Pulmonary Embolism Presentation and Diagnosis

Pulmonary embolism is a life threatening occurance and it is necessary to diagnose this quickly. Patients typically present with SOB, tachypnea, hypoxia, and hemoptysis. Diagnosis is done with CT Pulmonary angiogram, but can also be done with V/Q scan and D-dimer.



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Presentation

Sudden onset Shortness of Breath (S.O.B.)
S.O.B.
Patients with PE typically present with sudden onset shortness of breath.

Tachypnea
Tac-P-lungs
These patients also have tachypnea, or rapid respiratory rate (greater than 20).

Pleuritic Chest Pain
Pearls causing Pain-bolt
Patients experiencing pulmonary embolism often complain of pleuritic chest pain, which worsens with breathing.

Hemoptysis
Red-mop coughing blood
In some cases of PE, patients display hemoptysis (coughing up blood).

Hypoxemia
Hippo-blood-O2
With pulmonary embolism, a perfusion defect occurs, leading to decreased ability for oxygen to be transferred to the blood. This manifests as hypoxemia.

Sudden Death
Death of lungs
In severe cases of PE, patients may experience sudden death. This may often be the first sign of PE they show.

Diagnosis

Gold Standard: CT Pulmonary Angiography
Gold Cat-scanner with Lungs Angel-graph
CT pulmonary angiography is the gold standard for diagnosing pulmonary embolism. This works by obtaining a pulmonary angiogram using computed-tomography.

X-Ray
X-ray
Chest X-rays in PE can demonstrate abnormalities, but usually lack signs that are specific for the diagnosis of PE. It is for this reason that X-ray is not the first line method of diagnosing PE.

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D-Dimer

Detective-Dime

D-dimer is a fibrin degradation product, a small protein fragment present in the blood after a blood clot is degraded by fibrinolysis. The D-dimer concentration may be determined by a blood test to help diagnose thrombosis.

V/Q Scan

Vent/Q-pear-fuse Scanner

Ventilation/perfusion scan (or V/Q scan or lung scintigraphy), which shows that some areas of the lung are being ventilated but not perfused with blood (due to obstruction by a clot). It is particularly useful in patients with contrast allergies, or those who are pregnant and should have decreased radiation exposure.

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