CASE STUDY 4: Preschooler

Overview: This case requires knowledge of foreign body aspiration (FBA), growth and developmental risks for FBA, as well as an understanding of the client’s background, personal situation, and family-child relationship.

GENDER
M

AGE
4

SETTING
■ Emergency room

ETHNICITY
■ Asian American

COMMUNICATION
■ English/Chinese

PHARMACOLOGIC
■ Cetazolin (Ancef)

PSYCHOSOCIAL
■ Anxiety

PRIORITIZATION
■ Emergency situation

DELEGATION
■ Nurse assistant
■ Client teaching

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Client Profile

Sok Wu Yang is a preschooler who is celebrating his fourth birthday today. He lives with his mother, aunt, siblings, and grandparents. His father was killed in a construction accident when Sok Wu was an infant. He has a 6-year-old sister and an 8-year-old brother. His mother and aunt are fluent in both Chinese and English, although his grandparents speak only Chinese. He and his siblings also are fluent in both languages, speaking their native language when conversing with their grandparents and English with their mother and aunt. Sok Wu, nicknamed Scotty by his family to facilitate his integration into preschool, enjoys preschool and playing with his friends there. The family has been planning a birthday party for Sok Wu and has invited his preschool class to attend as well as one of his sister’s friends and his brother’s best friend from school. Sok Wu is very excited about the party and wants to help in all of the preparations.

Case Study

Two hours before his party begins, Sok Wu is brought to the emergency department of the hospital located two blocks from his home by his mother and aunt. His mother is very upset and tells the nurse Sok Wu had “swallowed a party balloon” that he found on the table at home. He is in respiratory distress when his mother and aunt bring him to the hospital. As the nurse assesses the client’s airway, she asks the nursing assistant to take Sok Wu’s vital signs with the following results:

- Temperature: 36° C (96.8° F)
- Pulse: 140 beats/minute
- Blood pressure: 70/40
- Respirations: irregular

The child’s pulse oximetry reading is 78% on admission. The nurse’s assessment reveals barely audible and diminished breath sounds bilaterally; stridor and use of accessory muscles; heart sounds weak and irregular; cool, clammy skin; and decreased responsiveness.

Questions

1. Discuss your impressions about the above situation.
2. What are the nurse’s priority interventions as the child enters the emergency department?
3. What is the significance of Sok Wu’s vital signs, oxygen saturation reading, and the nurse’s assessment findings?
4. What are the nursing priorities for this situation?
5. Discuss how you think Sok Wu’s mother and aunt are feeling at this point.
6. The health care provider prescribes the following for Sok Wu:
   - Order stat chest X-ray.
   - Initiate PIV of 5% Dextrose and 0.2%
Questions and Suggested Answers

1. Discuss your impressions about the above situation. Sok Wu has probably aspirated the balloon and it is blocking his airway. Because balloons are pliable, they are difficult to expel from the airway using the Heimlich maneuver, usually requiring procedural removal. Because of the other information, including his vital signs and the fact that he is still conscious, although barely, the blockage may be partial rather than complete.

2. What are the nurse’s priority interventions as the child enters the emergency department? The nurse’s priorities in this situation include assessing the child’s airway, breathing, and circulation. Depending on these findings, actions must address maintaining a patent airway, effective respirations, and tissue perfusion.

3. What is the significance of Sok Wu’s vital signs, oxygen saturation, and the nurse’s assessment findings? The normal temperature for a 4-year-old is 37.5–37.7°C (99.5°–99.9°F) so Sok Wu’s temperature is below normal, probably the result of decreased tissue perfusion secondary to reduced oxygen intake. The normal pulse rate for a 3- to 5-year-old is 75–125 beats/minute. His pulse is elevated probably due to a combination of factors including anxiety, and increased cardiac output to compensate for decreasing tissue perfusion. His blood pressure is below the normal of 102/62. This also is the result of decreasing tissue perfusion caused by hypoxia. His oxygen saturation is 78%, significantly below the normal.

4. Normal saline to infuse at 70 mL/hour.

5. Monitor oxygen saturation via pulse oximetry.


7. Monitor continuous vital signs.

Following the chest X-ray which reveals a foreign body in his trachea, Sok Wu is scheduled for an emergency bronchoscopy. What is the rationale for this procedure in this case?

8. The health care provider prescribes cefazolin 160 mg IV q6h × 3 doses with the first dose to be administered stat. You asked the nursing assistant to weigh Sok Wu on the scales on his hospital bed as you communicate the medication order to pharmacy. The nursing assistant reports that Sok Wu weighs 16.5 kg (36.3 lb). Did the nurse act appropriately when she delegated obtaining Sok Wu’s weight to the nursing assistant?

9. What process does the nurse use when administering medications to this child?

10. Describe your feelings about this situation, considering Sok Wu’s level of growth and development.

11. Thirty-six hours following his admission to the hospital, Sok Wu is discharged with no complications associated with his FBA. He is sent home with his mother and aunt. What would be the nurse’s focus in discharge teaching for Sok Wu’s mother and aunt?
range of 95% to 100%. The barely audible and diminished breath sounds indicate obstruction of the air entering and leaving the lungs, which would be expected in the presence of airway obstruction. The absence of crackles, rales, and rhonchi indicate that infection is probably not present. Stridor is a high-pitched sound made in the presence of air attempting to move through an obstruction of the trachea or larynx. The use of accessory muscles for breathing represents severe respiratory distress. The presence of weak and irregular heart sounds indicates that the heart is having difficulty compensating for decreased tissue perfusion. Cool and clammy skin may be a sign of impending shock as the body shunts blood from the extremities to redirect it to maintain perfusion of the vital organs of the heart and brain. His decreasing responsiveness probably is an indication of decreased tissue perfusion to the brain. All of these are consistently responses to foreign body aspiration resulting in decreased tissue perfusion.

4. **What are the nursing priorities for this situation?**
   a. Ineffective airway clearance related to the presence of a foreign body. The patency of the airway must be established and maintained.
   b. Risk for impaired gas exchange related to inability to inhale oxygen and exhale carbon dioxide secondary to foreign body aspiration
   c. Risk for ineffective tissue perfusion related to impaired gas exchange secondary to FBA
   d. Anxiety related to seriousness of child's condition and unfamiliar hospital surroundings
   e. Deficient knowledge related to child's condition, normal growth and development activities of preschooler, accident prevention

5. **Discuss how you think Sok Wu’s mother and aunt are feeling at this point.** They are both very anxious and worried about Sok Wu and whether he can be successfully treated. They probably fear that he will die or suffer irreparable brain damage if he survives. They also are probably feeling guilty about leaving the uninflated balloons on the table where Sok Wu could pick one up. They are concerned about the other children at home. As an afterthought, they may be concerned about letting the parents of the other children who were invited to the party know that the party has been canceled. This concern undoubtedly would be a fleeting one until Sok Wu’s condition improves.

6. **The health care provider prescribes the following for Sok Wu:**
   Stat chest X-ray.
Initiate PIV of 5% Dextrose and 0.2% normal saline to infuse at 70 mL/hour.
Monitor oxygen saturation via pulse oximetry.
Maintain nothing by mouth (NPO).
Monitor continuous vital signs.

Following the chest X-ray which reveals a foreign body in his trachea, Sok Wu is scheduled for an emergency bronchoscopy. What is the rationale for this procedure in this case?
Performing a bronchoscopy is a standard of care for a client with foreign body obstruction. It is performed to both positively identify the object and to remove it.

7. Following the successful bronchoscopy, what assessments should the nurse perform on Sok Wu? The nurse needs to monitor and maintain a patent airway; monitor vital signs hourly for at least 4 hours; monitor for return of the child’s gag reflex which is anesthetized during the bronchoscopy; monitor the neurological status, breath sounds, heart sounds, skin temperature, and condition hourly; and monitor oxygen saturation via pulse oximetry continuously. As his condition improves, the assessments are performed less frequently and once the gag reflex returns, oral fluids are initiated and the nurse needs to assess the child’s ability to swallow the fluids without choking. The nurse also needs to assess the child’s level of growth and development. Assessments of the mother and aunt’s interaction with Sok Wu should be performed.

8. The health care provider prescribes cefazolin 160 mg IV q6h × 3 doses with first dose to be administered stat. You asked the nursing assistant to weigh Sok Wu on the scales on his hospital bed as you communicate the medication order to pharmacy. The nursing assistant reports that Sok Wu weighs 16.5 kg (36.3 lb). Did the nurse act appropriately when she delegated obtaining Sok Wu’s weight to the nursing assistant? Obtaining a client’s weight is within the scope of practice for a nursing assistant and it was appropriate for the nurse to delegate this activity to the nursing assistant. The nurse needed to communicate the antibiotic prescription to the pharmacy so it could be prepared and administered as soon as possible. This is a nursing responsibility and the nurse’s focus at this point.

9. What process does the nurse use when administering medications to this child? The nursing process when administering medications to this or any client involves implementing the “7 rights.”
RIGHT DRUG: Is this the drug that was prescribed and is this the right drug for this client?
Cefazolin is a first-generation cephalosporin that is prescribed following the removal of a foreign body to prophylactically prevent infection secondary to aspiration of an unsterile object. This drug’s safety and efficacy have been proven for use in children. Administering three doses is typical prophylaxis.

RIGHT DOSE: Is this the dose that was prescribed and is this a safe dose for this client?
The safe dosage range for this drug when prescribed to a child is 25–100 mg/kg per day in four divided doses so each individual dose for Sok Wu is 103–412.5 mg. The dose prescribed for Sok Wu is safe for him based on his weight.

RIGHT CLIENT: Is this the right client for which this medication has been prescribed?
The nurse should check the health care provider’s prescription and ensure it is on the client’s medical record, compare the prescription to the medication administration record (MAR) of the child, compare the label on the minibag for the correct child’s name, and check the name outside the child’s hospital room. The final and most definitive identification is made by verifying the child’s identification by his or her identification bracelet.

RIGHT TIME: Is this the correct time according to the prescription? Are the time intervals of administration appropriate for this drug and the route prescribed?
The first dose for Sok Wu was prescribed stat and should be administered as soon as possible. This drug is administered every 6 hours via the intravenous route.

RIGHT ROUTE: Is this the appropriate route to administer this medication?
This drug is administered parenterally, usually by the intravenous route. The nurse also needs to validate that the vascular access is patent and free of complications. In addition, the rate of administration needs to be appropriate for the access. The time frame provided by the pharmacy for the rate of administration is the minimum time that it can be administered based on the drug’s absorption, biotransformation, half-life, and elimination in and from the body. The nurse should base her rate of administration on the gauge of the intravenous catheter and the size of the vein where the access is located. Antimicrobials are very irritating to peripheral vessels and as a rule of thumb, should not be administered more than 25% greater than the rate of the maintenance intravenous fluids.

RIGHT DOCUMENTATION: The administration documentation should consist of the drug name, dose, route, and time of administration as well as
the client’s response. Medication administration should never be documented prior to administering the medication.

RIGHT TO REFUSE: The client has the right to refuse any medication; however, in the case of a child, this right usually rests with the parent or guardian of the child. Most refusals of medications are based on lack of or inaccurate information so, prior to administration of each medication, the nurse needs to tell the client and significant other what the drug is and why it is being given.

10. Describe your feelings about this situation, considering Sok Wu’s level of growth and development. Sok Wu is a preschooler who according to Erikson is involved in the developmental task of initiative versus guilt. His life revolves around socialization and imagination. Socialization provides the opportunity to initiate relationships beyond the immediate family unit. The associative play characteristic of this age group involves playing with other children of the same age. Initiative also can pose dangers to the child as his or her judgment concerning the safety of certain activities is not mature. Objects such as balloons fascinate the preschooler. Unfortunately, the child does not have the cognitive skills to understand the aspiration risk. The child’s imagination provides for socialization when others are not present by the development of “imaginary friends.” Unfortunately, the imagination can be the child’s nemesis when the child is hospitalized and is responsible for his or her primary fear of mutilation at this time. This situation of FBA of balloons is a common threat for preschoolers in the presence of society’s view that balloons are part of a child’s birthday even in light of scientific evidence of the danger balloons pose to young children. The incidence of mortality from FBA in children is 350–2,000 annually with the peak incidence in children 1–3 years of age. The incidence is highest in boys under the age of 5 years. The most common aspirated objects are toys, of which balloons comprise 29% of deaths due to FBA. This is a preventable situation and parents of young children need to be educated about the dangers of balloons.

11. Thirty-six hours following his admission to the hospital, Sok Wu is discharged with no complications associated with his FBA. He is sent home with his mother and aunt. What would be the nurse’s focus in discharge teaching for Sok Wu’s mother and aunt?
   a. Assess the mother and aunt’s knowledge of the situation.
   b. Reinforce information concerning growth and development and accident prevention.
   c. Provide verbal and written information regarding:
      (1) Medication administration, if appropriate
      (2) Signs and symptoms to report to health care provider
(3) Contact numbers for questions
(4) Importance of follow-up with health care provider
d. Provide adequate time for mother and aunt to ask questions, answering them honestly.
e. Document teaching and the mother and aunt’s response.

References


