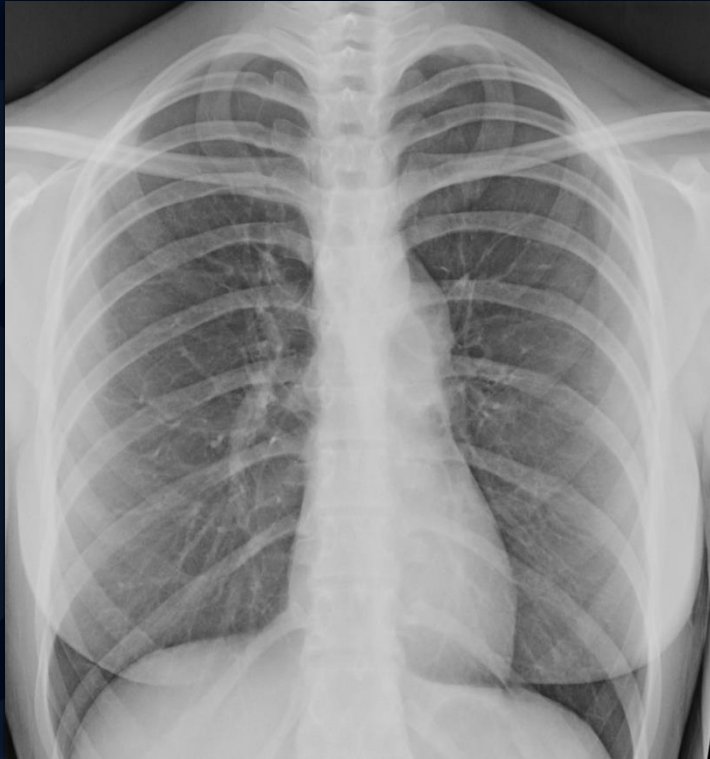
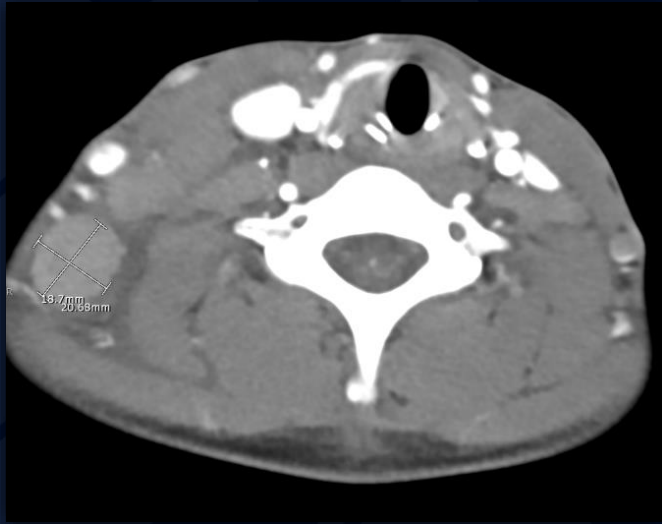
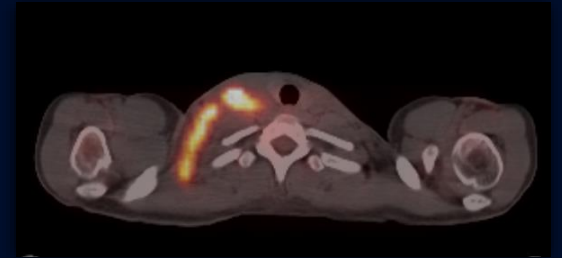
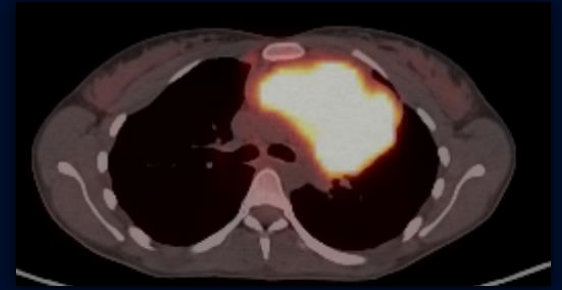
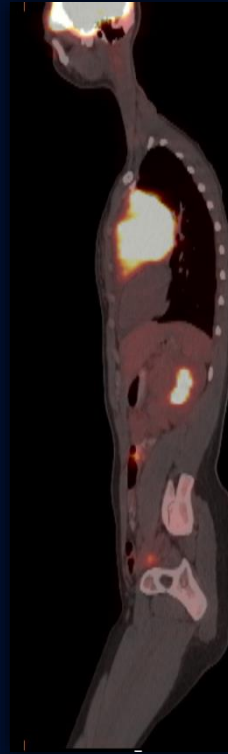
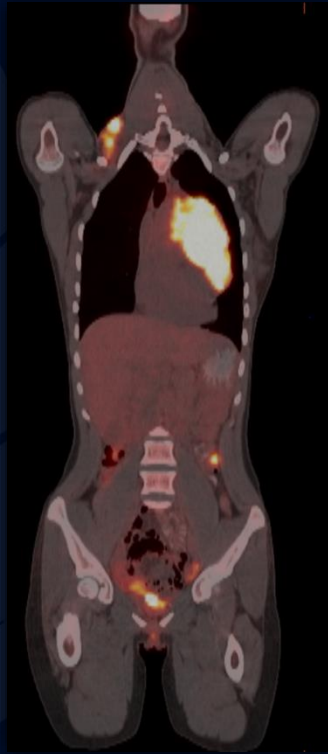


21 year old female presented to the ER with right supraclavicular lymphadenopathy, fevers and excessive sweating at night.

Elena G. Violari M.D.





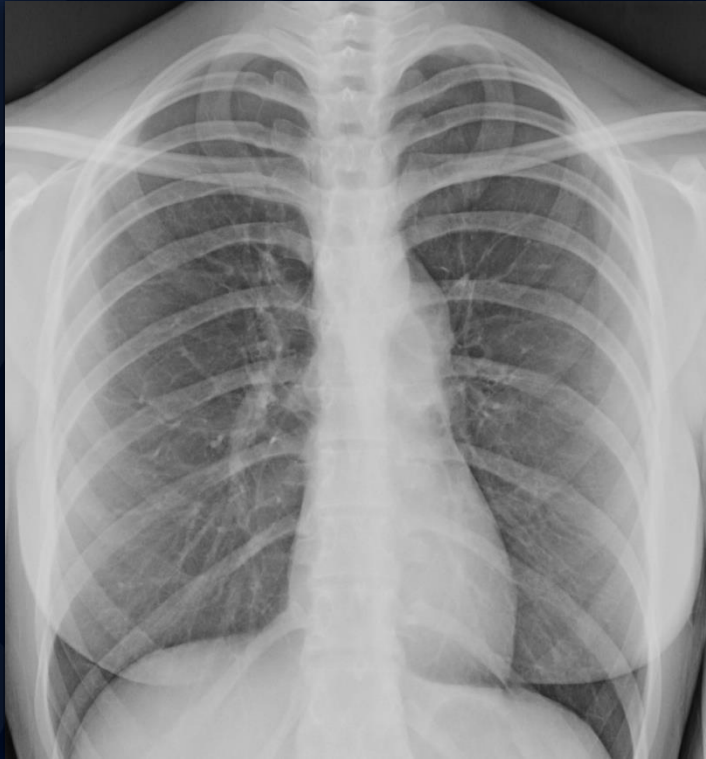


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The leaf's edge is serrated.

?

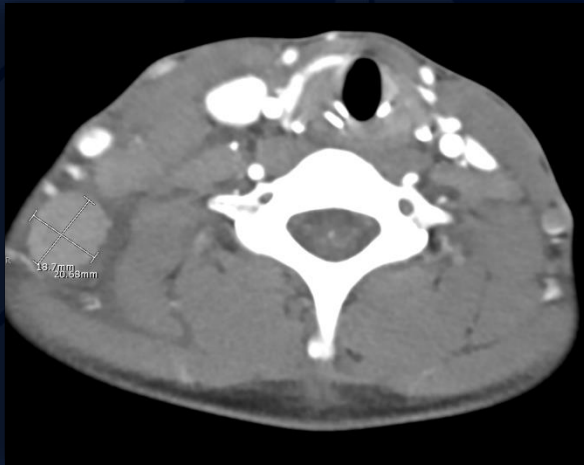
# Nodular Sclerosing Hodgkin's Lymphoma

# Plain radiographs



PA view demonstrates mild widening of the left para-tracheal stripe.  
Lateral projection suggests a predominantly anterior mediastinal mass.

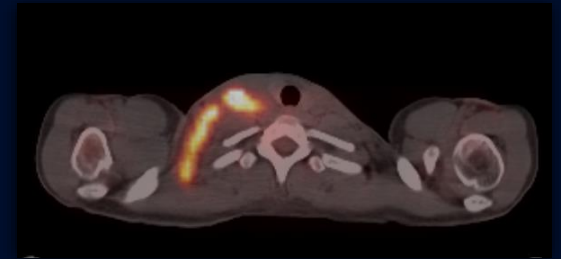
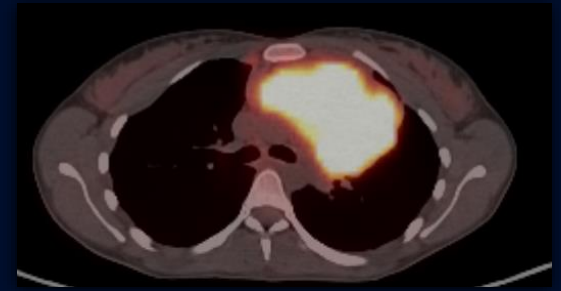
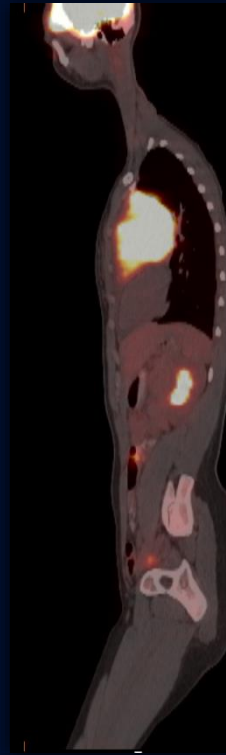
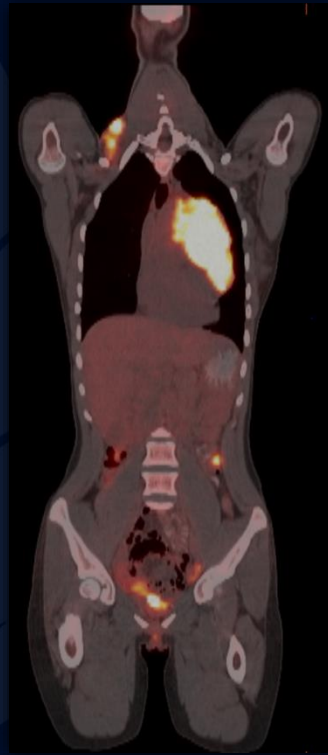
# CT soft tissue neck with IV contrast



Axial, coronal and sagittal views demonstrate bulky adenopathy on the right neck, extending from cervical level III to the supraclavicular region. Nodes are homogeneous and isodense to muscle without necrosis or calcifications.



# Whole Body PET/CT



Axial, Coronal and Sagittal views demonstrate a large mediastinal mass with intense uptake and several surrounding pre-vascular lymph nodes in combination with right bulky adenopathy that extends from cervical level III down to the supraclavicular region. This was biopsy proven Nodular Sclerosing Hodgkin Lymphoma.

# Nodular Sclerosing Hodgkin's Lymphoma

- **Definition:**

- Hodgkin's lymphoma (HL) is characterized by Reed-Sternberg cells and accounts for ~1% of all cancers. HL spreads contiguously and predictably along lymphatic pathways and is curable in ~90% of cases, depending on its stage and sub-type.

- **Epidemiology:**

- Bimodal distribution in the age of affected patients, with peaks in young adults (15-34 years) and older patients (>55 years).

- **Etiology:**

- Unknown
- Up to 50% Epstein-Barr virus (EBV) (+)
- Increased risk with immunosuppression
- Genetics (Familial association, 2-9 x increased risk for siblings)
- Associated abnormalities (HIV infection)

# Nodular Sclerosing Hodgkin's Lymphoma

- **Clinical presentation:**
  - Painless lymphadenopathy.
  - Systemic symptoms (B symptoms) such as night sweats and weight loss.
- **Pathology:**
  - Presence of reed sternberg cells (type of B cell). These cells however only occupy a very small proportion (<5%) of the overall cell population of the affected lymph node. Contiguous spread is another feature. EBV infection is present in 40-80% depending on subtype.
- **Subtypes:**
  - Nodular Sclerosing: ≈70%
  - Mixed cellularity: ≈25%
  - Lymphocyte rich: 5% (best prognosis)
  - Lymphocyte depleted: <5% (worst prognosis)

# Nodular Sclerosing Hodgkin's Lymphoma

- **CT findings:**

- Non-contrast CT:

- Homogeneous lobulated round masses
- Nodes isodense to muscle
- Calcification uncommon except after treatment

- Contrast CT:

- Variable enhancement
- Necrosis may be seen as low-density center

- **Nuclear Medicine findings:**

- FDG PET shows marked activity

- Classic HL: High uptake
- NLPHL: Moderate uptake

- Gallium-67

- Traditional modality to assess treatment response

# Nodular Sclerosing Hodgkin's Lymphoma

## Differential Diagnosis:

- Reactive lymph nodes
  - Not as large as HL nodes
  - Clinical history of upper respiratory tract infection
- Nodal differentiated Thyroid carcinoma
  - Favors lower neck and superior mediastinum
  - Not usually bulky
  - Cystic change
- Non-Hodgkin's Lymphoma in Lymph nodes
  - Imaging cannot distinguish HL and non-HL (NHL) nodes
  - NHL more frequently extranodal (30%)
- Nodal squamous cell carcinoma
  - Central nodal necrosis, extranodal spread
- Cat-scratch fever
- AIDS related lymphadenopathy

# References:

- 1. Guermazi A, Brice P, de Kerviler E E et-al. Extranodal Hodgkin disease: spectrum of disease. Radiographics. 21 (1): 161-79.
- 2. Toma P, Granata C, Rossi A et-al. Multimodality imaging of Hodgkin disease and non-Hodgkin lymphomas in children. Radiographics. 27 (5): 1335-54.
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- 4. Delecluse HJ, Feederle R, O'Sullivan B et-al. Epstein Barr virus-associated tumours: an update for the attention of the working pathologist. J. Clin. Pathol. 2006;60 (12): 1358-64.