Case Study 27

Name _____ Class/Group _____ Date _____

Group Members _____

Scenario

P.W., a 33-year-old woman diagnosed with Guillain-Barré syndrome (GBS), is being cared for on a special ventilator unit of an extended care facility because she requires 24-hour-a-day nursing coverage. She has been intubated and mechanically ventilated for 2 weeks and has shown no signs of improvement in respiratory muscle strength. Her ventilator settings are assist-control (A/C) of 12/min, tidal volume (V_T) 700 mL, Fio_2 0.50, and positive end-expiratory pressure (PEEP) 5 cm H_2O. She is receiving enteral nutrition with Ensure Plus by PEG (percutaneous endoscopic gastrostomy [with a transjejunal limb]) tube (2800 kcal/24 hr). The NAP (nursing assistive personnel) reports that P.W.'s morning vital signs are 108/64, 118, 12, 100.6° F (38.1° C) and that P.W. may have diarrhea.

1. Do any of P.W.'s vital signs concern you and why?

2. Why is P.W.'s respiratory rate 12 breaths per minute?

3. What are common causes of enteral nutrition diarrhea?

4. Describe the assessment you need to perform at this time.

5. While you are assessing P.W., she has an explosive, watery stool. Because her other assessment findings are unremarkable, you believe a gastrointestinal infection, possibly *Clostridium difficile*, is responsible for the onset of the fever and the diarrhea. Based on this premise, what actions do you need to take?

6. Because she had diarrhea, you decide to give P.W. a bath. You note that her cheeks are billowing slightly outward each time the ventilator delivers a breath. What could cause this phenomenon?

7. Describe how you can determine the cause of the problem.

CASE STUDY PROGRESS

You believe that P.W. has developed an air leak, and you insert more air in the cuff to seal the leak. This temporarily corrects the problem, but over the next 24 hours, the leak returns and becomes worse, and the ventilator's low exhaled volume alarm begins to sound frequently.

8. What action will you take?

9. The physician elects to insert a No. 8 Shiley tracheostomy ("trach") tube with a disposable inner cannula. P.W. becomes increasingly anxious after receiving the news. How would you prepare P.W. and her husband for the tracheostomy?

10. What are three evidence-based practices you will need to continue or implement to prevent ventilator-assisted pneumonia after she has the tracheostomy?

CASE STUDY PROGRESS

P.W. undergoes the tracheostomy procedure without complications. In the interim, the cultures come back confirming the presence of a *C. difficile* infection and she is started on antibiotic therapy. When you return the morning after the tracheostomy procedure and assess the new tracheostomy, you note that the trach tape looks tight. You are unable to insert one finger between P.W.'s neck and the trach tape. You note that the tissue surrounding the incision is edematous. As you palpate the area, your fingers sink into the skin, and you auscultate a popping sound through your stethoscope.

11. Discuss the significance of these assessment findings.

12. What should be your next actions?

13. P.W.'s husband arrives and you speak with him about her having developed subcutaneous emphysema. He collapses into the nearest chair, tears begin to roll down his cheeks, and he says, "It's been almost a month now, and all these things keep happening. Are you sure she'll recover?" How would you respond?

14. P.W. has been receiving lorazepam (Ativan) 1 mg IV every 4 hours to reduce her anxiety. Given her current situation and her husband's distress, describe six nonpharmacologic options you could use to promote the well-being of P.W. and her husband.

CASE STUDY PROGRESS

Over the next several weeks, P.W. progressively regains neurologic functioning.

15. What factors would be considered in determining when P.W. is ready to be weaned from mechanical ventilation?

16. What are your responsibilities during the weaning process?

17. Which assessment finding during the weaning process would indicate P.W. should be placed back on the ventilator?
    a. Heart rate 92 beats/min
    b. Temperature 99.3° F (37.4° C)
    c. Respiratory rate 34 breaths/min
    d. SaO_2 of 94%