Chest Tubes: Management and Care

Chest tube placement is a life-saving medical procedure, and understanding the management and care of patients with chest tubes is critical for nurses. Before assessing the chest tube or patient, it is important to know if the drainage system should be hooked up to continuous wall suction or water seal. Also, confirm that suction control is dialed to correct pressure, and the drainage system is kept below the level of the chest. The next step is to assess the chest tube and patient. First, look for crepitus, which occurs when gas or air leaks into the subcutaneous layer of the skin. This can indicate an air leak or the need for a dressing change. Notify the doctor if crepitus is felt.Second, the water in the water seal chamber should oscillate; specifically, the level will move up during inhalation and move down during exhalation. When there is no oscillation in the chamber, check the line for kinks.Third, assess respiratory status and auscultate lungs for any sound changes. Air leaks, an extended pneumothorax, or a hemothorax can put the patient in respiratory distress.Fourth, keep the dressing clean, dry and intact. Monitor for signs of infection, and if the dressing becomes soiled change the dressing per hospital policy.Fifth, excessive bubbling in the water seal chamber indicates an air leak in the system. Assess the system for possible causes. However, gentle intermittent bubbling should be expected with patients that have known pneumothorax. Occasionally quick interventions may be required if the following situations arise. If the tube dislodges from the patient, the insertion site should be covered with sterile occlusive dressing (petroleum gauze) taped on 3 sides. Finally, if the drainage system is damaged in any way, insert the patient's chest tube into a bottle of sterile water. Keep the bottle below the level of the chest until a new drainage system can be delivered.

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Confirm suction order
Confirming the Suction Order
It is important to know if the drainage system should be hooked up to continuous wall suction or water seal. Also, confirm that suction control is dialed to correct pressure, and the drainage system is kept below the level of the chest.

Assessment

Crepitus
Carpenters
Crepitus occurs when gas or air leaks into the subcutaneous layer of the skin, which is a phenomenon also called subcutaneous emphysema. This can indicate an air leak or the need for a dressing change. Notify the doctor if crepitus is felt.

Kinking
Kinked-hose
The water in the water seal chamber should oscillate; specifically, the level will move up during inhalation and move down during exhalation. When there is no oscillation in the chamber, check the line for kinks.

Shortness of Breath (SOB)
S.O.B.
Assess the patient's respiratory status regularly, and auscultate lung for any sound changes. Any clinical changes, such as the development of shortness of breath can indicate a functional problem. Air leaks, an extended pneumothorax, or a hemothorax can put the patient in respiratory distress.

Infection
Infectious-bacteria
Keep the dressing clean, dry and intact. Monitor vital signs for acute changes, as well as the site of chest tube placement for evidence of infection. If the dressing becomes soiled, change the dressing per hospital policy.

Excessive bubbling
Lots of Bubbles
Excessive bubbling in the water seal chamber indicates an air leak in the system. Regularly assess the system for possible causes or leaks. However, gentle intermittent bubbling should be expected with patients that have known pneumothorax.

Quick Interventions

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If tube dislodges from patient, use petroleum gauze taped 3 ways

Tube Dislodging from the patient and Taped 3 Ways

If the chest tube dislodges from the patient, the insertion site should be covered with sterile occlusive dressing taped on 3 sides.

If drainage system is damaged, place disconnected drainage tube in sterile water

Damaged drainage system with the hose placed in a bottle of sterile water

In the event that the drainage system breaks, it is critical to have a bottle of sterile water at the bedside. If this happens, insert the loose end of the patient's chest tube into a bottle of sterile water. Keep the bottle below the level of the chest until a new drainage system can be delivered.

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