

Case Study

Pulmonary Embolism

T.M. is a 60-year-old interior decorator who suffered a stable fracture of the power was in an automobile accident four days ago. She has multiple areas, soft tissue trauma to relate, as evidenced by the large hematomas over the entire left leg and right by. She is being treated by the mobilization with bed rest. She is receiving heparin 5000 units subcutaneous Q6 hours, oxycodone/acetaminophen (Percocet) two tablets PO every four hours PRN, and psyllium (Metamucil), 2 teaspoons BID.

During the morning assessment, you find the following vital signs: blood pressure 122/82 mmHg, heart rate 82 beats/min, respiratory rate 16 breaths/min, in temperature 98.2°F. She is awake, alert, and oriented X3. Her lung cells are clear but decreased in the lower lobes bilaterally. She denies acute pain, but says her legs are very sore. Her pedal pulses 2+, 1 + edema around ankles, legs warm and bluish. She is taking a regular diet drinks fluids well. Her latest PTT reported this morning was 42 seconds.

When making rounds in the morning, you find her struggling to sit up in bed and holding her chest. She tells you that she has severe chest pain and cannot read. You check your vital signs and find blood pressure 102/66, heart rate 110, respirations, 38, and she is slightly confused. When listening to her chest, you know, the breath sounds are markedly decreased in her lower lobes and she has crackles and wheezes in the upper lobes. She coughs and her sputum is frothing and red. Your first action after your initial assessment is to:

- a. start oxygen at 6 L/min per nasal cannula, then notify the physician

When you notify the physician, she orders stat ABGs, pulse oximetry, continuous oxygen that 8 L/min, insertion of an IV, and stat EKG. The patient's SpO₂ is 78%. ABG results that would reflect the presence of a pulmonary embolism include:

- a. pH 7.45, PaO₂ 58 mmHg, PaCo₂ 32 mmHg, HCO₃ 22 mEq/L

The patient is transferred to the intensive care unit after she has a lung scan. The lung scan detects a 60% area of dead space from impaired perfusion of ventilated alveoli. Heparin drip is started at 1200U/hr after an initial bolus of 5000 U. Thrombolytic therapy is useful in the treatment of pulmonary embolism; however, you also recognize that thrombolytic therapy is contraindicated for this patient, because:

- a. she has experienced recent trauma

Based on the ABG results, you identified that the type of respiratory failure she is experiencing is:

- a. hypoxemic respiratory failure

Based on the findings of the lung scan, you identify the mechanism of respiratory failure that your patient is experiencing is:

- a. V/Q mismatch

Additional orders that would be appropriate for your patient upon transferred to the intensive care unit are:

1. ABGs q 4h
2. Continuous EKG monitoring
3. Foley catheter with hourly urine output
4. Morphine 4 mg IV q 2hr
5. PT and PTT q 4hr, call if more than twice normal value
6. Pulmonary artery catheter with hemodynamic monitoring

Eight hours after the heparin infusion is started, the patient's PTT is 64 seconds. You will:

- a. continue the infusion

Your patient is developing a serious complication of pulmonary embolism. Identify the complication from the clues that are provided:

Clues:

- EKG changes the right axis deviation
- increased right atrial pressure
- peripheral edema
- right-sided pleural effusion
- jugular venous distention
- hepatomegaly

What is the complication? Right-sided Heart Failure

The following drugs are used in the treatment of heart failure. Identify the rationales for their use accordingly:

#	Drug
1	Digoxin
2	Dobutamine
3	Furosemide

4	Milrinone	
5	Nitroglycerine	
Rationale		Drug #
Venous dilation, reducing preload		5
Positive inotropic agent that slows the heart rate		1
Increases myocardial contractility and causes mild vasodilation		2
Mobilize edematous fluid and reduce preload		3
Phosphodiesterase inhibitor that has a positive inotropic effect and promotes peripheral vasodilation		4

You evaluate that your patient's condition is improving when:

- a. her arterial PaO₂ increases