Chest Tube Positioning Device to Improve Drainage of Fluid

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Technology description

A surgeon at UT Health San Antonio has developed a magnetic insert that can be used temporarily with a standard chest tube to allow for the correct positioning of the tube after insertion. It allows the clinician to direct the chest tube to the desired location in the chest cavity to evacuate retained blood or fluid.

Background:

Thoracic injury occurs in 22% of all trauma patients and often results in a collection of fluid in the space between the lungs and chest wall (pleural effusion). The standard treatment for this condition is a chest tube to aid in the drainage of fluid from the chest space. However, a chest tube is not always successful in completely removing the fluid. Twenty percent of patients who receive a chest tube will have a retained hemothorax, an incomplete drainage of blood in the chest space.

A retained hemothorax is associated with high rates of empyema (pus gathering the chest space) and pneumonia. This results in additional treatment procedures, extended hospital stays, and possibly death. To combat a retained hemothorax, physicians can administer antibiotics at insertion, insert a second chest tube, and/or perform a thoracotomy (an incision into the chest space) to drain the remaining fluid.

This invention provides physicians a less invasive treatment option than inserting a second chest tube or performing a thoracotomy. The device allows the clinician to direct the movement of the original chest tube, while still inserted in the patient, to an area in the chest space where fluid has accumulated.

Application area

The invention has application in all abdominal cavity surgeries and provides several benefits to the current standard of care:

Less invasive treatment option for retained pleural effusions

Lower cost treatment

Negate the need for higher risk procedures: second chest tube insertion and/or surgery

Easy to use with existing chest tubes

Shortened hospital stays and lower cost treatment

Institution

University of Texas System

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