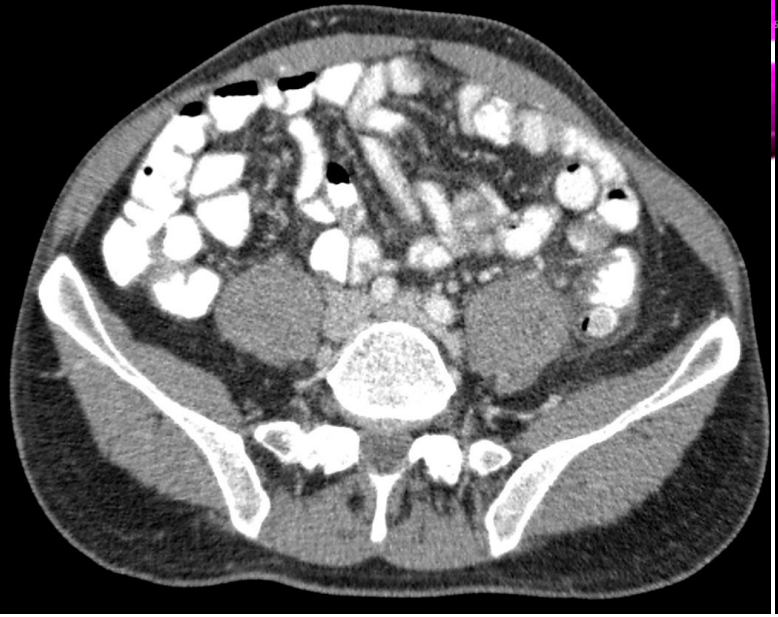
ACUTE DİVERTİCULİTİS

- Ultrasound/**enhanced CT**
- Findings:
  - Diverticula
  - Uniform wall thickening
  - Pericolonic inflamation
- Complications
  - Perforation
  - Abcess formation

Best visualized with ct

ACUTE DİVERTİCULİTİS



ACUTE DİVERTİCULİTİS

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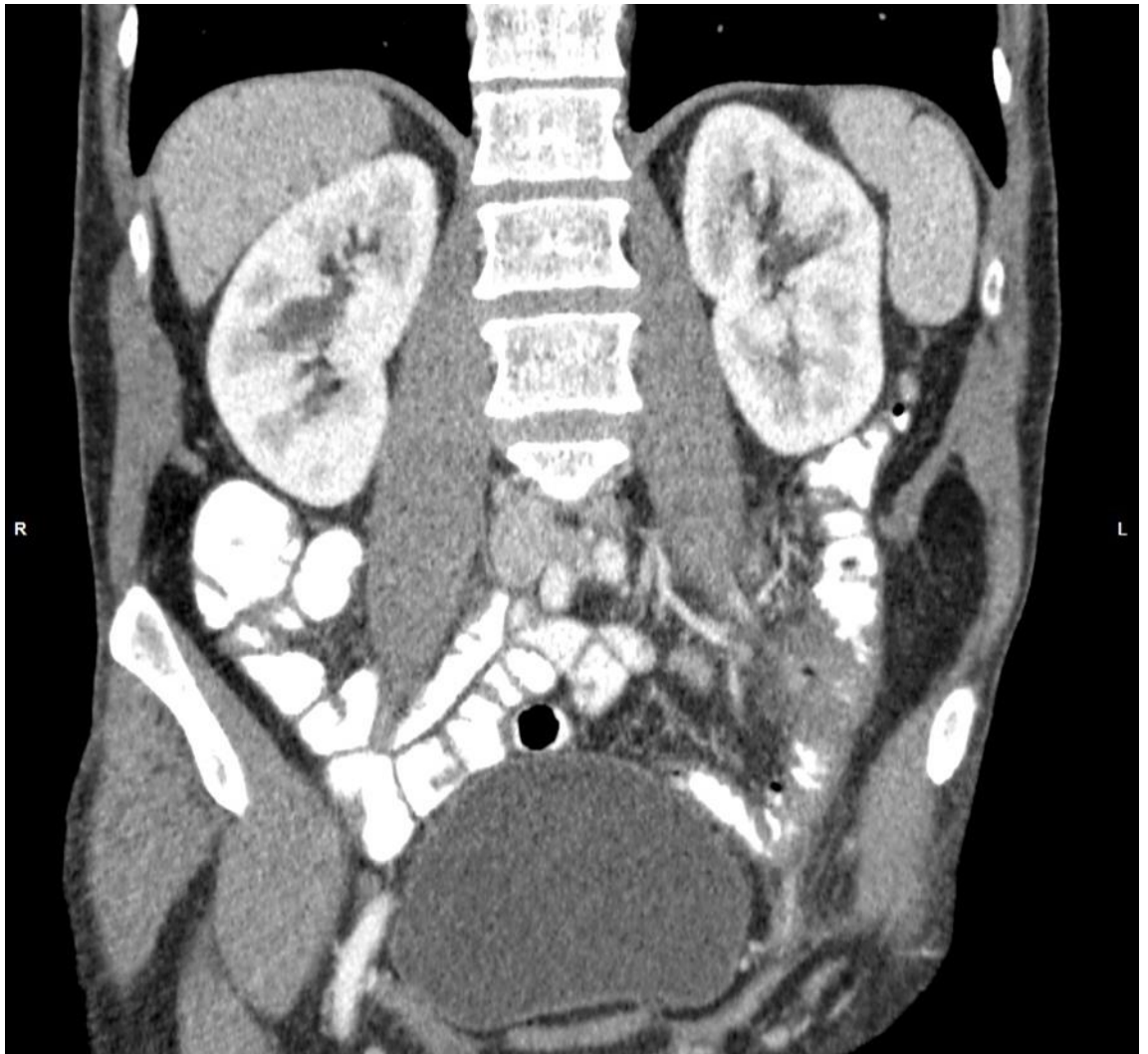


RADIOLOGICAL MANAGEMENT OF PATIENTS WITH MULTIPLE TRAUMA

1. The conventional radiology period (cranium, abdominal, chest, lateral servical thoracal lumbosacral graphies)

2. The focused abdominal sonography for trauma (FAST) ultrasound revolution.
   - in detecting free intraperitoneal fluid (which indicates hemoperitoneum), a marker of visceral injury
   - FAST was defined as a simplified and rapid exploration (3 to 5 min) to identify free fluid,
   - on the **p**ericardial, **p**erihepatic, **p**elvic and **p**erisplenic and extending to the **p**leura

3. MDCT as first line of exploration in stable patients

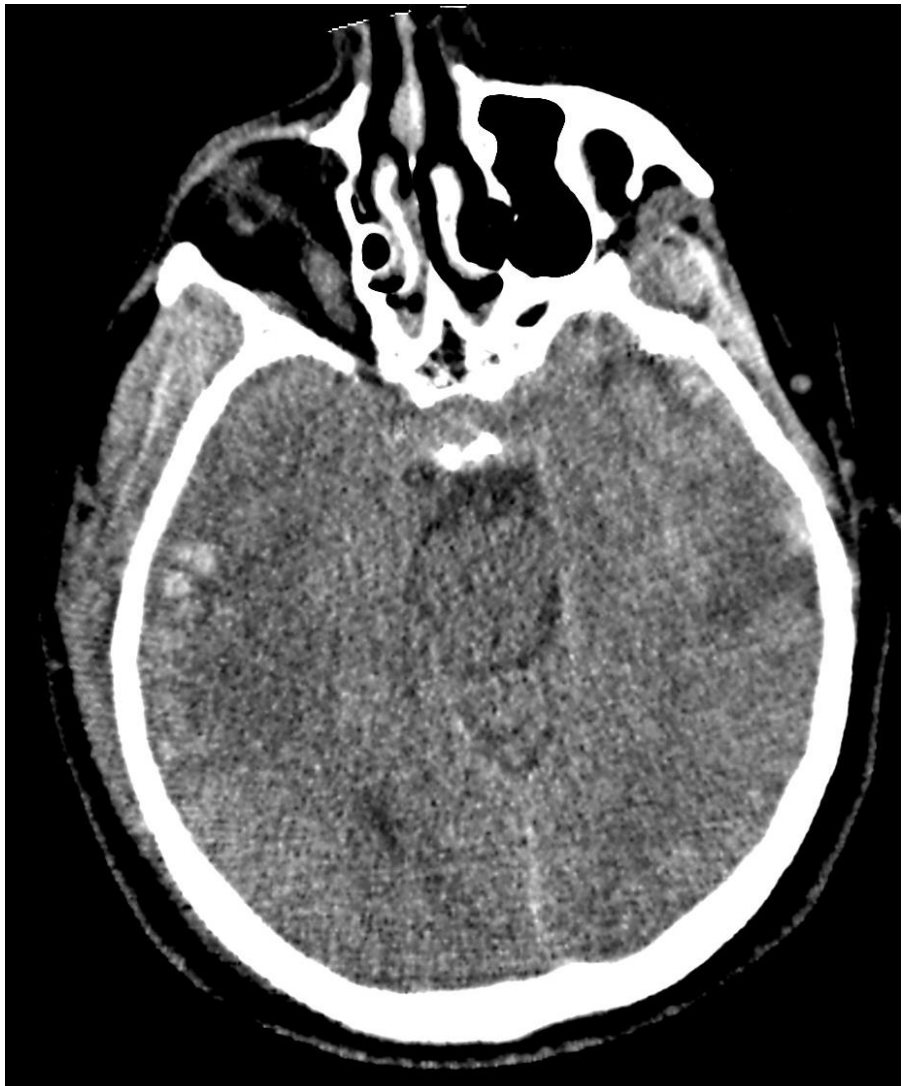
RADIOLOGICAL MANAGEMENT OF PATIENTS WITH MULTIPLE TRAUMA

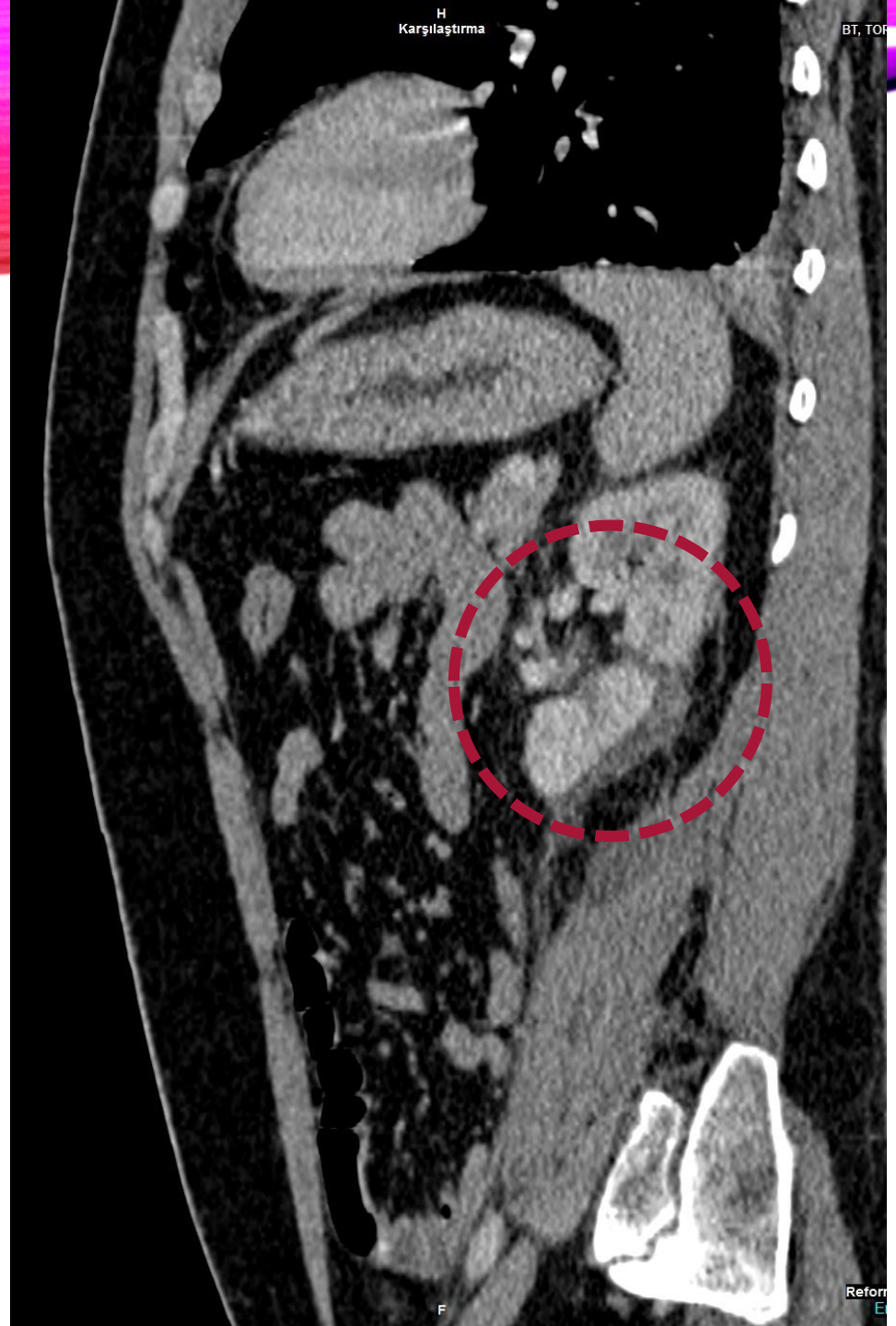
- MDCT
  - Initial acquisition includes non-contrast CT through head and face (to include the entire mandible), (1mm axial thickness)
  - Then contrast enhanced CT from the level of the circle of Willis through the bottom of the pelvis.

RADIOLOGICAL MANAGEMENT OF PATIENTS WITH MULTIPLE TRAUMA

- **Do not transport** an unstable patient to Radiology

SAH-PARENCYHMAL HEMATOMA





LACERATION

IMAGING IN NONTRAUMATİC THORACIC EMERGENCIES

(1) Chest pain
- Pneumothorax
- Pneumohaemothorax
- Spontaneous pneumomediastinum
- Oesophagitis

(2) Infection (fever, signs of sepsis)
- Pneumonia
- Lung abscess
- Septic pulmonary infarcts
- Aspiration pneumonitis

(3) Dyspnoea
- Tumour
- Asthma and its complications
- Acute interstitial pneumonitis
- Acute exacerbation of interstitial lung disease
- Inhalational injury
- Acute exacerbation of chronic obstructive pulmonary disease

(4) Hypovolaemic shock
- Bleeding vascular malformation

(5) Haemoptysis
- Diffuse alveolar haemorrhage
- Bronchiectasis
- Tuberculosis
- Lung cancer
- Dieulafoy's disease of the bronchus

(6) Haematemesis
- Boerhaave syndrome
- Oesophagitis

(7) Foreign body
- Tracheoesophageal foreign bodies

Common clinical presentations

Acute chest pain !!!!

IMAGING IN NONTRAUMATIC THORACIC EMERGENCIES

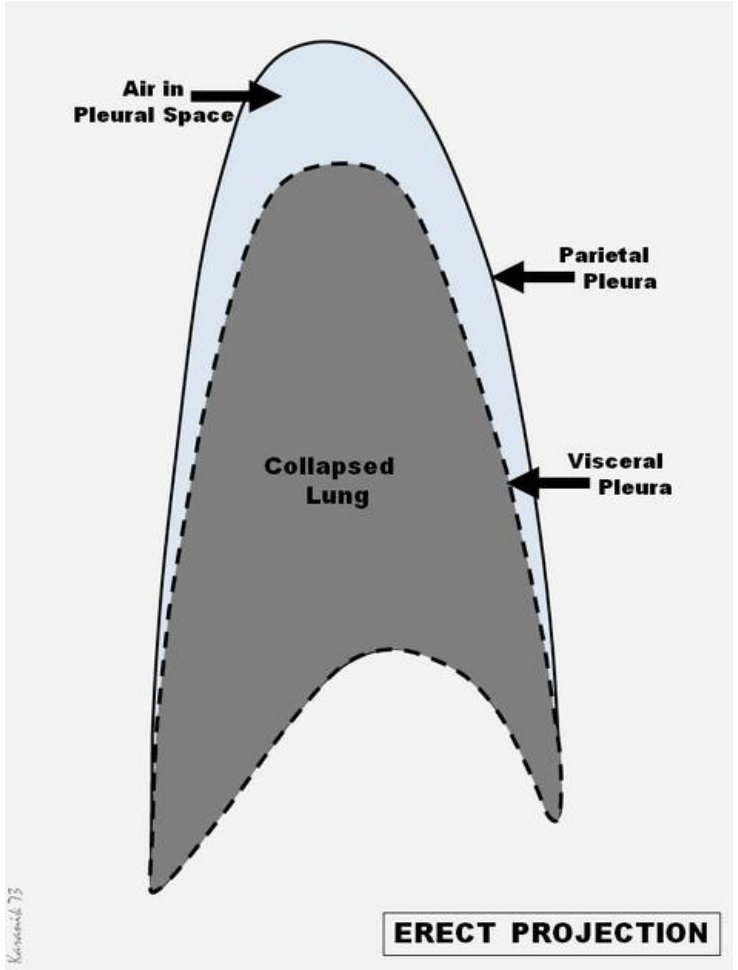
- **Acute chest pain:**
  - ❑ Pneumothorax
  - ❑ Acute pulmonary embolism
  - ❑ Acute aortic dissection

PNEUMOTHORAX

- air collection between the parietal and visceral pleurae
- air accumulation can apply pressure on the lung and make it collapse.
- Classification
  - ❑Primary spontaneous pneumothorax (Marfan syndrome, Ehlers-Danlos syndrome, alpha-1-antitrypsin deficiency)
  - ❑Secondary spontaneous pneumothorax (bullae, blebs, emphysema, asthma)

❑Classification

- ❖Simple pneumothorax
- ❖Tension pneumothorax (shift the mediastinal structures)

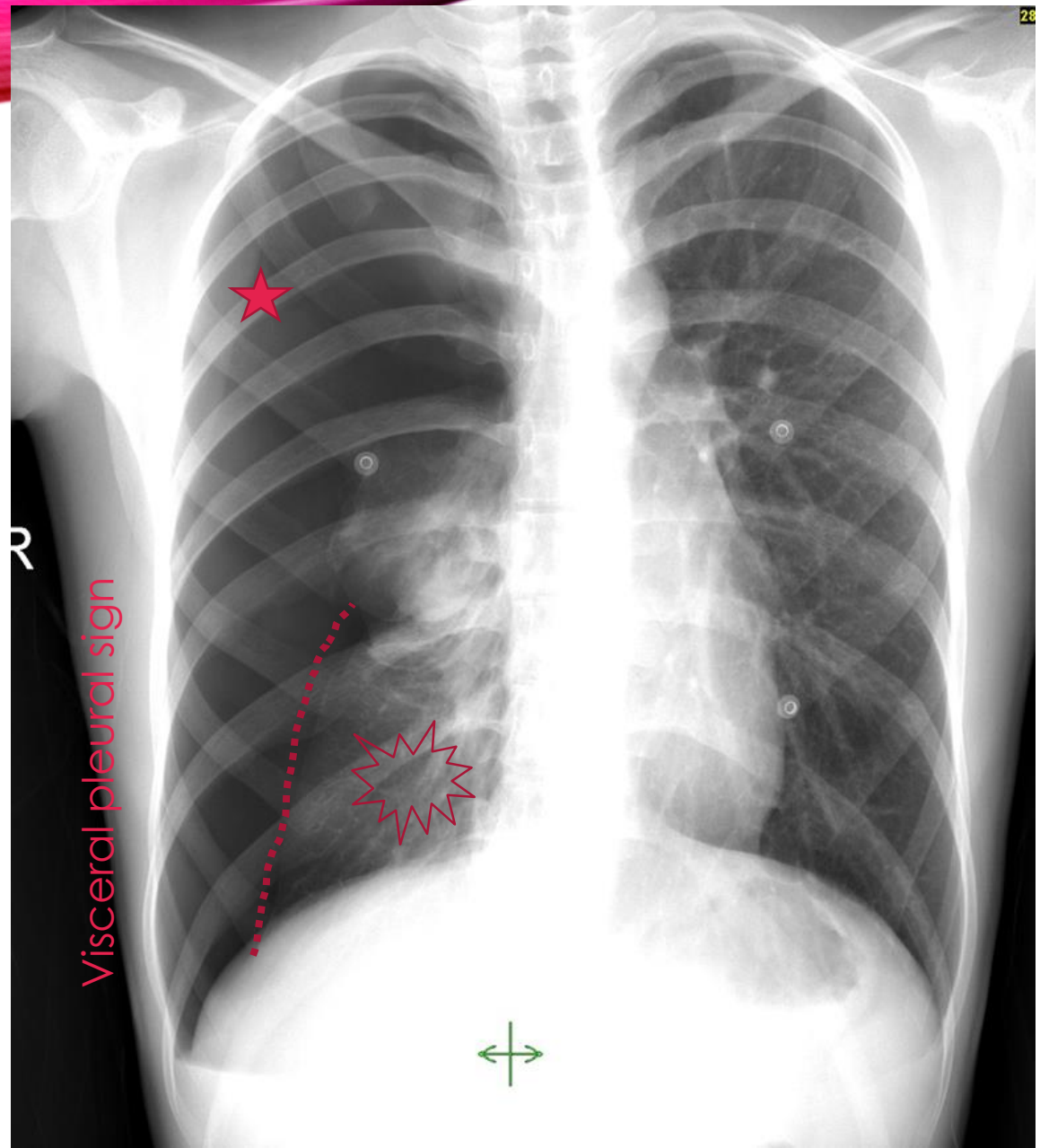


PNEUMOTHORAX

Chest X-RAY

- visible visceral pleural edge is seen as a very thin, sharp white line
  - ✓ **Visceral pleural white line**
- no lung markings are seen peripheral to this line
- peripheral space is radiolucent compared to the adjacent lung
- collapse in the affected side.
- small pleural effusion might be seen

PNEUMOTHORAX



visceral pleural white line

no lung markings are seen peripheral to this line

peripheral space is radiolucent compared to the lung collapse in the affected side.

small pleural effusion might be seen

TENSİON PNEUMOTHORAX

- occurs due to the progressive accumulation of intrapleural gas in thoracic cavity caused by a valve effect during inspiration/expiration.
- life-threatening
  - ipsilateral increased intercostal spaces
  - contralateral shift of the mediastinum
  - depression of the hemidiaphragm

ACUTE PULMONARY EMBOLİSM

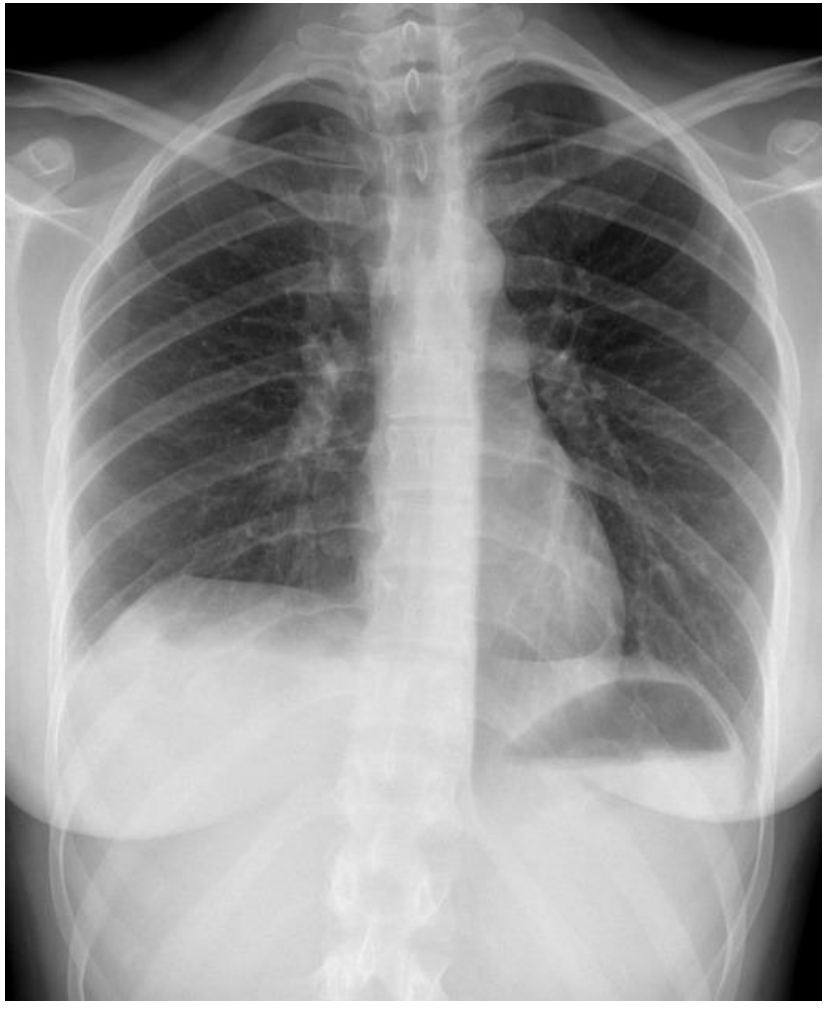
- embolic occlusion of the pulmonary arterial system
- majority of cases result from thrombotic occlusion
- Clinical sign:
  - **pleuritic chest pain**
  - tachycardia
  - dyspnea
  - hemoptysis

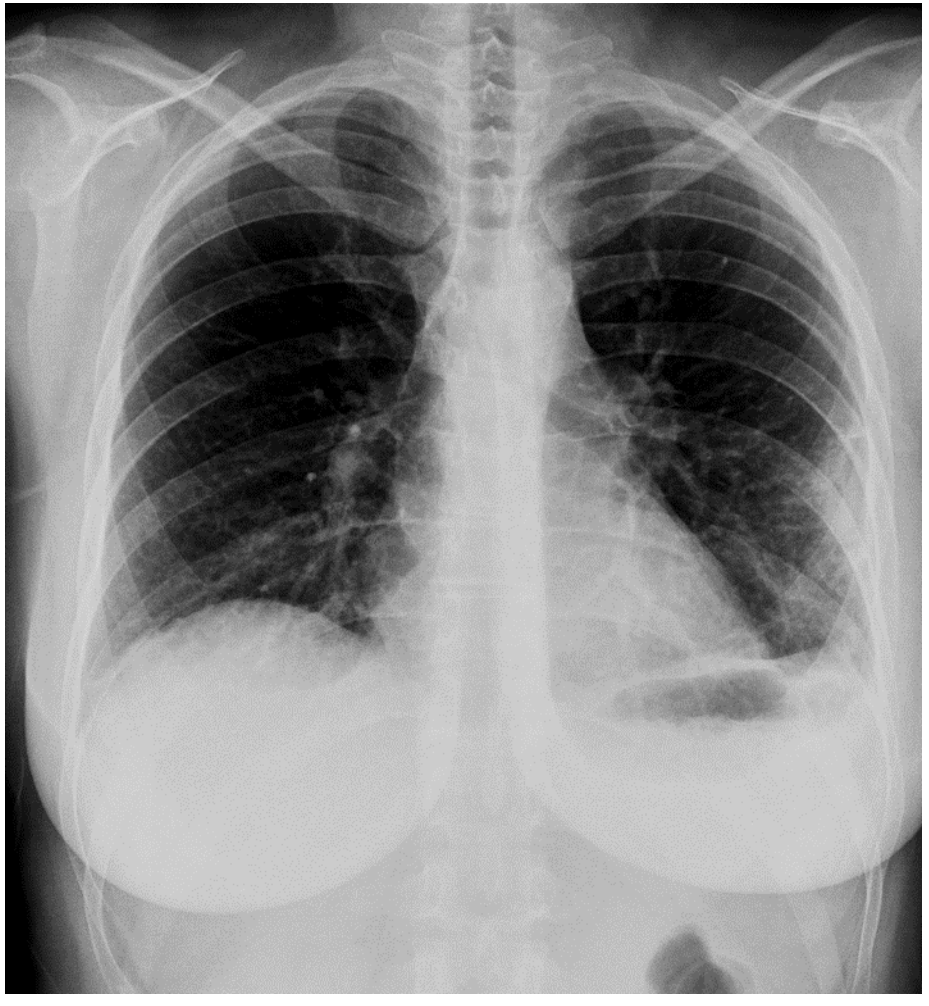
- Diagnostic imaging modality: **CT angiography**
- **Chest X-ray: To rule out pneumothrorax, COPD, pericardial effusion….**

ACUTE PULMONARY EMBOLİSM

- Chest X-ray findings:
  - **Hampton hump**: peripheral wedge of airspace opacity and implies lung infarction (20%)
  - **Westermark sign**: regional oligemia and highest positive predictive value (10%)
  - **pleural effusion** (35%) - pleural effusions in pulmonary embolism
  - Atelectasis
  - Enlargement of pulmonary artery

ACUTE PULMONARY EMBOLİSM





ACUTE PULMONARY EMBOLİSM

- **CT findings:**
- filling defects within the pulmonary arteries; the artery may be enlarged compared with adjacent patent vessels
- A partial filling defect surrounded by contrast material
- Peripheral wedge-shaped areas of hyperattenuation (infarcts)
- Linear bands, atelectasis
- Enlargement of right ventricule and main pulmonary artery → right sided heart failure
- Pleural effusion


Karşılaştırma
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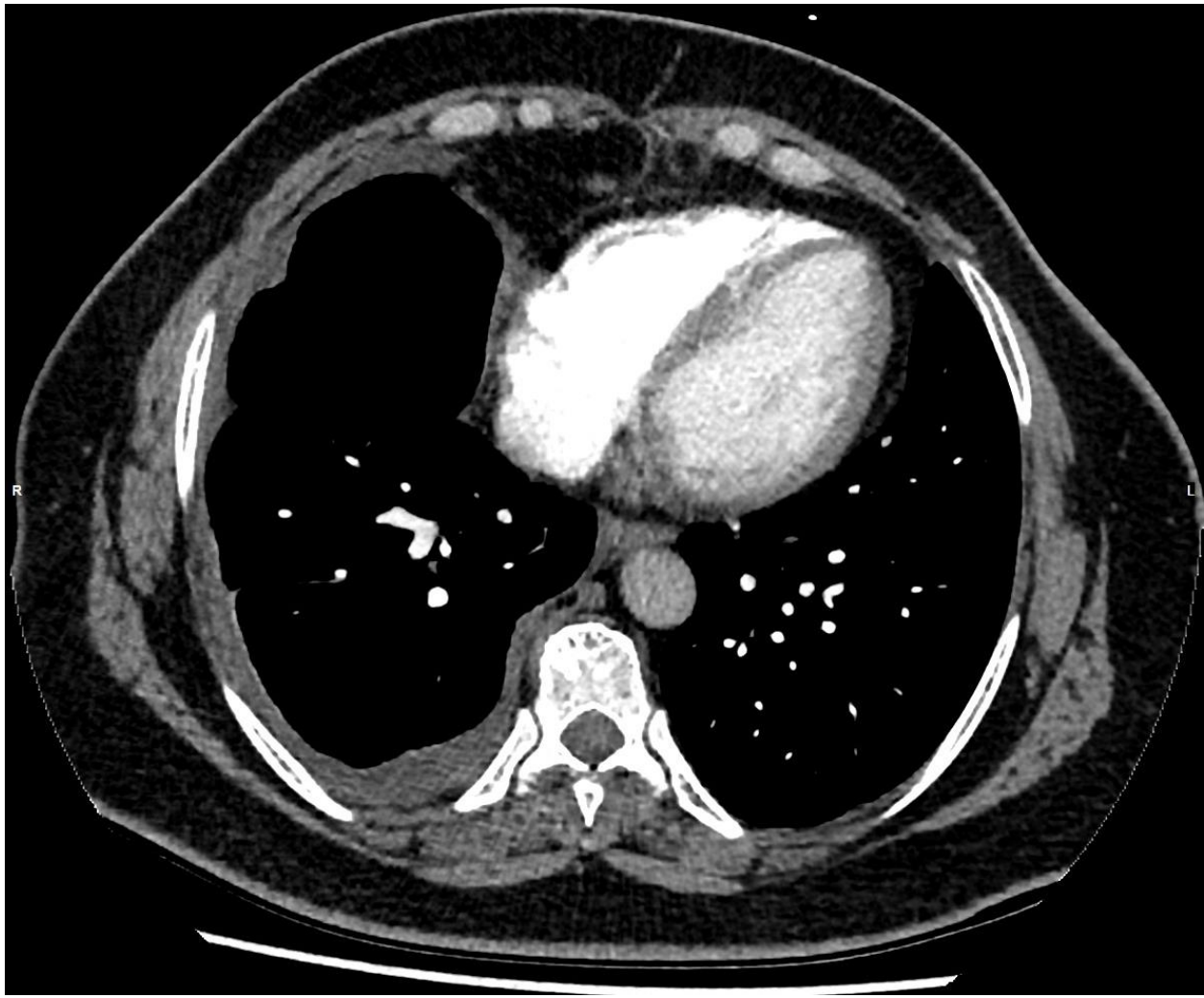
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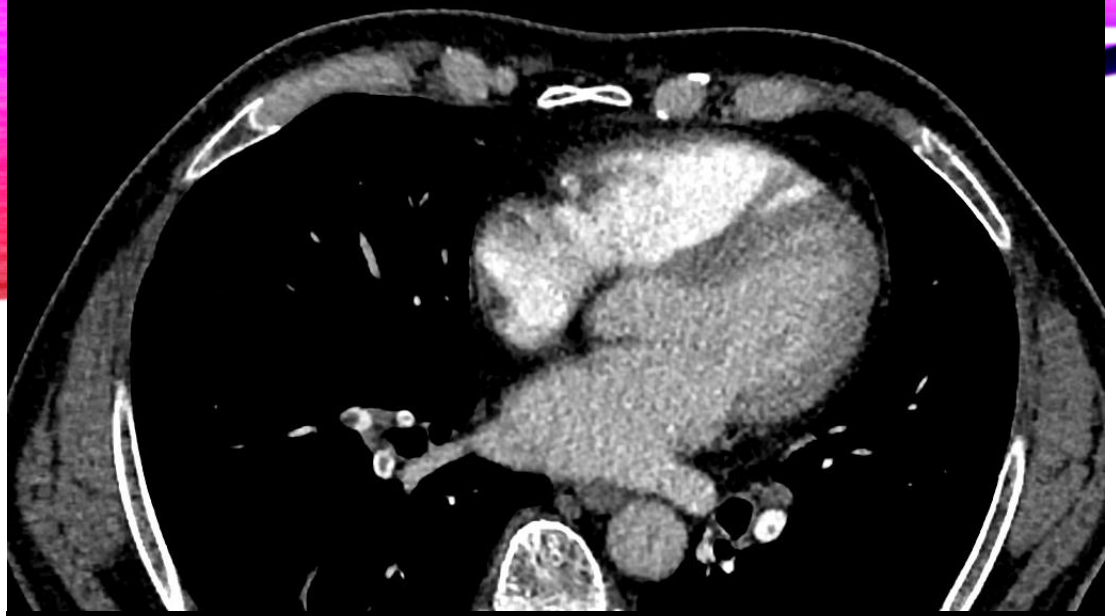

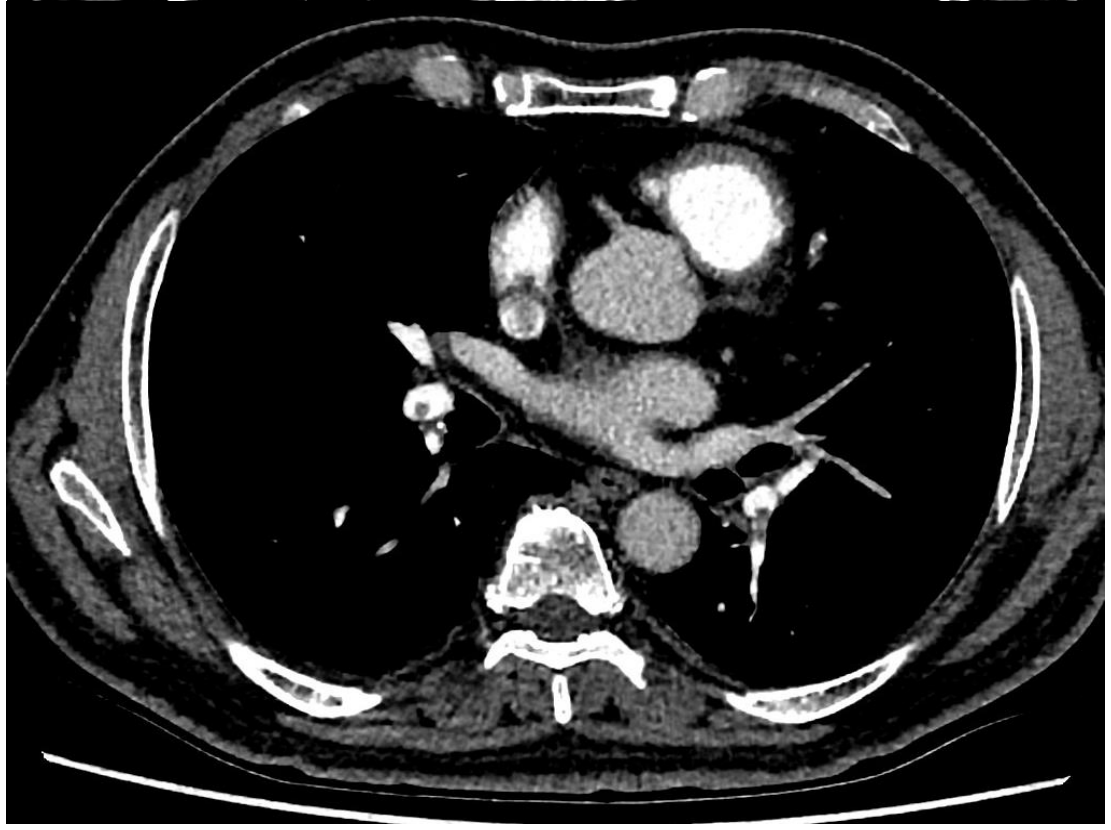

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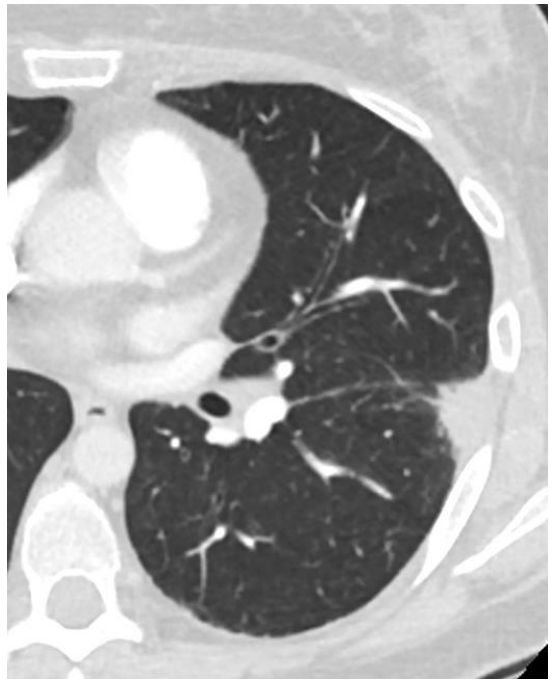

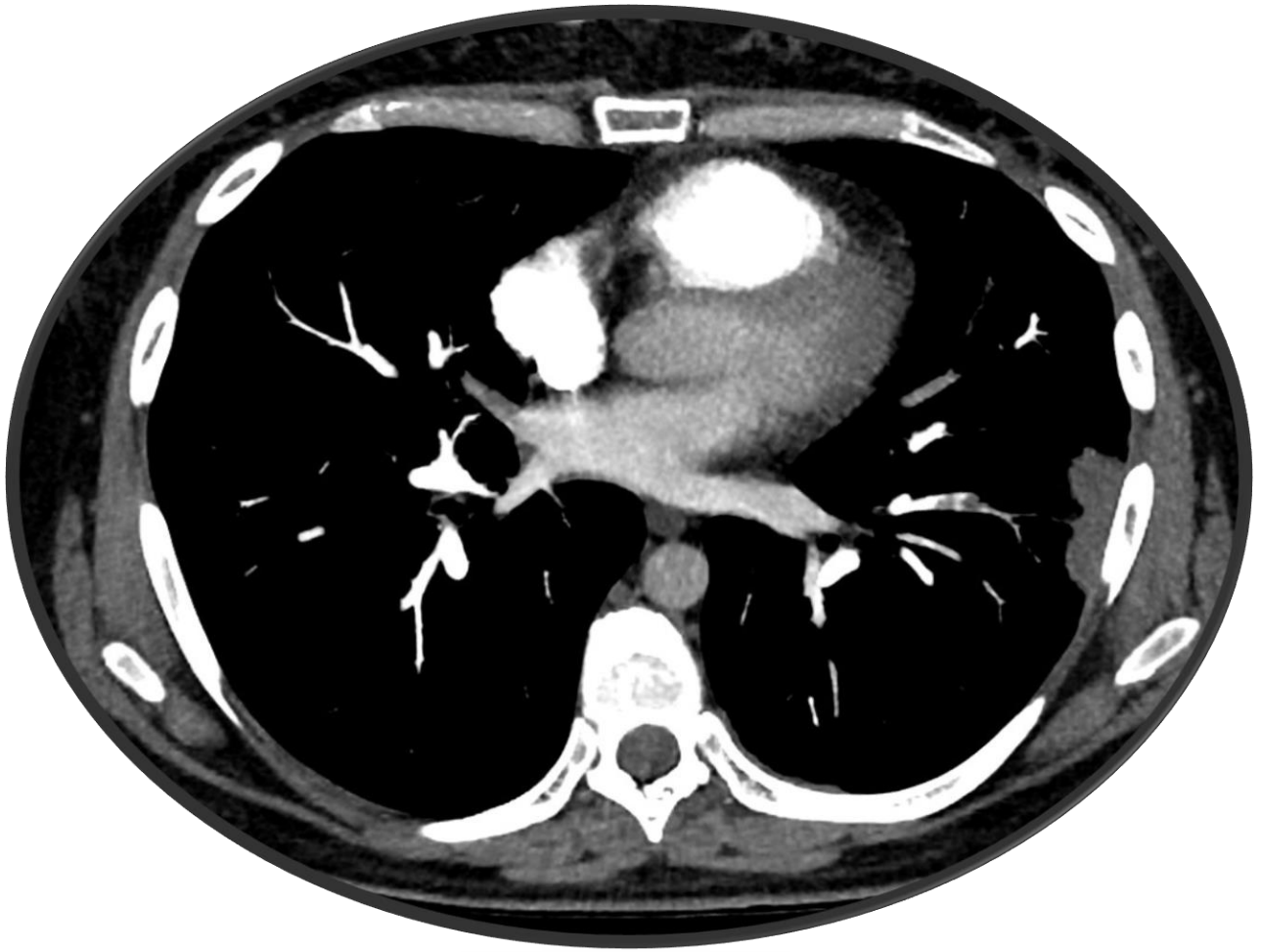

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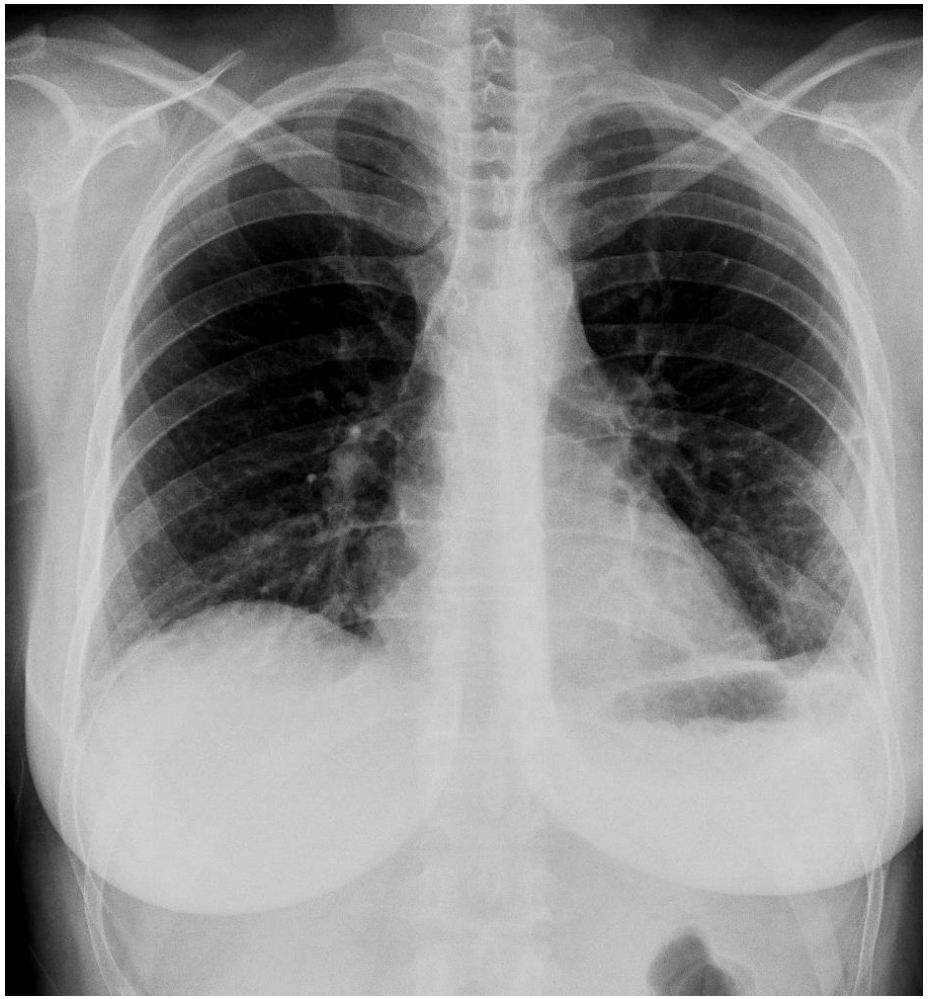
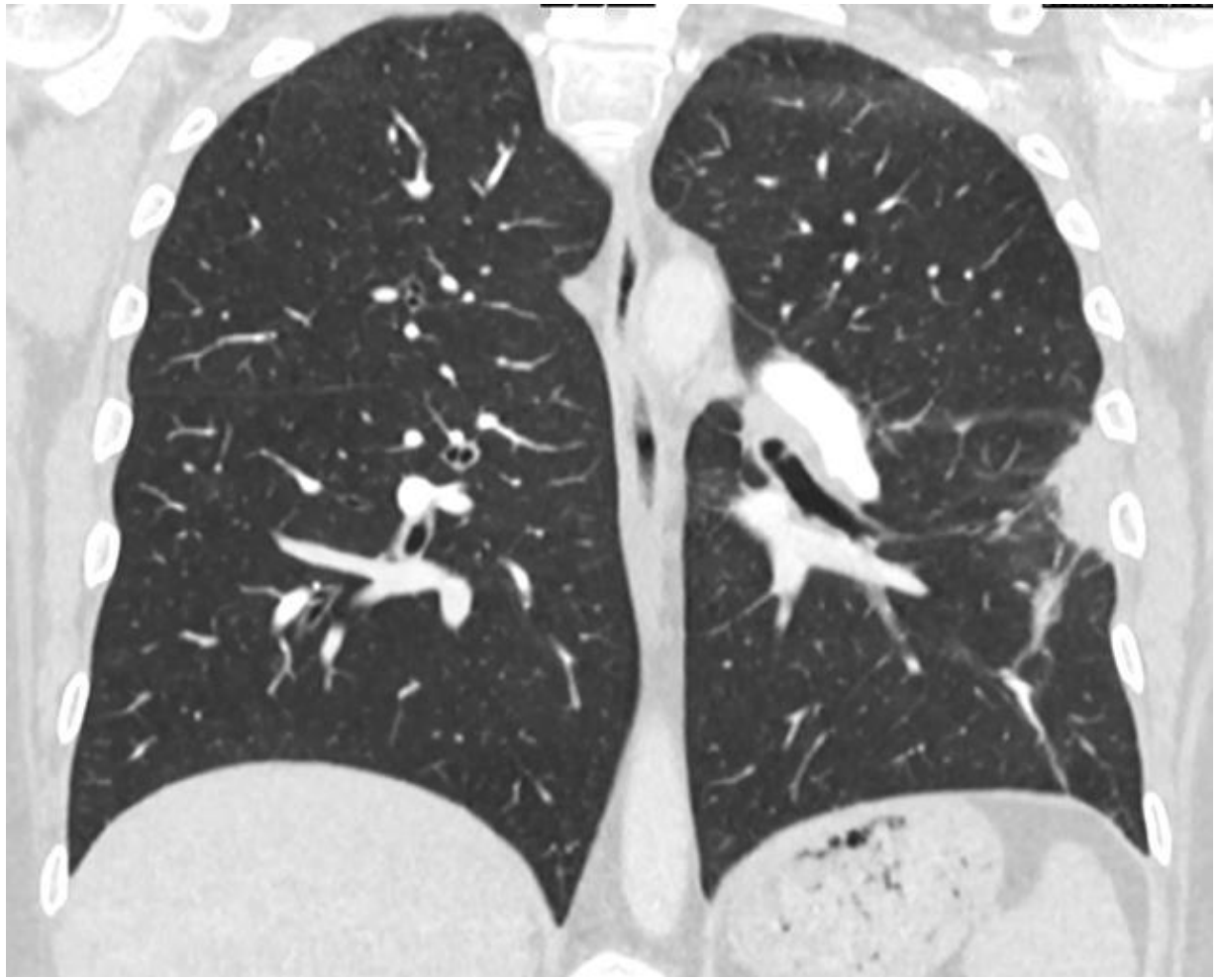




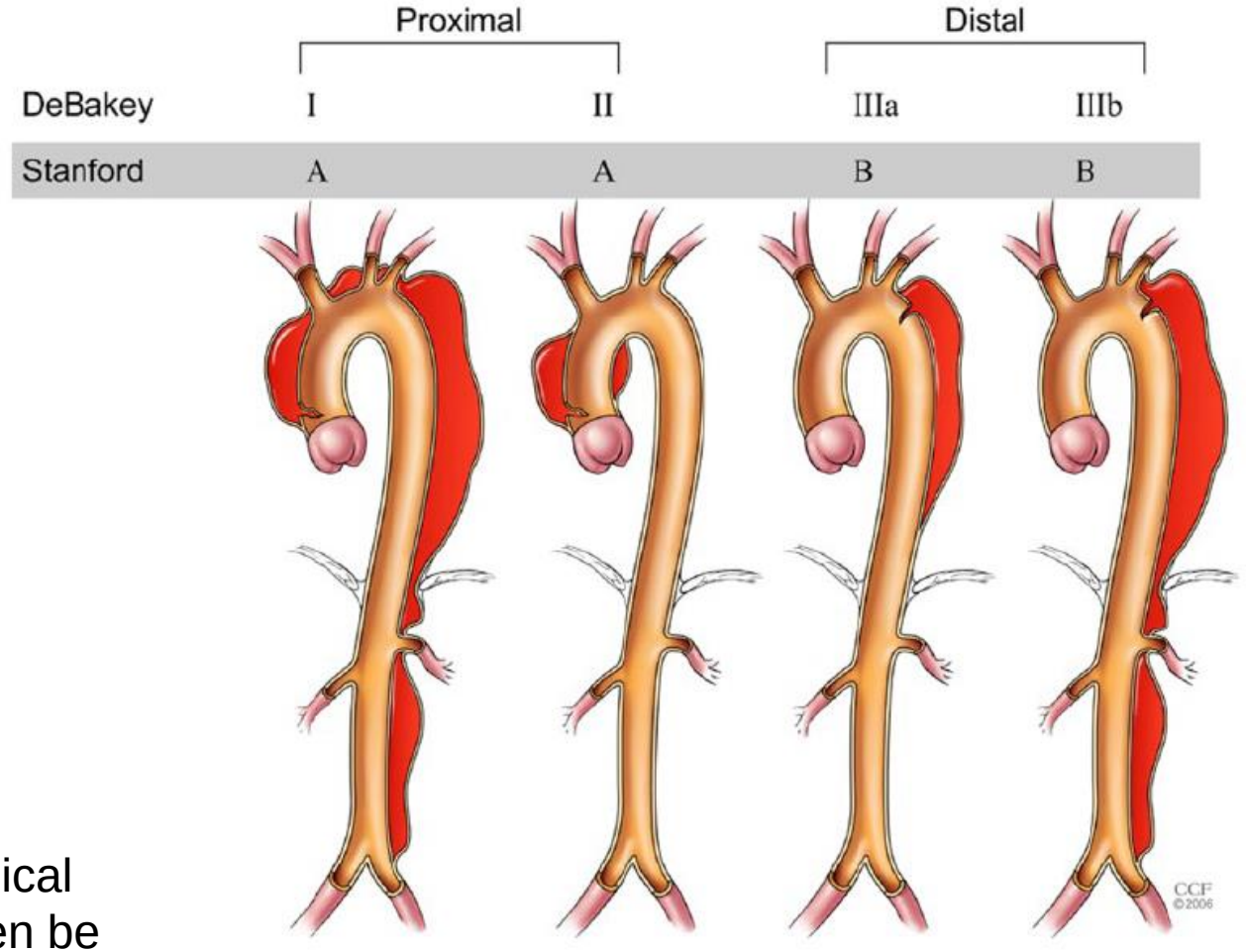
ACUTE AORTIC DISSECTION

- blood enters the medial layer of the aortic wall through a tear or penetrating ulcer in the intima and tracks longitudinally along with the media, forming a second blood-filled channel (false lumen) within the vessel wall.
- The most common risk factor is hypertension
- occlusion of aortic branches, end-organ ischemia
  - abdominal organ ischemia
  - limb ischemia
  - ischemic or embolic stroke
  - paraplegia: involvement of the artery of Adamkiewicz
  - Myocardial infarction
- according to the involvement of the ascending aorta:
  1. Stanford classification
  2. DeBakey classification

ACUTE AORTIC DISSECTION

- Stanford classification
  - type A: A **a**ffects **a**scending **a**orta
  - type B: B **b**egins **b**eyond **b**rachiocephalic vessels
- De Bakey classification
  - type I: involves ascending and descending aorta (= Stanford A)
  - type II: involves ascending aorta only (= Stanford A)
  - type III: involves descending aorta only, commencing after the origin of the left subclavian artery (= Stanford B)

Type A dissection typically requires urgent surgical intervention, whereas type B dissection can often be treated medically.



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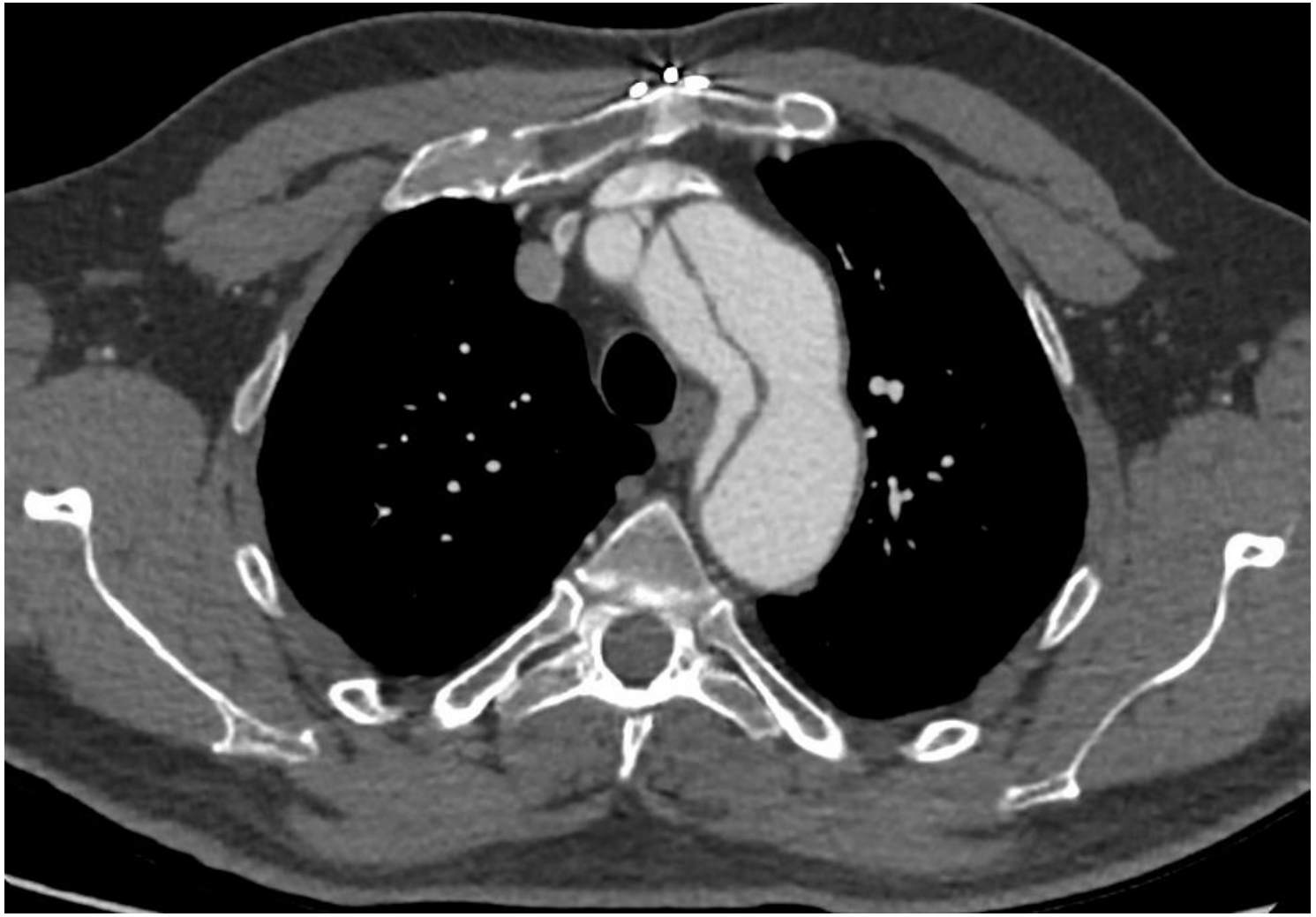
ACUTE AORTIC DISSECTION

- Diagnostic imaging tool: **thoracic CT angiography**
- Findings:
  - flap separating the two lumina (false and true lumen)
  - internal displacement of intimal calcification
  - delayed enhancement of the false lumen
  - Cobweb sign
  - Beak sign
  - pleural or pericardial hematoma

ACUTE AORTIC DISSECTION



ACUTE AORTIC DISSECTION