

Case Study 25 Spontaneous Pneumothorax

Difficulty: Intermediate

Setting: Emergency department, hospital

Index Words: pneumothorax, arterial blood gases (ABGs), emphysema, assessment, respiratory distress, patient education, pleurodesis, chest drainage system

Giddens Concepts: Collaboration, Coping, Gas Exchange, Oxygenation, Patient Education, Safety

HESI Concepts: Assessment, Collaboration/Managing Care, Gas Exchange, Nursing Interventions, Oxygenation, Patient Education, Safety

► Scenario

A.W., a 72-year-old woman with severe emphysema, was walking at a mall when she suddenly grabbed her right side and gasped, “Oh, something just popped.” A.W. whispered to her walking companion, “I can’t get any air.” Her companion yelled for someone to call 911 and helped her to the nearest bench. By the time the rescue unit arrived, A.W. was stuporous and in severe respiratory distress. She was intubated, started on intravenous lactated Ringer’s at KVO (keep vein open), and transported to the nearest emergency department (ED).

On A.W.’s arrival at the ED, the physician auscultates muffled heart tones, no breath sounds on the right, and faint sounds on the left. A.W. is stuporous, tachycardic, and cyanotic. The paramedics inform the physician that it was difficult to ventilate A.W. A portable chest x-ray (CXR) examination shows an 80% pneumothorax on the right.

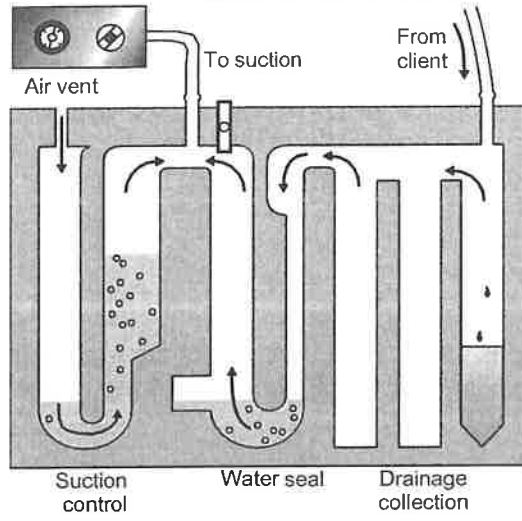
Chart View

Arterial Blood Gases (ABGs; 100% O₂)

pH	7.25
PacO ₂	9 mm
Pa	32 Hg
HCO ₃	27 mmol/L
SpO ₂	53%

1. Given the diagnosis of pneumothorax, explain why the paramedics had difficulty ventilating A.W.
2. Interpret A.W.’s ABGs.
3. What is the reason for A.W.’s ABG results?

PART 1 MEDICAL-SURGICAL CASES CASE STUDY 25



PART 1 MEDICAL-SURGICAL CASES

9. What do you need to document regarding A.W.'s chest drainage system?

10. While A.W. has a chest drainage system, what instructions do you need to give to the nursing assistive personnel (NAP) who is working with A.W.?

11. The secretary tells you A.W.'s husband has just arrived. What will you discuss with him about A.W.'s status and her hospital admission?

12. You approach A.W.'s bedside and ask about what look like two healed chest tube sites on her right chest. A.W.'s husband informs you that this is the third time she has had a collapsed lung. He asks whether this will continue to happen. How will you respond?

13. It is now the end of your shift and A.W.'s condition has stabilized. Using the SBAR framework, describe the bedside change-of-shift report you will give the oncoming nurse.

CASE STUDY PROGRESS

Because A.W. has a history of spontaneous pneumothoraces on the right side, the physician elects to perform chemical pleurodesis on A.W. after her condition stabilizes.

14. A.W. asks what a pleurodesis is. How would you describe this procedure and what will happen?

CASE STUDY PROGRESS

A.W. recovers uneventfully and is discharged home 4 days later with a chest tube and Heimlich valve. The physician connects the one-way (Heimlich) valve between the distal end of the chest tube and a drainage pouch.

15. Discuss the purpose of this device.
16. You teach A.W. and her husband about the care of the chest tube and Heimlich valve. Which of these statements would indicate that further teaching is necessary? Select all that apply.
- "I will maintain a water-tight dressing around the chest tube site."
 - "I can shower if the device is completely covered in plastic."
 - "When I am moving around I must keep the collection system below the insertion site."
 - "I will notify the physician if there is a change in the color or amount of drainage."
 - "The arrow on the flutter valve should always point toward me."
 - "I will check the insertion site twice daily for swelling, redness, and drainage."

