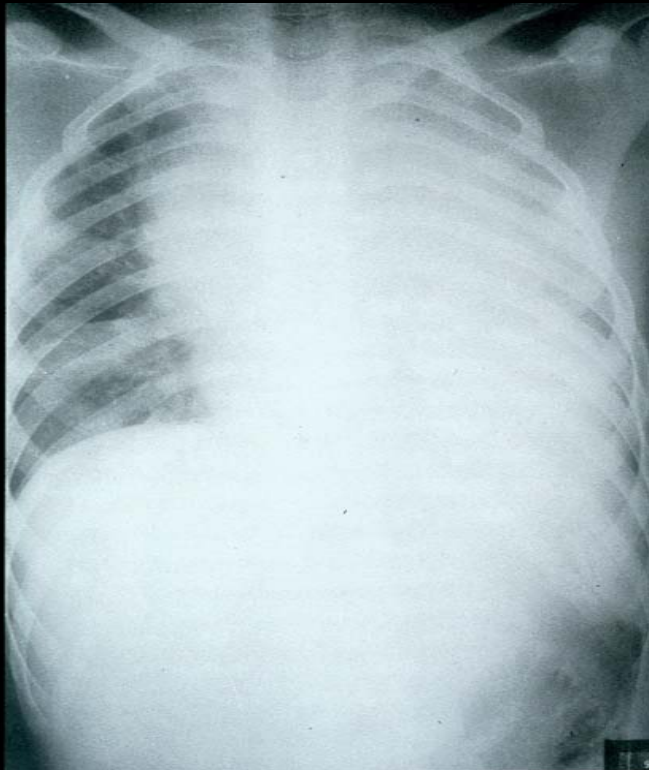


# Anterior Mediastinal Masses

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Peter Slinger MD, FRCPC

# 25 y.o. F, Diag. Bx. Ant. Mediastinal Mass

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? History



# Anterior Mediastinal Mass

25 y.o. Female

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c/o cough + supine dyspnea  
x 2 mo.

? Px

? Investigations



Flow

**PEFR**

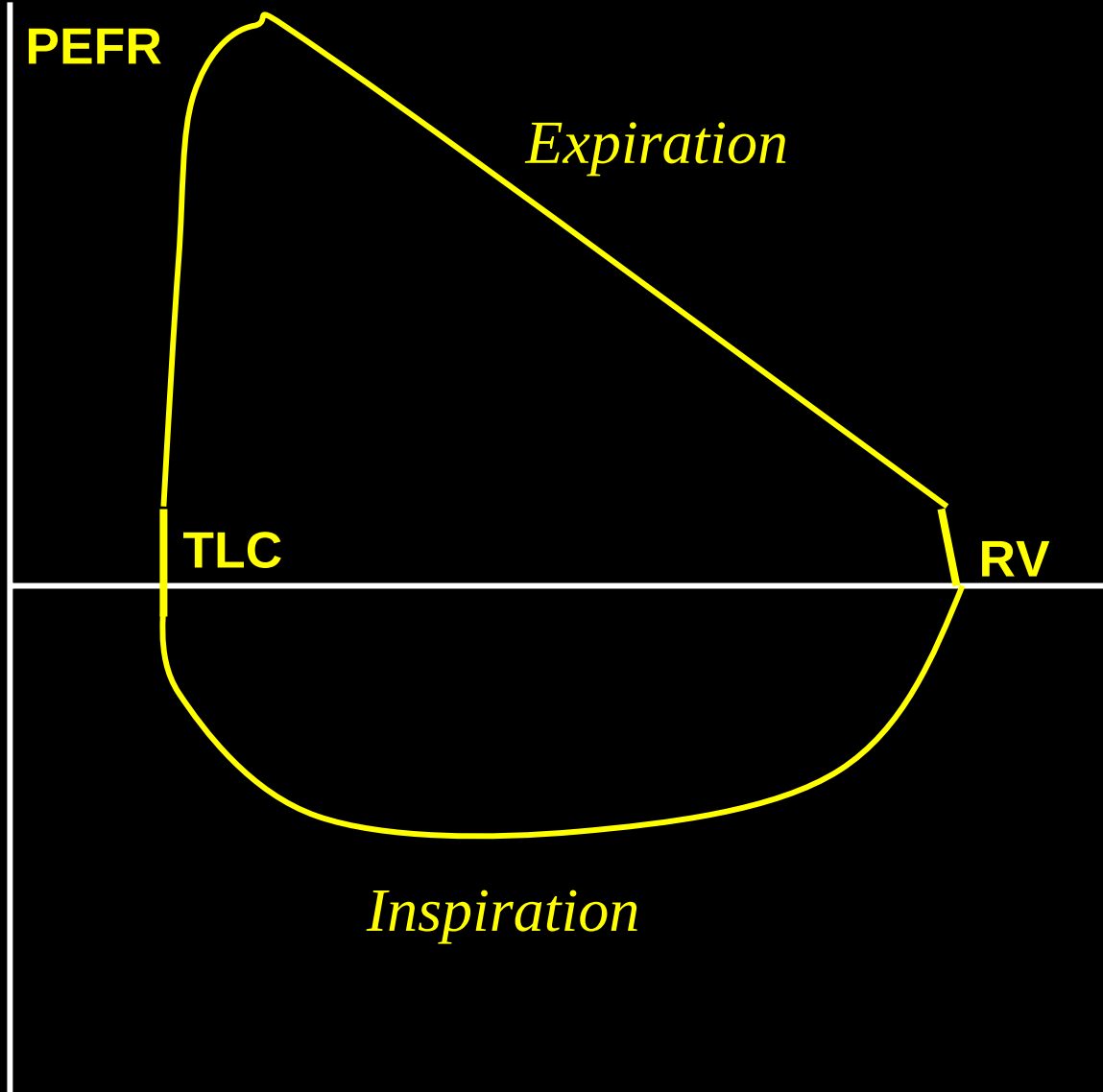
*Expiration*

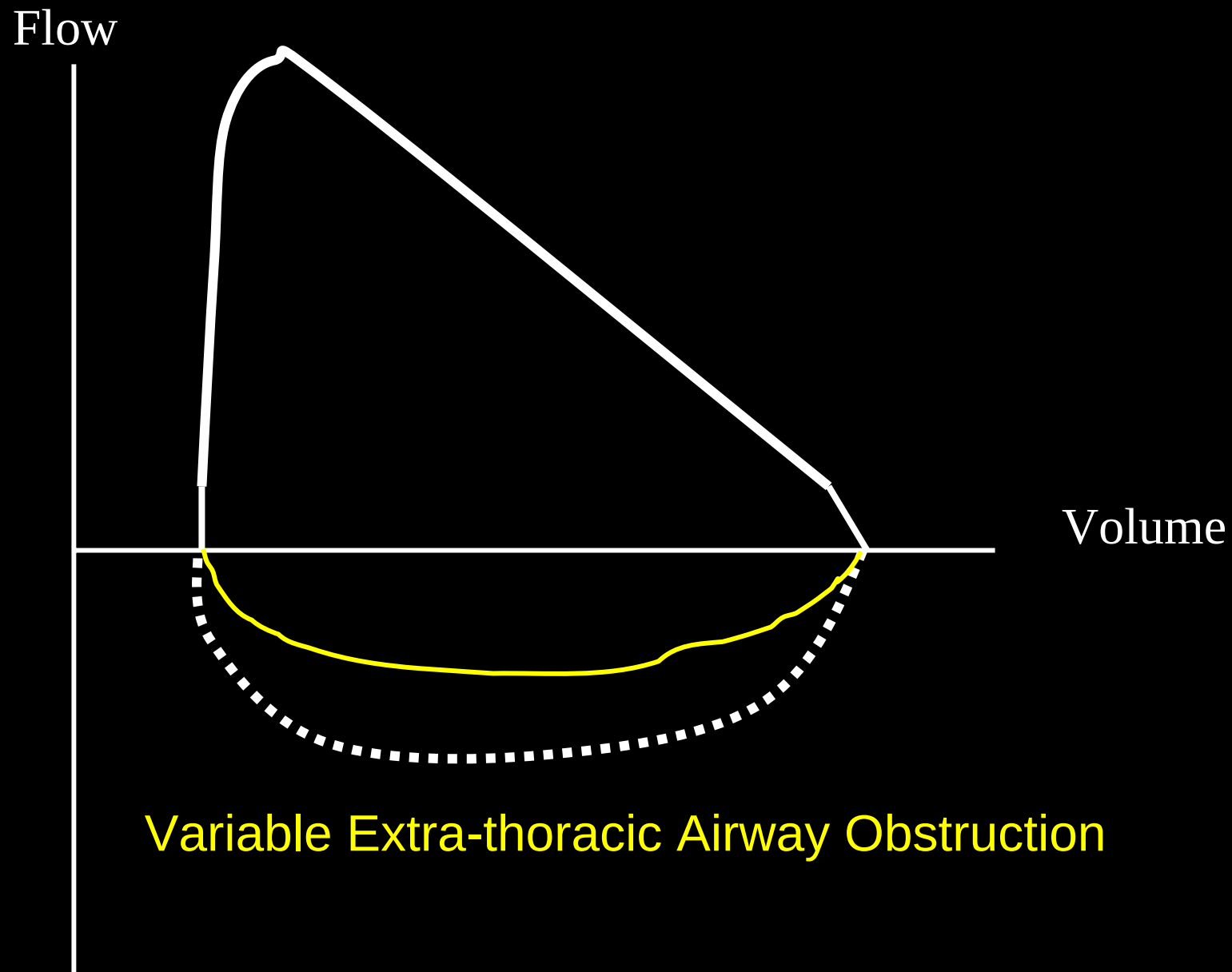
**TLC**

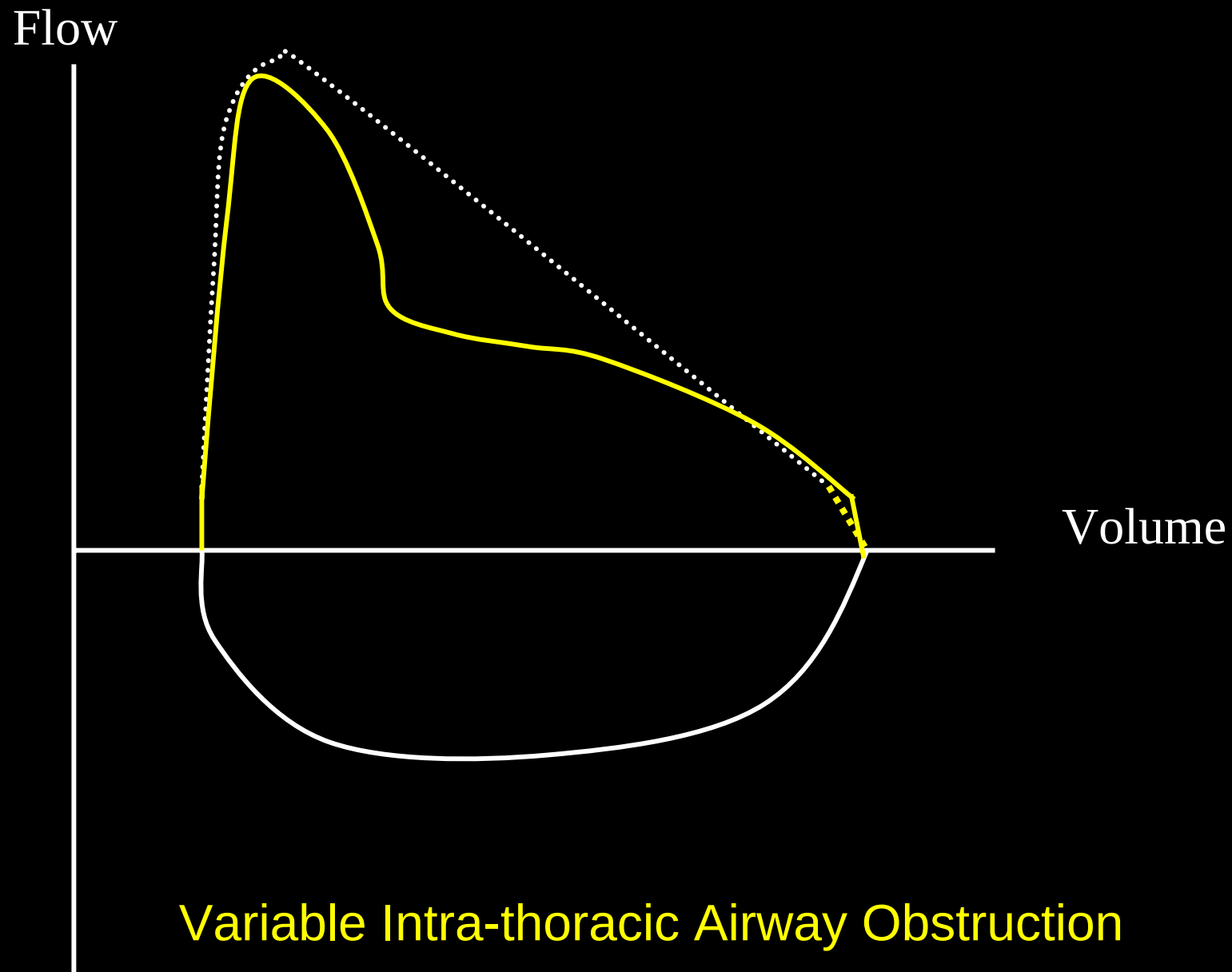
**RV**

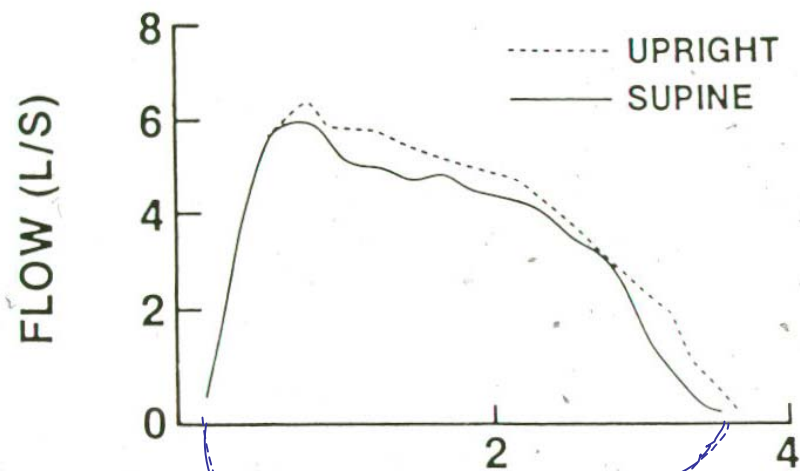
Volume

*Inspiration*

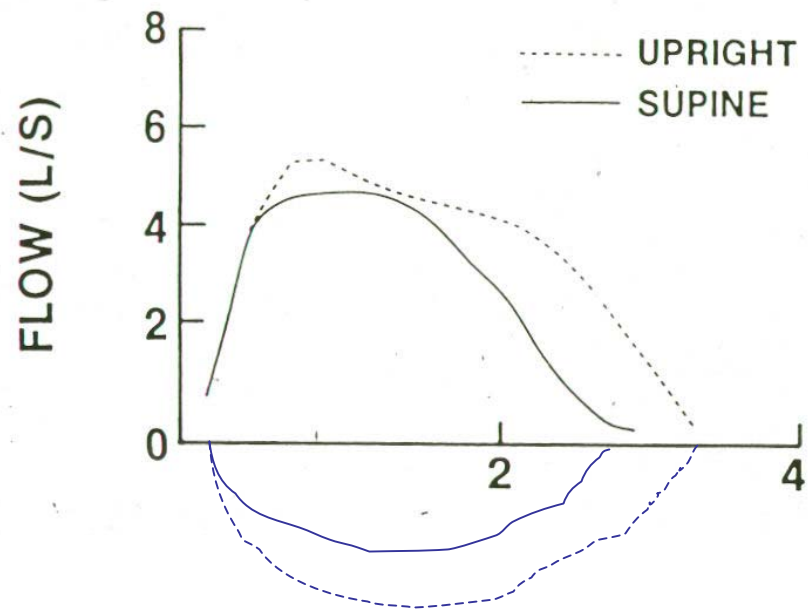




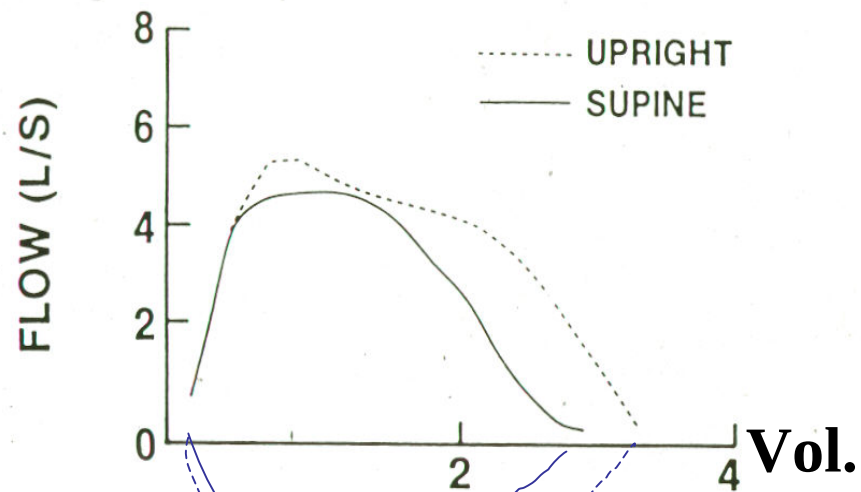




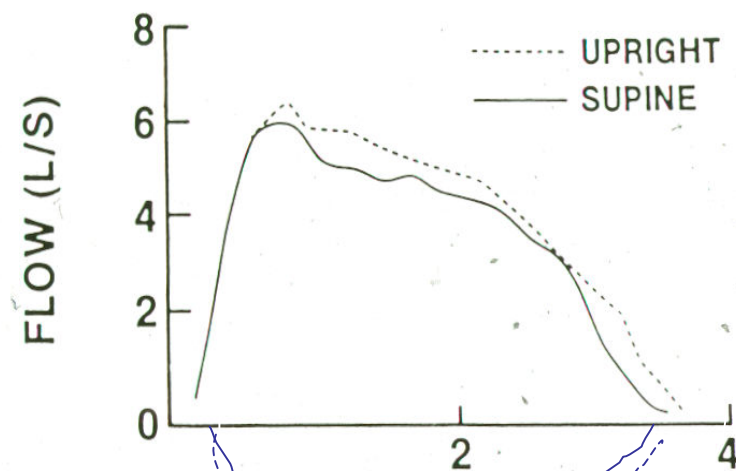
Volume







Before Rx



After Rx

Neuman et al. Anesthesiology 60: 144, 1984

# Spirometry in Surgery for Anterior Mediastinal Masses

Hnatiuk O, et al. Chest 120: 1152-6, 2001

- ◆ 37 Adults: Thymoma, lymphoma, other tumor/cyst, etc.
- ◆ Mediastinotomy, mediastinoscopy, sternotomy, VATS
- ◆ 10/27 Upright/supine spirometry, 4/10 a/w obstr. 4/4 GA no prob.
- ◆ 15/27 dyspnea, 2/15 local anesth. ( 1 CT trach.compress + N flow/vol. loop)
- ◆ 2 complications: tear SVC, pneumothorax

# Abnormal Flow-Volume Loops in Patients with Intra-thoracic Hodgkins Disease

| Flow-Vol. Loop<br>n=25    |  | CT Trach.<br>0-mild | CT Trach.<br>Mod. | CT Trach.<br>Severe |
|---------------------------|--|---------------------|-------------------|---------------------|
| Normal<br>11              |  | 8                   | 3                 | 0                   |
| Fixed Obstr.<br>7         |  | 3                   | 1                 | 3                   |
| Variable Extra-Thor<br>7* |  | 5                   | 2                 | 0                   |
| Variab. Intra-Thor.<br>0  |  | 0                   | 0                 | 0                   |

( \* No CT evidence of Extra-Thor. Trach. Obstruct. )  
 (Vander Els, et al. Chest 2000; 117: 1256-61)

# Anterior Mediastinal Mass

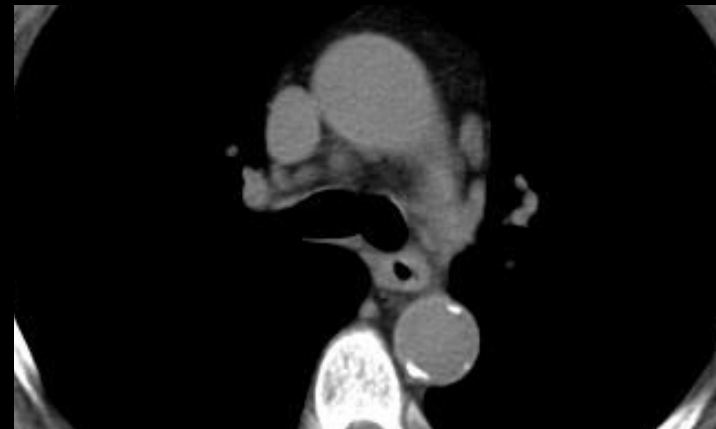
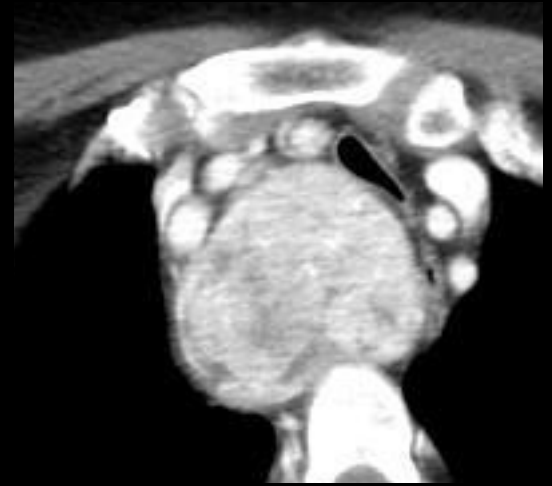
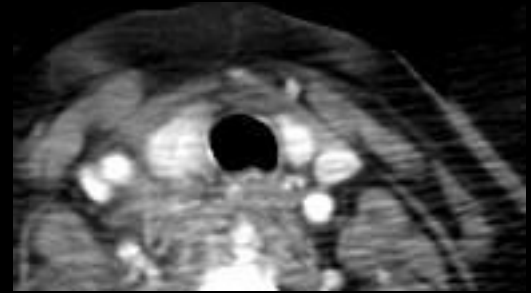
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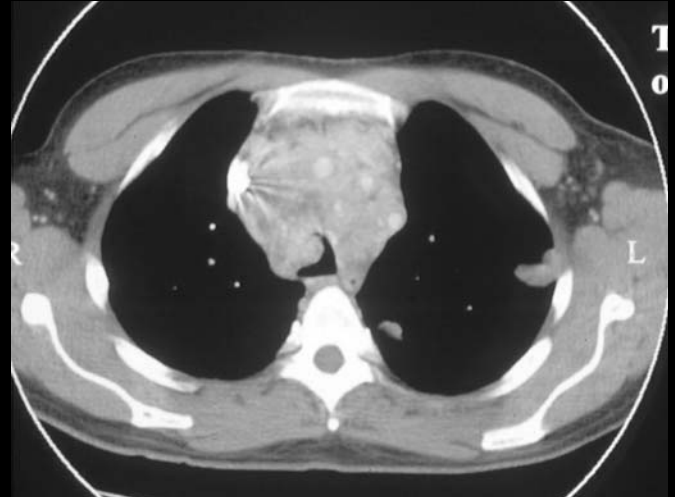
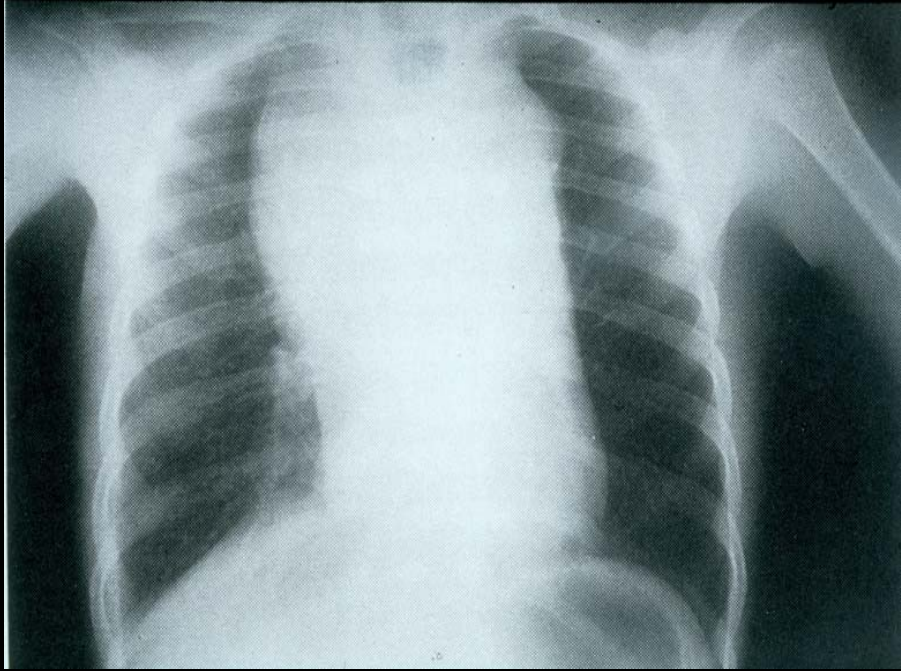
25 y.o. F, c/o cough + supine dyspnea x 2 mo.  
Diagnostic Bx.

? Px

? Investigations







# Anterior Mediastinal Mass

25 y.o. F, c/o cough + supine dyspnea x 2 mo.  
Diagnostic Bx.

? Px

? Lab.

? Management



# Anterior Mediastinal Mass

## Concepts:

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- ◆ NPIC Anesthesia  
(Noli Pontes Ignii Consumere)



# Anterior Mediastinal Mass

## Concepts:

---

- ◆ NPIC Anesthesia
- ◆ Patients: safe/ unsafe/ uncertain for NPIC

# Anterior Mediastinal Mass

## Concepts:

---

- ◆ Symptoms: dyspnea/cough  
vs. syncope
- ◆ Symptoms:
  - mild: supine no problem
  - moderate: supine some problem
  - severe: cannot lie supine

# Anterior Mediastinal Mass

## Concepts:

---

- ◆ NPIC Anesthesia
- ◆ Patients: safe/ unsafe/ uncertain
- ◆ Symptoms: mild/mod./severe
- ◆ Procedure: Diagnostic vs. Therapeutic

# Anterior Mediastinal Mass

## Concepts:

---

- ◆ NPIC Anesthesia
- ◆ Patients: safe/ unsafe/ uncertain
- ◆ Symptoms: mild/mod./severe
- ◆ Procedure: Diagnostic vs. Therapeutic
- ◆ Children vs. Adults

# Anterior Mediastinal Mass

## NPIC Anesthesia:

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- ◆ Safe: Asymptomatic adult no tracheal compression
- ◆ Unsafe:  
Severely symptomatic adult/child;  
child CT trach. compress.  $\geq 50\%$
- ◆ Uncertain: all others

# 20 y.o. F, Diag. Bx. Ant. Mediastinal Mass

---

? Management  
safe/  
unsafe/  
**uncertain**



# Management for Uncertain Patients for “NPIC” Anesthesia:

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## ALL Patients:

- ◆ Determine optimal positioning
- ◆ Secure airway beyond stenosis if possible
- ◆ Rigid bronchoscope

## Selected Patients:

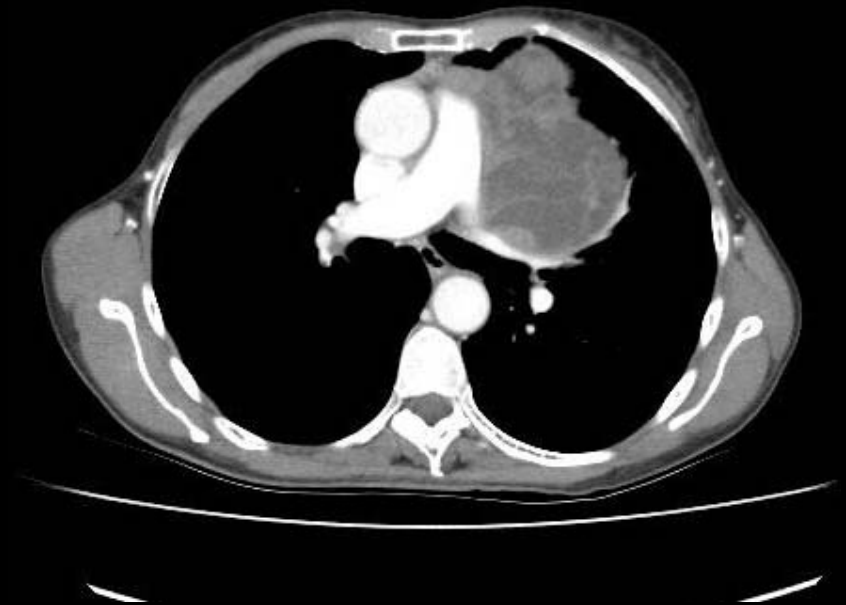
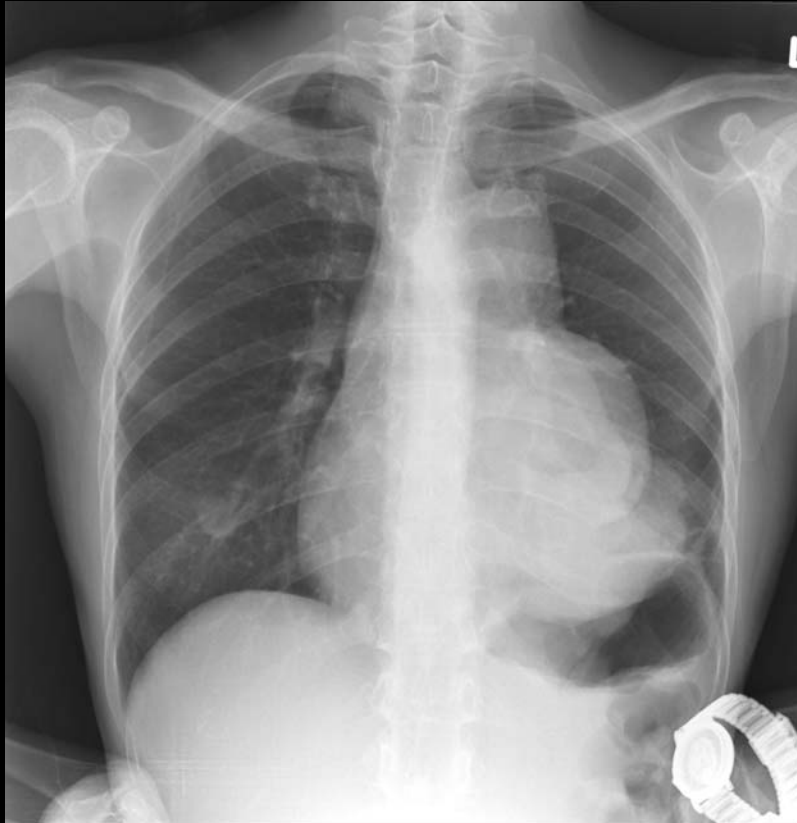
- ◆ Helium/O<sub>2</sub>
- ◆ Prep. Chest for stenotomy, elevate mass

# Cardiopulmonary Bypass Standby?





24 y.o. Male c/o Pre-syncope



Cardiovascular Compression

# Anterior Mediastinal Mass

20 y.o. Female

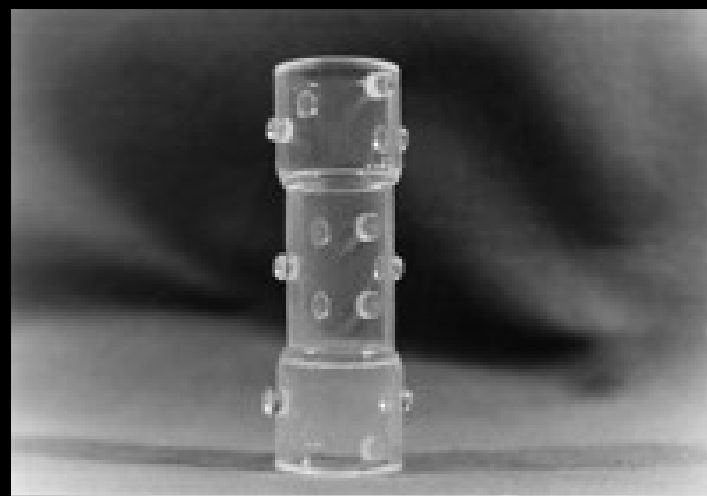
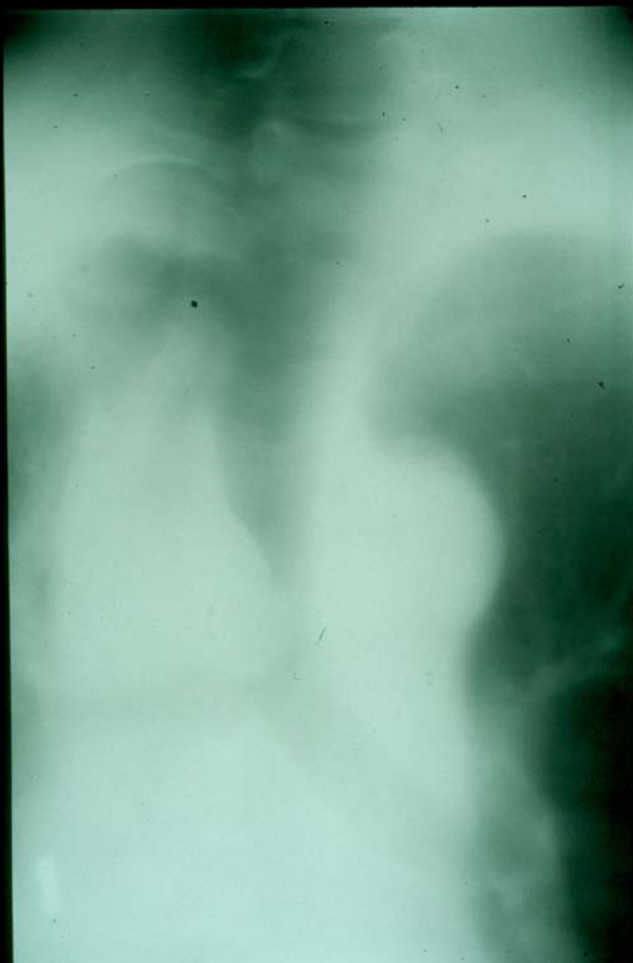
Post-op. mediastinoscopy/ biopsy

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Severe dyspnea  
post-op. in  
Recovery Room









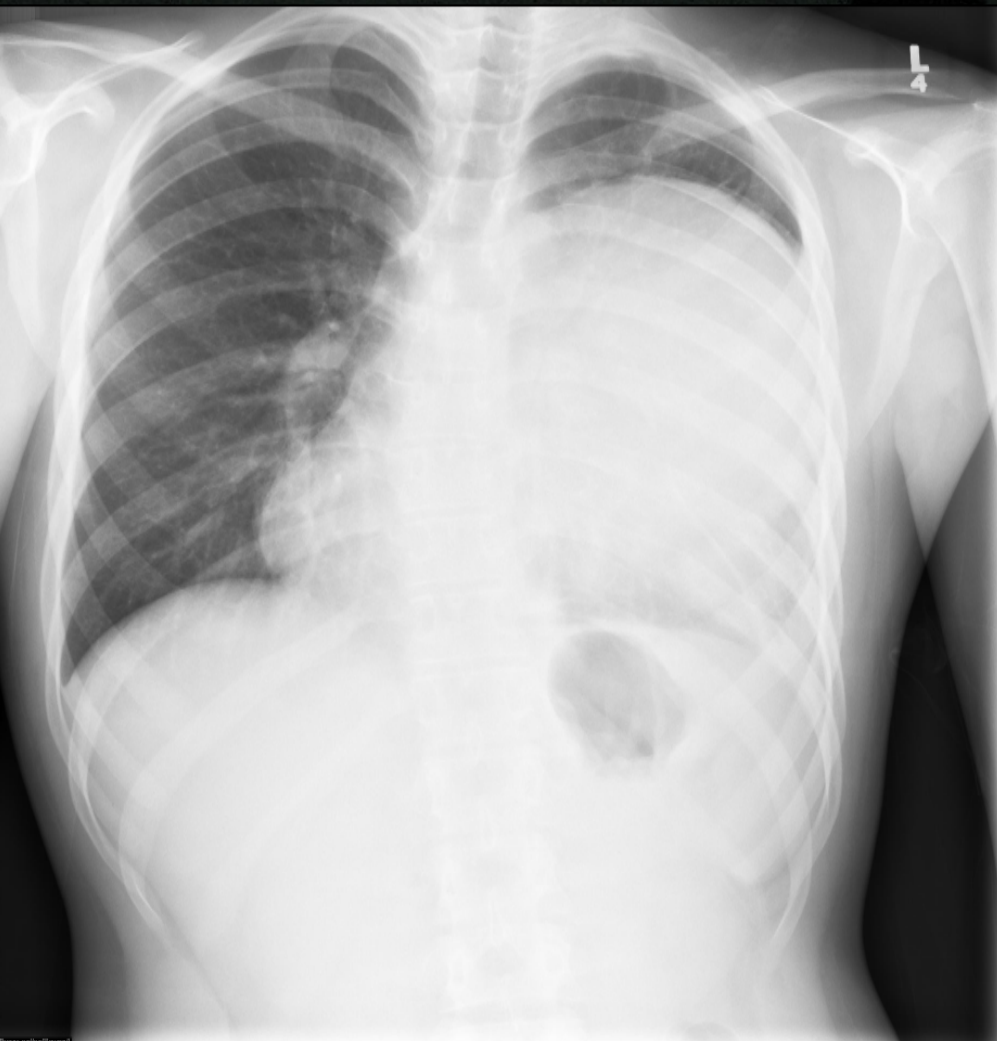
# Perioperative Complications in Adults with Mediastinal Mass

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Bechara P, et al. Anesthesiology 100: 826-34, 2004

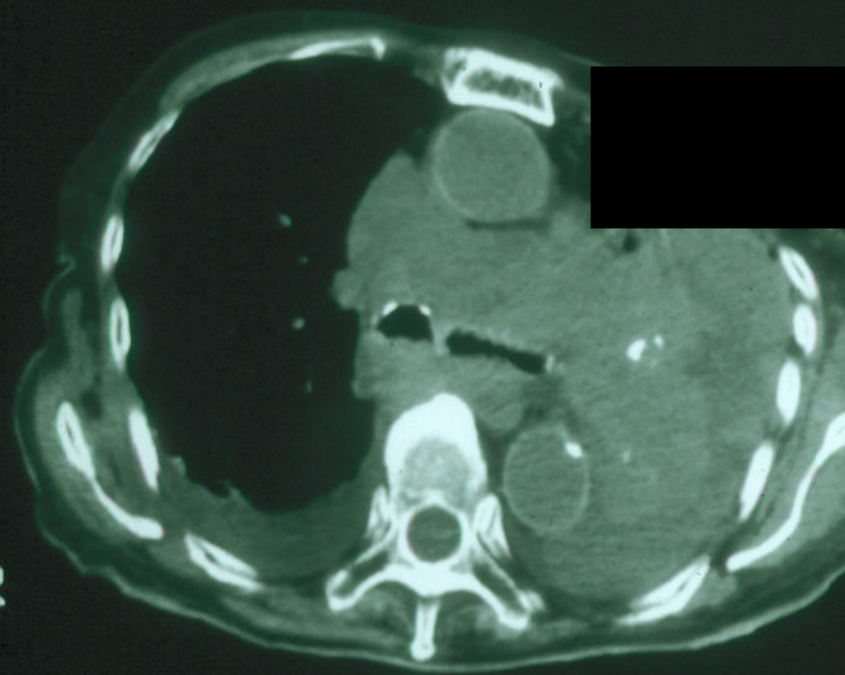
N= 105; M'scope, sternotomy, VATS, thoracotomy, other

- ◆ Intraop. 4/105: hypotension/ AF/ hypox.  
predictors: pericardial effusion.
- ◆ Postop. 11/105 (7 life-threat.): resp. fail.,  
atelectasis, pneumonia  
predict: preop. s/s,  
trach compress. > 50%,

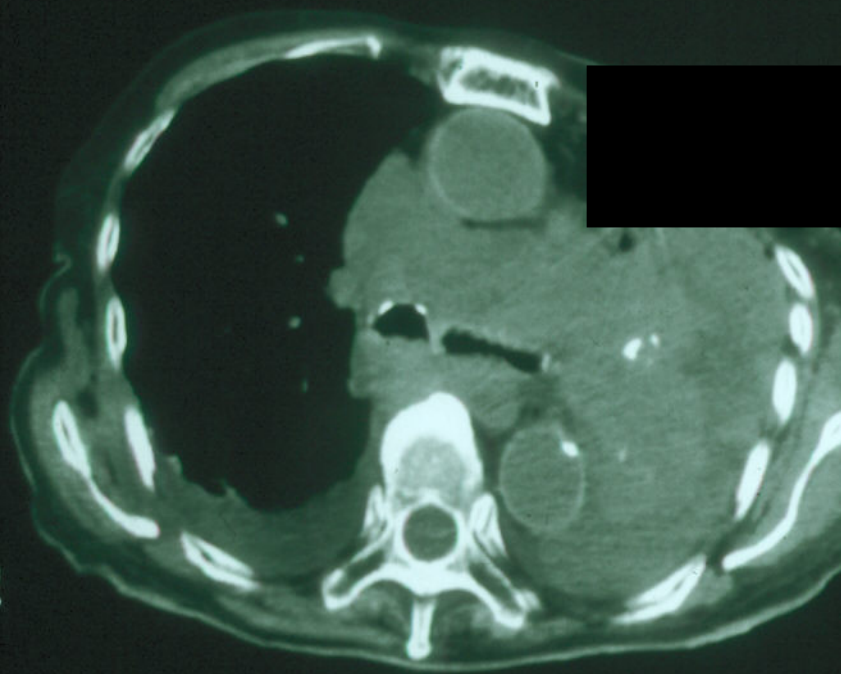
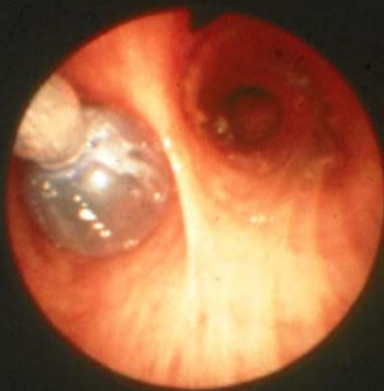
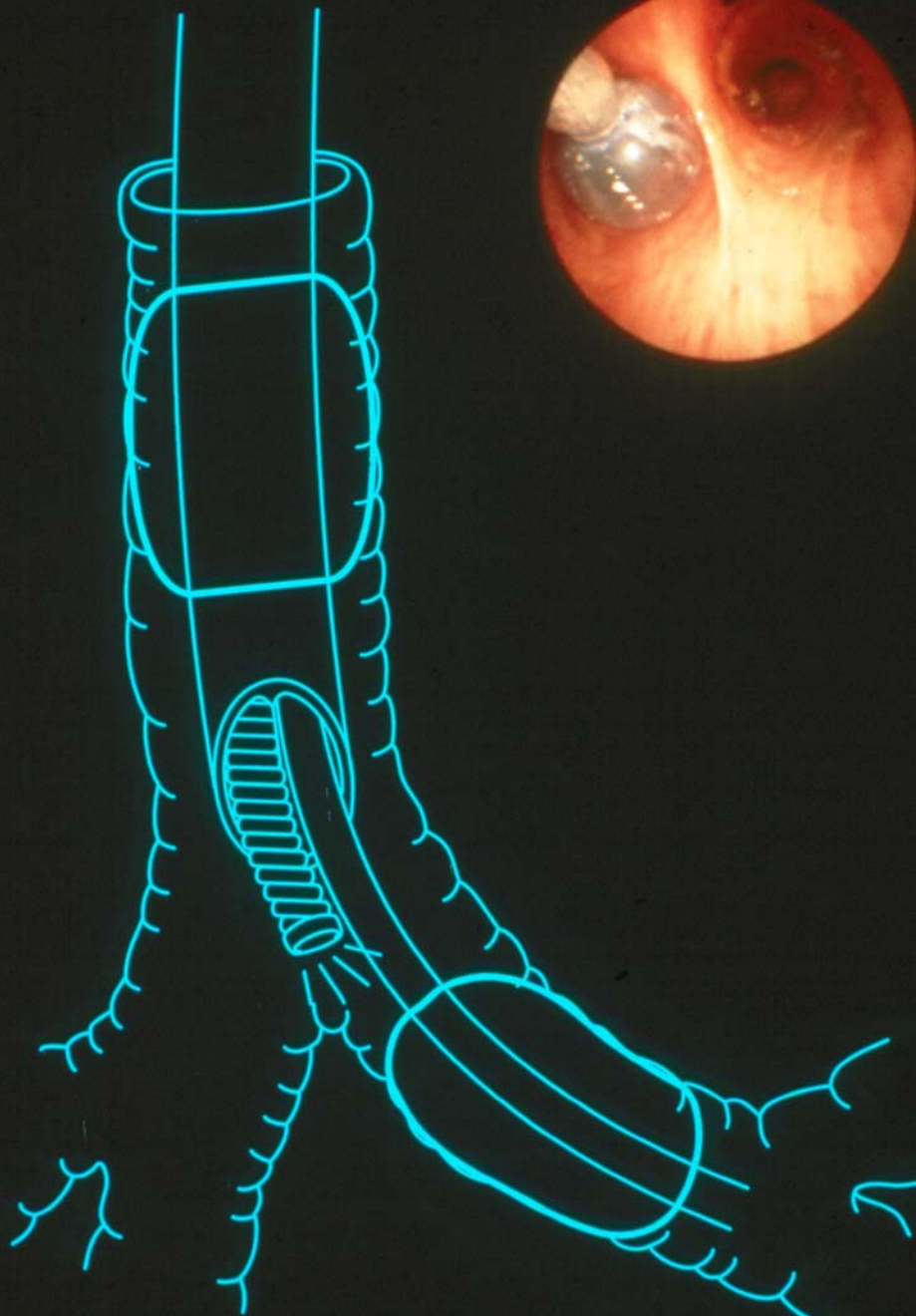


17 y.o. Male  
Germ cell tumor  
L thoracotomy









# Anterior Mediastinal Masses

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- ◆ **History:** dyspnea/cough, syncope
- ◆ **Lab.:** CT +/- Echo
- ◆ **Management:** NPIC  
safe/unsafe/uncertain
- ◆ **Myths:** CPB standby,  
Flow/vol. loops
- ◆ **Postop.**

