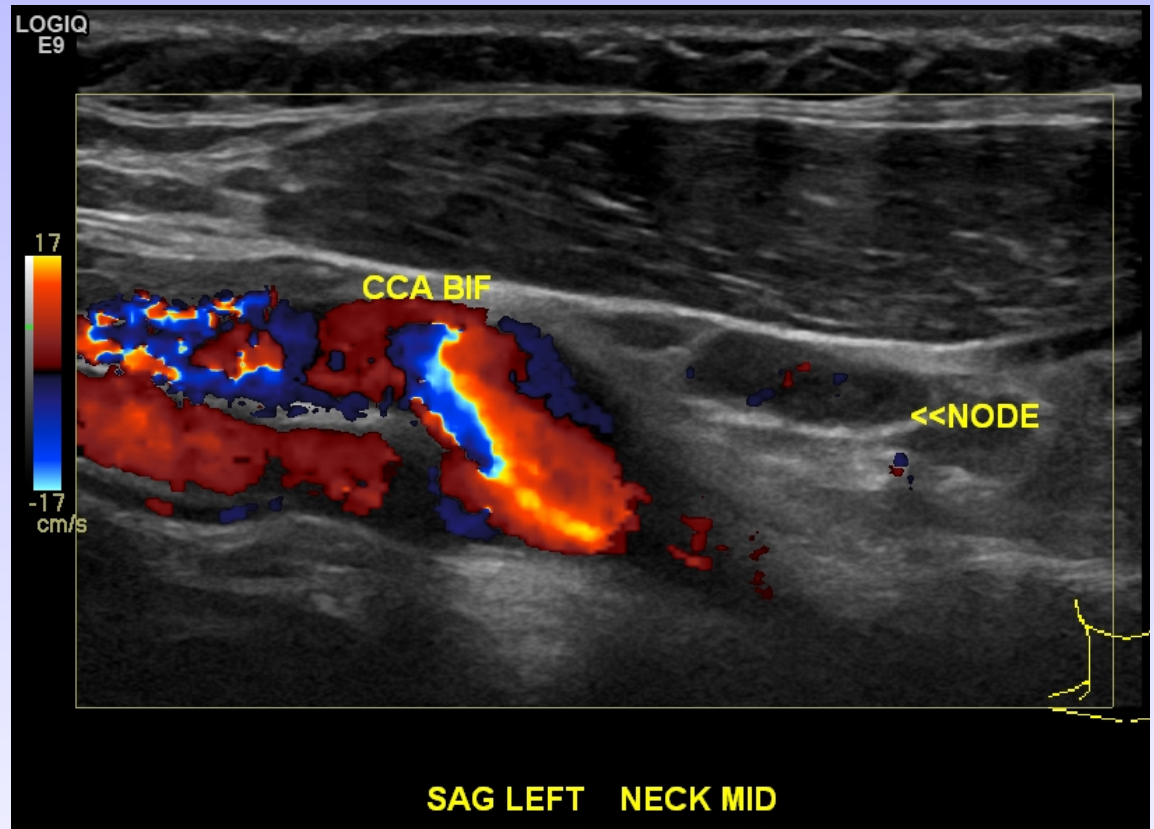
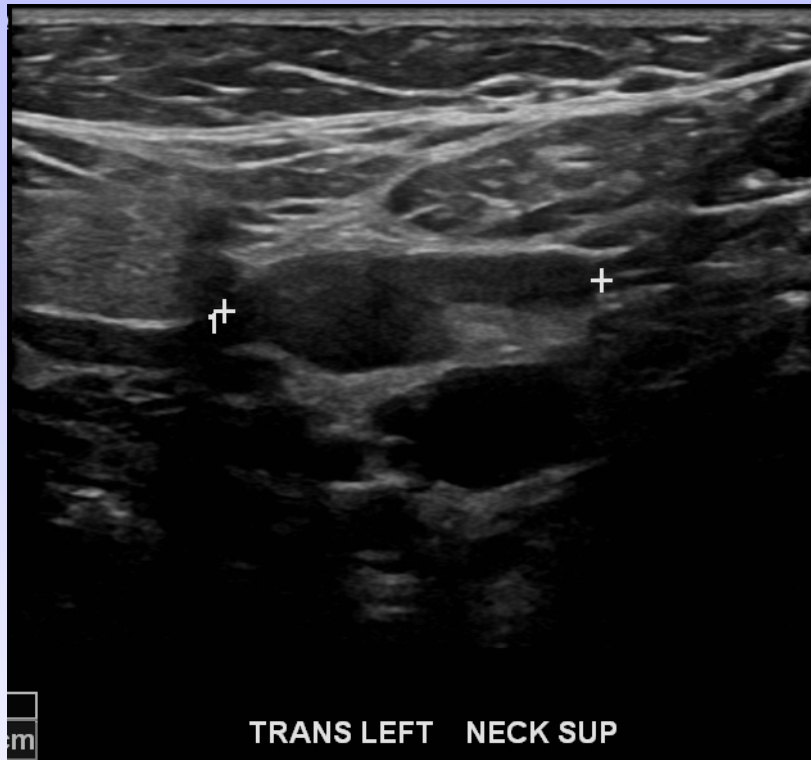




# Normal or Abnormal?



# Normal or Abnormal?



# Thyroid Cancer

## Benign Characteristic

- Cystic Elements
- Hyper/isoechoic
- Eggshell calcification
- Inspissated colloid

## Malignant Characteristics

- Entirely solid
- Hypoechoic
- Microcalcifications
- Associated cervical adenopathy



# Thyroid Cancer Metastasis

## Papillary

- Lymphatic dissemination more common than hematogenous spread
- Cervical nodal metastases often present at diagnosis
  - Cystic degeneration
  - microcalcifications
- Metastatic cervical nodes does not affect prognosis
- Distant metastases rare

## Follicular

- Hematogenous spread
  - Bone, brain lung, liver
- Metastases to cervical nodes uncommon
- Distant metastases in 20-40% of widely invasive variant

