

Mediastinal Emergencies

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NORDICFORUM

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TRAUMA & EMERGENCY RADIOLOGY

Mediastinal Non-traumatic Emergencies

- Infection: Acute mediastinitis
- Bleeding: Mediastinal hematoma, AIH of the Esophagus
- Perforations: Tracheal, Esophageal, Boerhaave, Aorto/Atrial enteric fistula

Acute Mediastinitis

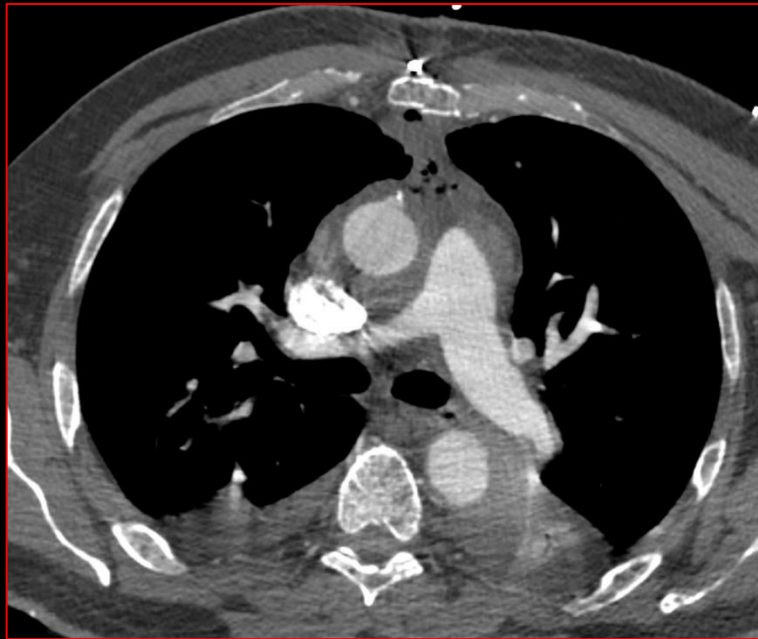
Spread of infection to the mediastinum

- Post surgical*
- Descending necrotizing mediastinitis
- + Other extension of infection (esophageal perforation, adjacent osteomyelitis, lung)

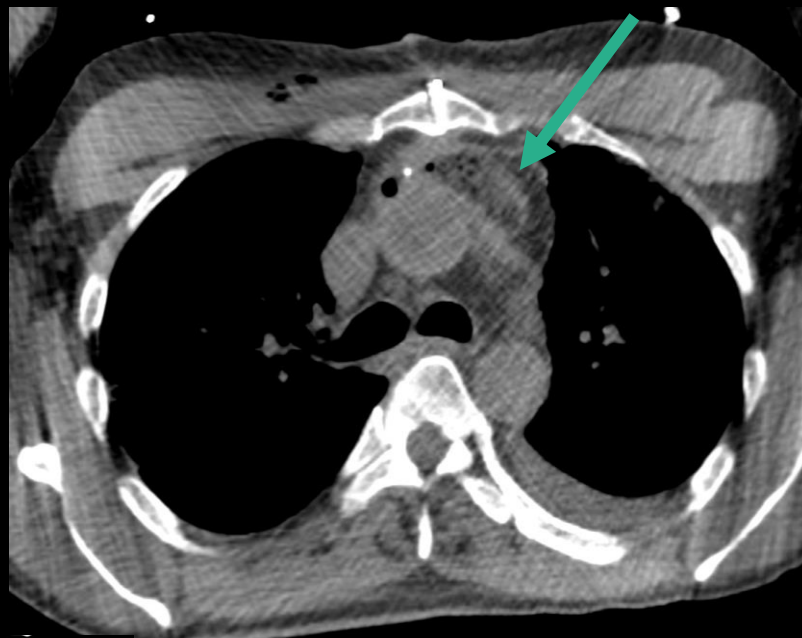
Post sternotomy mediastinitis, Deep sternal wound infection

- CABG + Surgeries, Transplant >> CABG or Valvular (Increased surgical times)
- Patient factors: Diabetes, obesity, smoking, renal failure, immunocompromised state
- Timeline (1st 30-days): Mediastinal gas bubbles and fluid collections on CT after POD 14th day has increased sensitivity and specificity

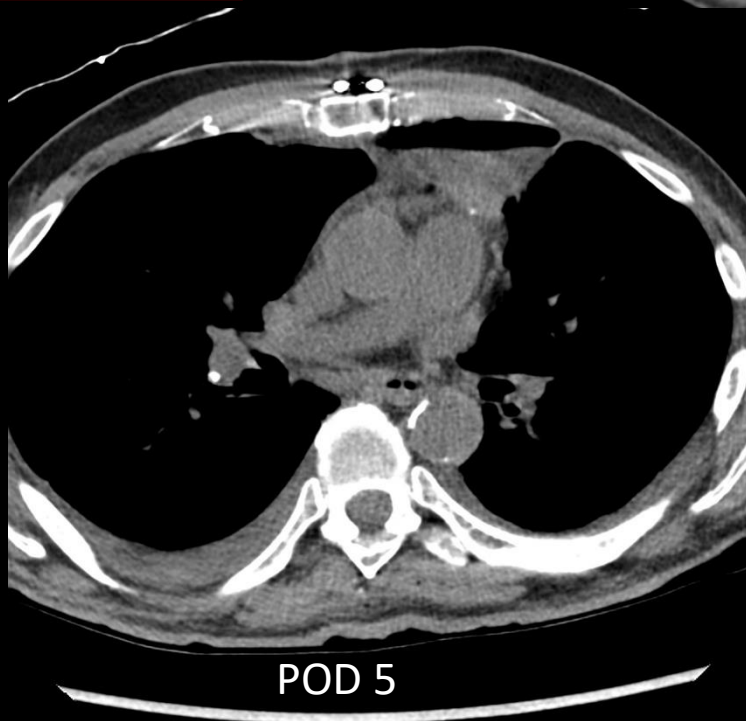




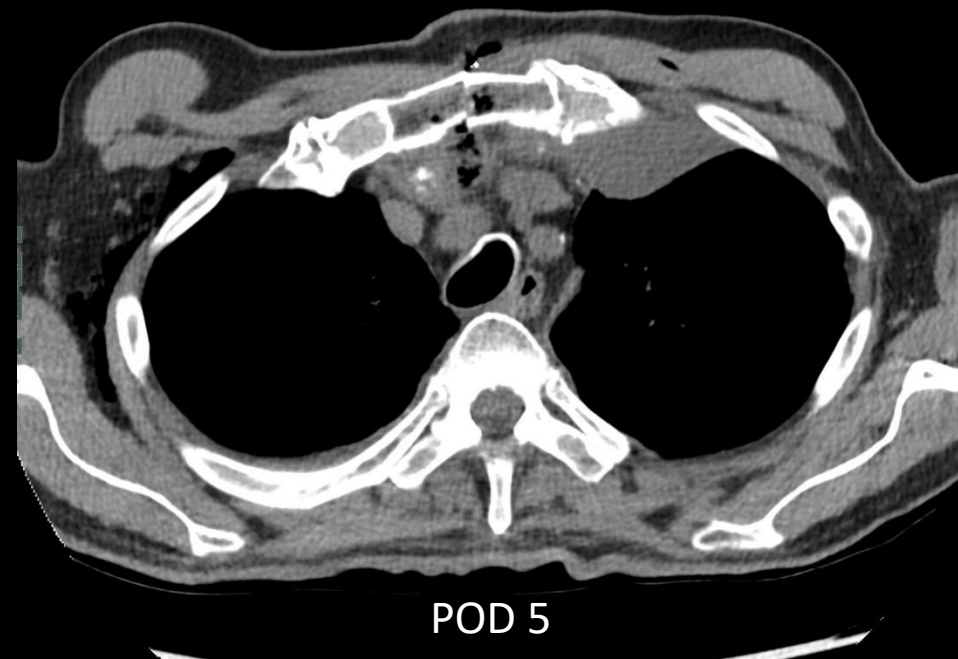
POD 21



POD 3



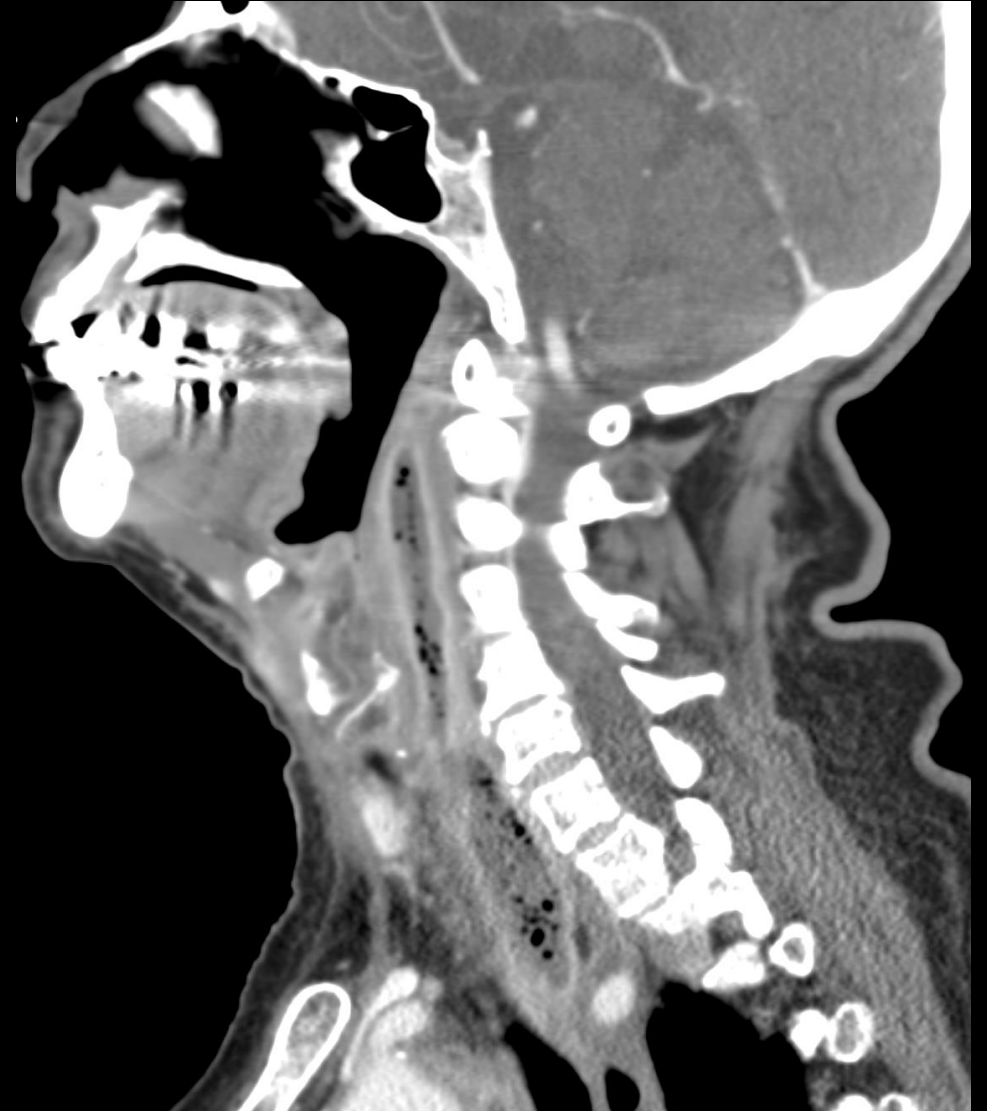
POD 5

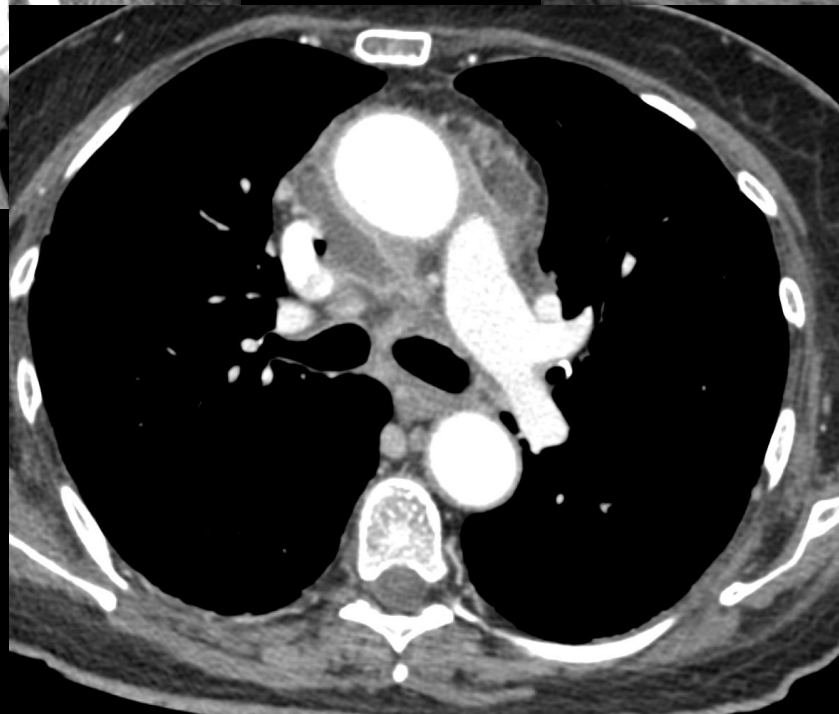


POD 5

Descending necrotizing mediastinitis

- Inferior extension of infection into the mediastinum resulting in mediastinitis
- ‘Danger Space’: Deep potential space of the head and neck located behind the true retropharyngeal space, between alar and prevertebral layers of the deep cervical fascia
- Smoking, DM, Poor dentition



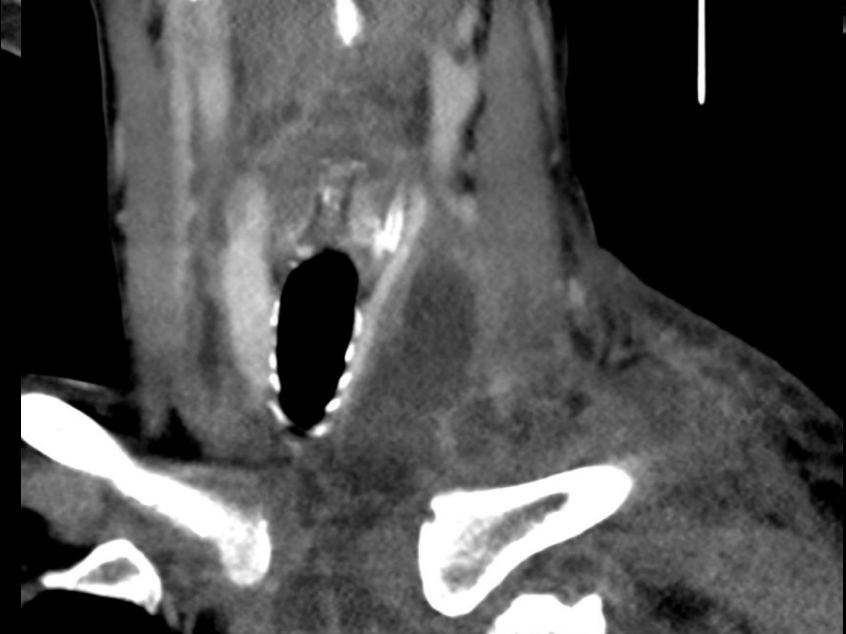


Type IIB

(Type I: Above carina
Type IIA: Below carina +
AM
Type IIB: IIA + PM)

Mediastinitis (other)

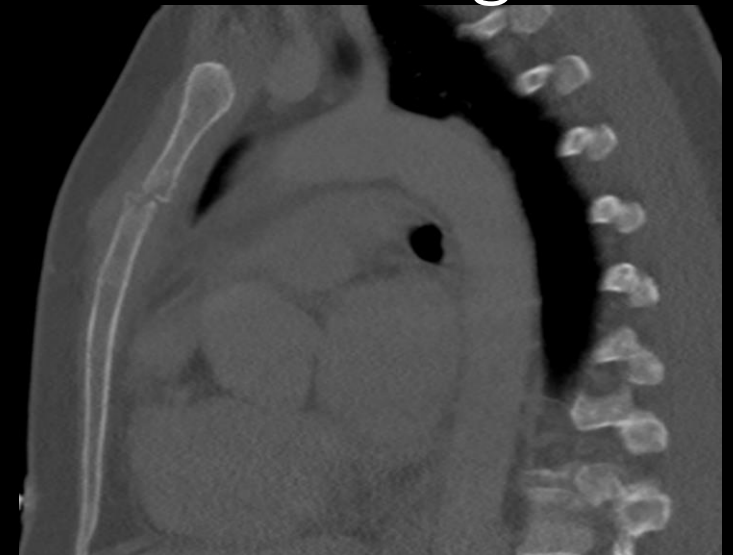
Extension from adjacent sites of infection or seeding



IVDU to Left neck 2 weeks prior



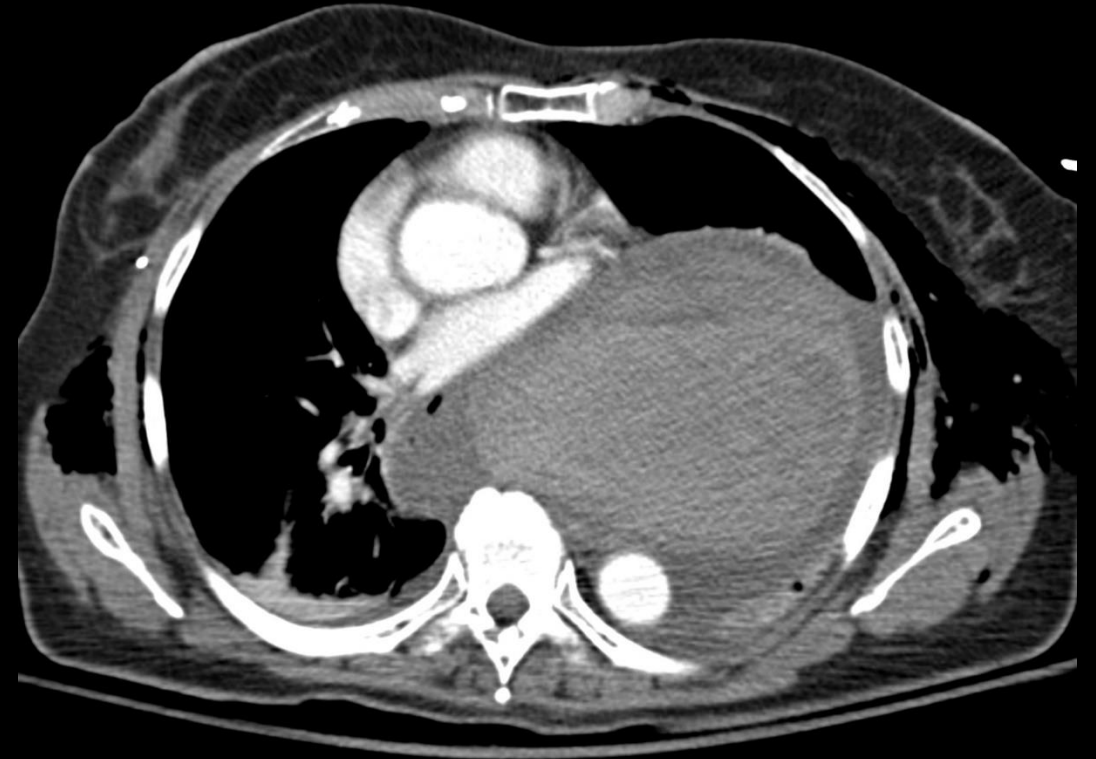
Bacteremia



Sternomanubrial OM

Mediastinal hematoma

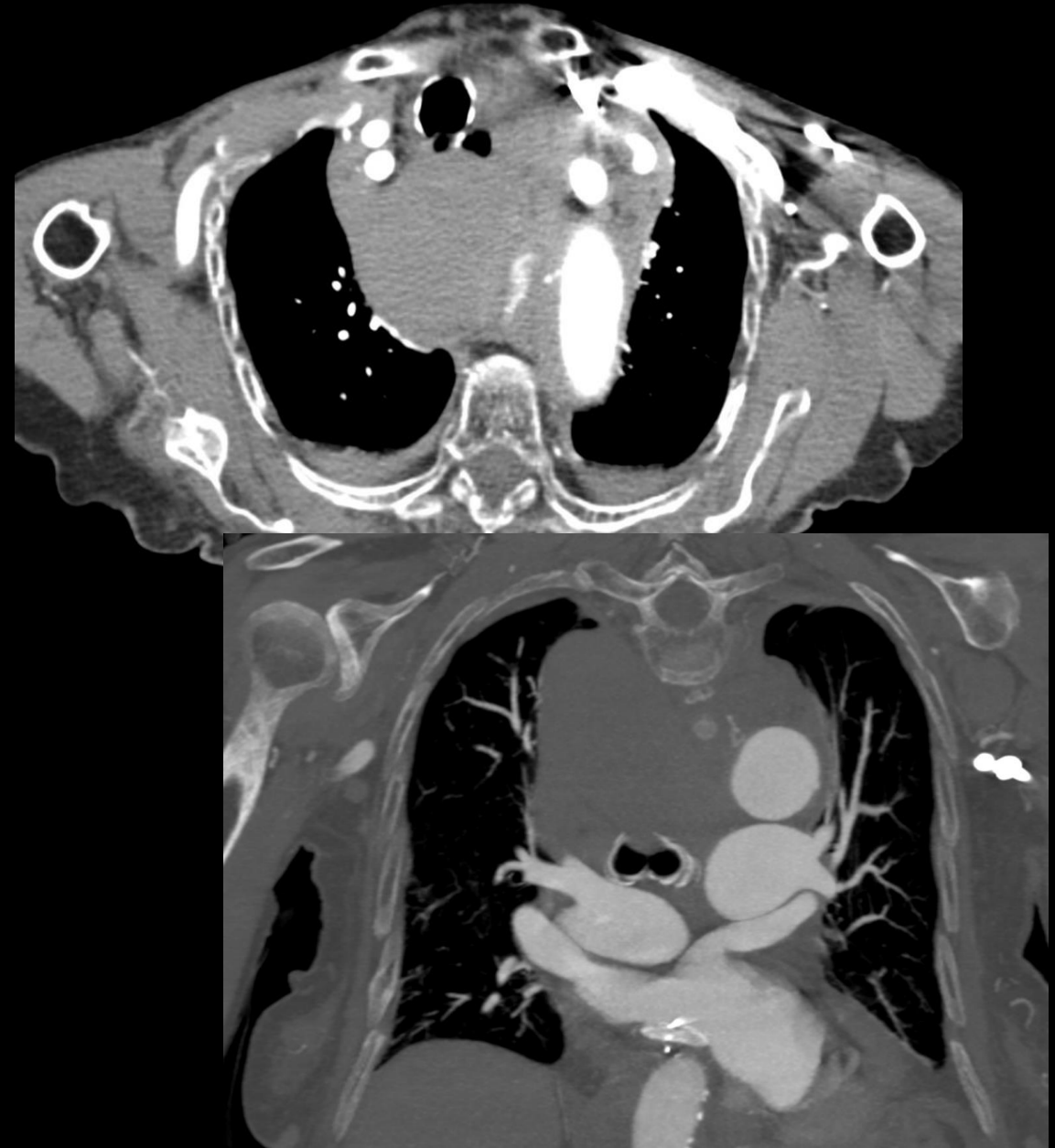
- Non-traumatic mediastinal hematomas
- Spontaneous: Rare, in patients taking anticoagulants
- Other 'non-spontaneous' causes:
 - Aortic
 - Iatrogenic
 - Malposition lines/tubes



4 days post hiatal hernia repair



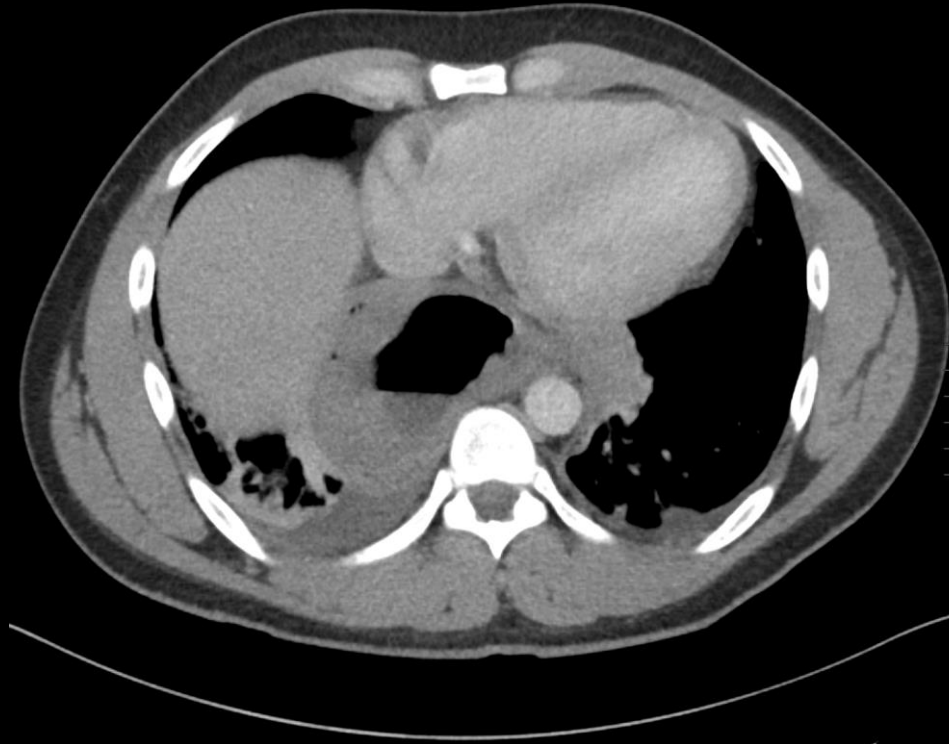
4 weeks post CABG



Unprovoked mediastinal hematoma (active)

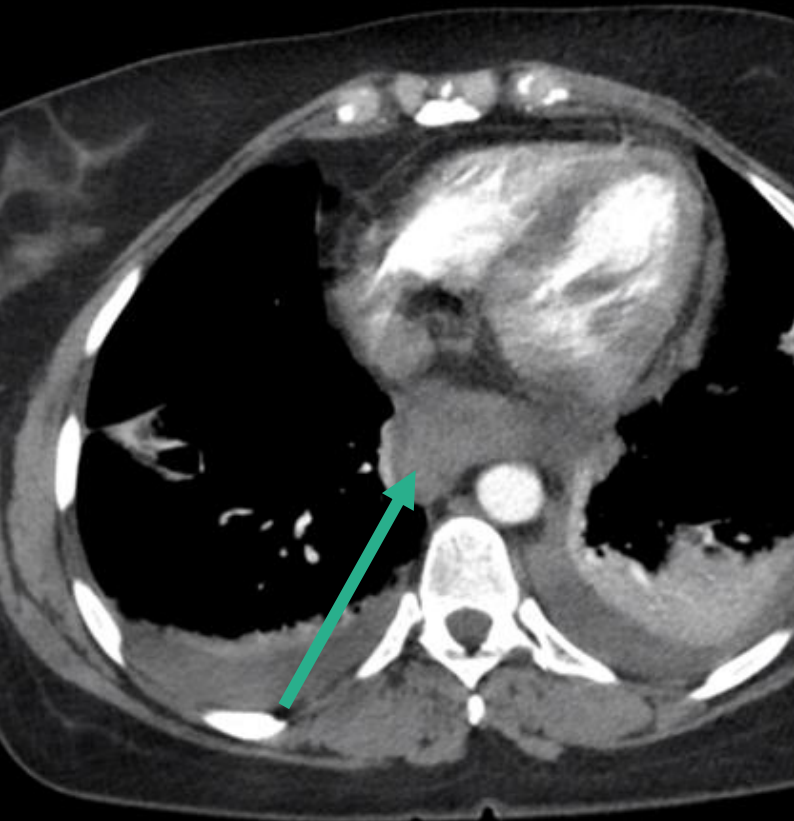
Intramural Hematoma of the Esophagus

- Iatrogenic or Spontaneous
- “Partial tear” or intramural dissection
- Favorable
- (4 weeks)



Achalasia with IHE





IHE

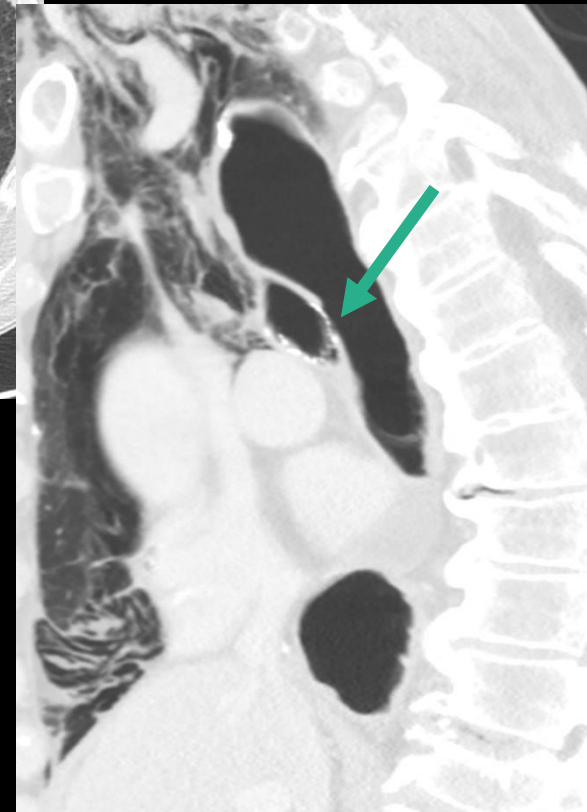
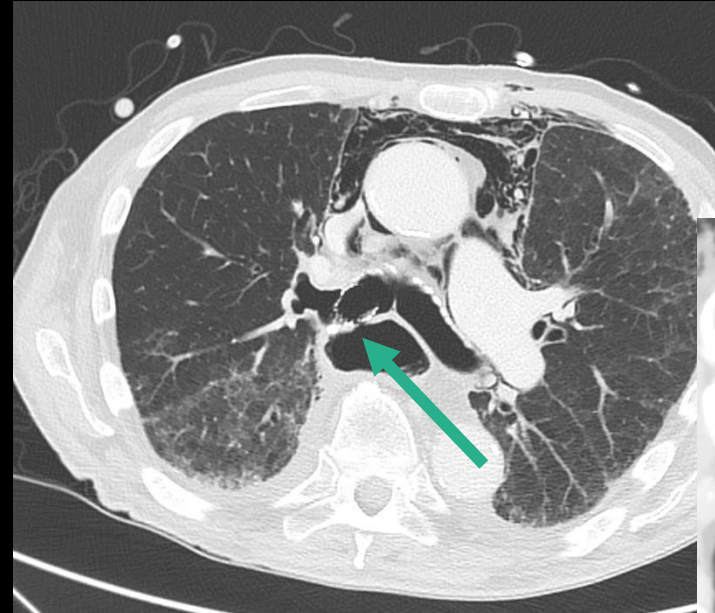


Duodenal Hematoma



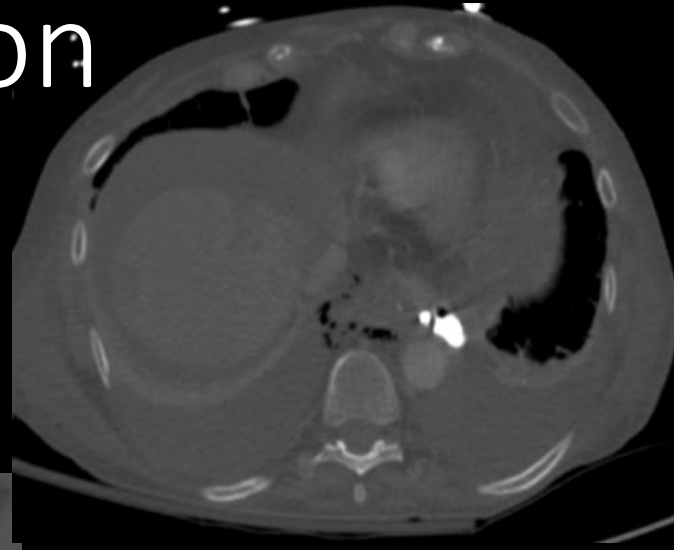
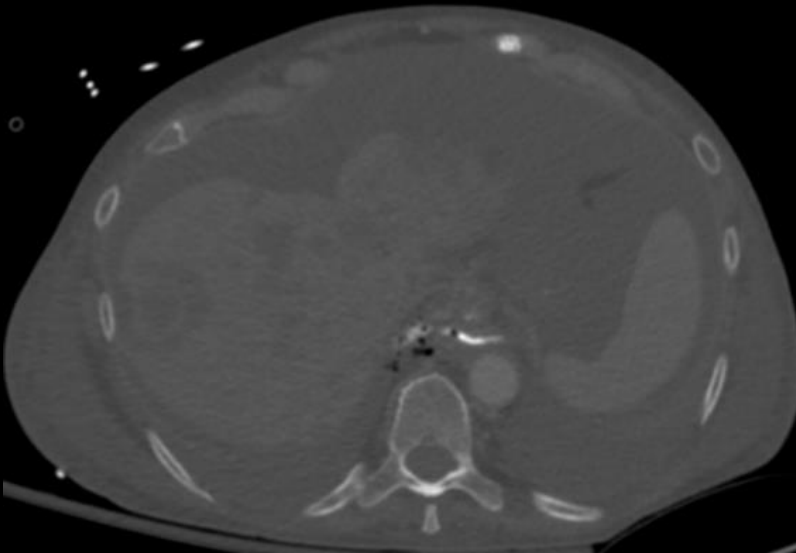
Perforation: Esophago-respiratory Fistula (Acquired)

- Malignancy: intrathoracic malignancy, most commonly of the esophagus
- Radiotherapy
- Iatrogenic, Post-tracheostomy
- Chronic inflammation or infections (Tuberculosis, Histoplasmosis)
- Corrosive substances (acid) ingestion



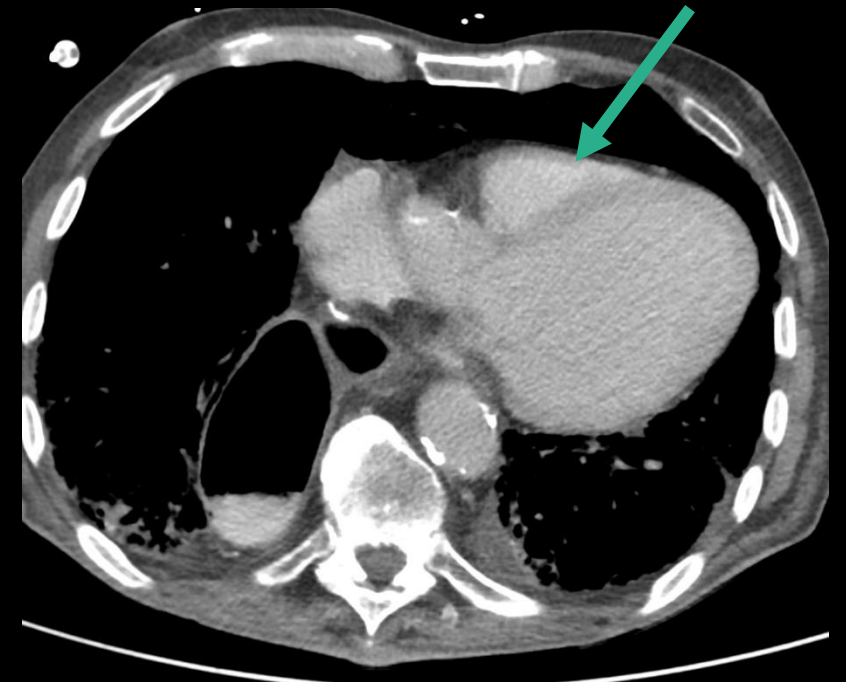
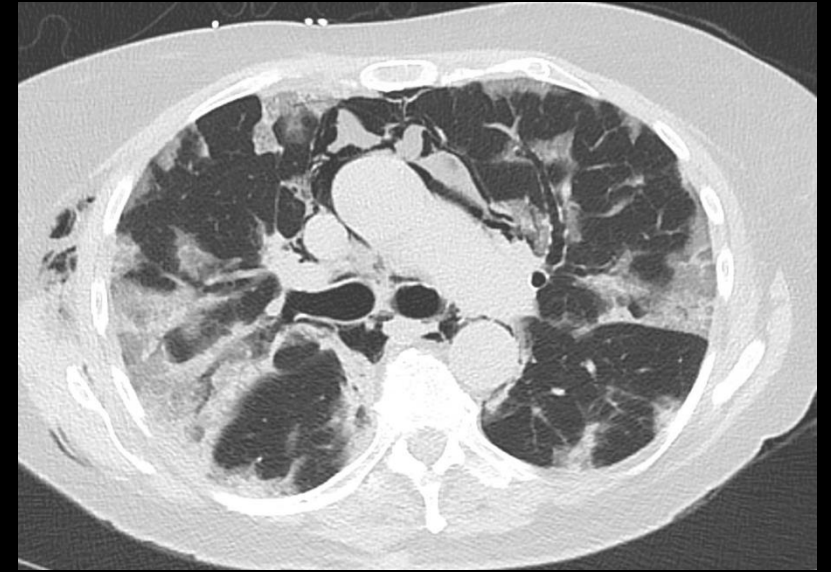
Perforation: Esophageal perforation

- Non traumatic causes:
 - Iatrogenic
 - Malignancy
 - Radiation treatment
 - Boerhaave's syndrome
 - Acid ingestion



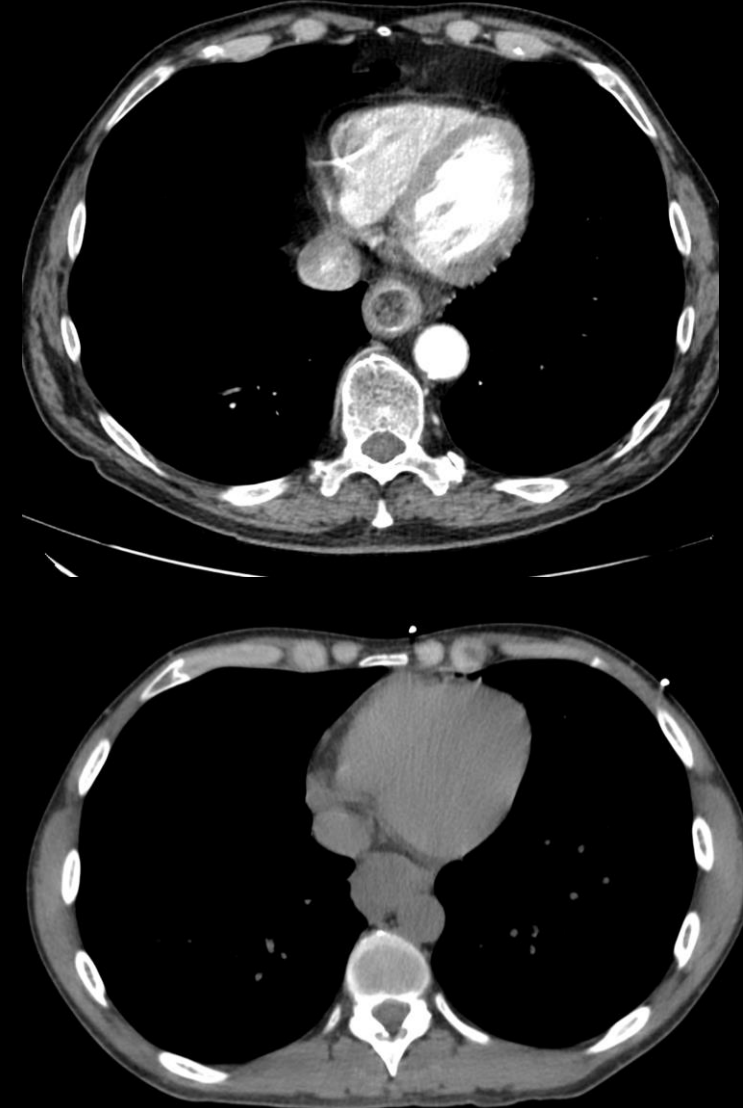
Perforation ->Pneumomediastinum

- Esophageal perforation (Boerhaave's syndrome, procedural, malignancy)
- Iatrogenic
- Hamman-Rich syndrome
- Valsalva
- Post surgical
- Asthma
- Barotrauma/Ventilation
- CTLD/ chronic lung disease



Esophageal food bolus obstruction

- Age
- Additional risk factors:
 - Schatzki rings
 - Eosinophilic esophagitis
 - Webs
 - Peptic strictures

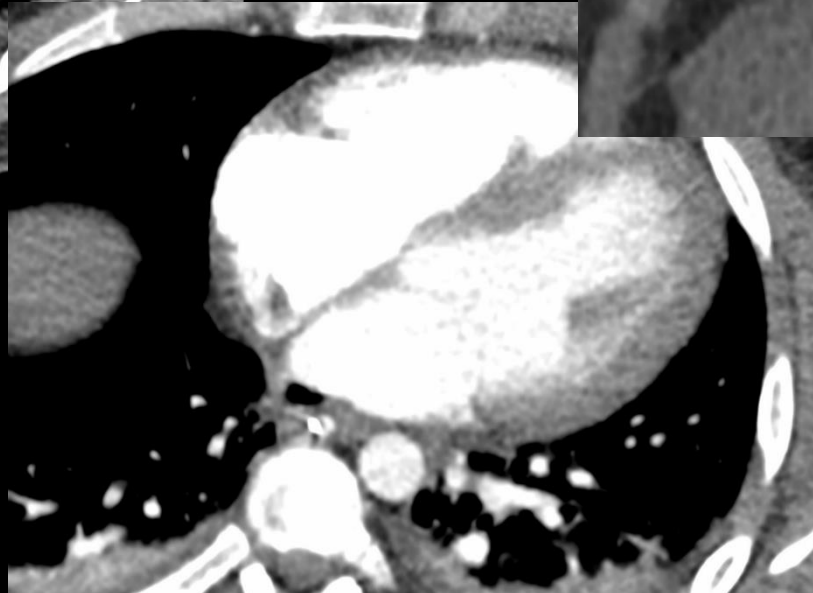


Aortoesophageal fistula – post TEVAR



- Rare, <1.9% of TEVAR
- Hematemesis + post TEVAR infection
- Bleeding control + lumen control

Atrio-esophageal fistula



- >70% fever + neurological symptoms
- Ablative damage -> Inflammation -> necrosis
- <1% of post ablation cases

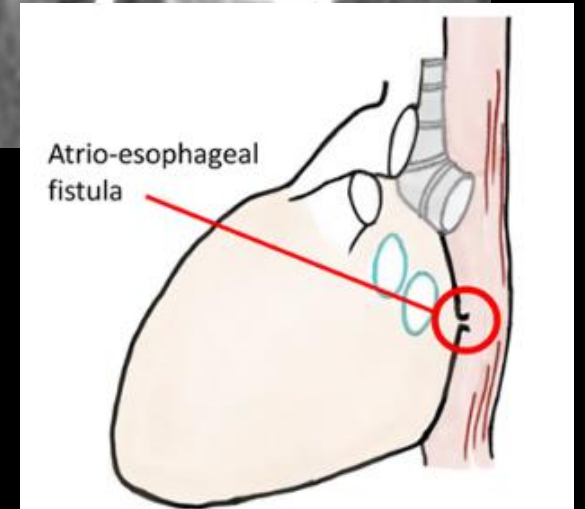


Illustration: American Heart Association

Take – home points

- Post surgical mediastinitis, time and symptoms
- Head and neck infections, how low does it go?
- Esophageal hematoma, self – limited
- Steak house syndrome, any underlying pathology?
- Aorto-esophageal fistula, beware the sentinel bleed -> massive bleed
- Atrio-esophageal fistula, stroke like symptoms + fever + RF Afib treatment history