Clamp for Improved Chest Drainage In Cardiothoracic Surgery

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Technology description

Eliminates Backflow to Reduce Incidences of Pneumothoraces

This context-sensitive clamp could shorten hospital stays following cardiothoracic surgery. This clamp eliminates backflow of air or fluid from thoracic drainage systems. In so doing, it could substantially reduce the incidence of residual pneumothoraces, a condition where air remains in the pleural space after medical intervention. The device also safeguards against infection by ensuring that contaminated fluids cannot re-enter patients' chest cavities. Researchers at the University of Florida have created a clamp does not obstruct out-flow of air or bodily secretions, even as it prevents their re-entry into the chest cavity. The device could decrease medical costs and enhance patients' quality of life by reducing complications following cardiothoracic surgery.

Technology

The invention uses a holding device for the chest drainage systems' collection bag/canister, which automatically opens a normally closed clamp. This typically closed clamp is installed on the tube connecting the catheter to the bag. If the clamp assembly is not properly inserted into its designated receptacle, the tube will close. This feature effectively blocks fluid or air from reentering the system in instances where the collection bag or canister was held at an altitude higher than the patient's chest. Similarly, when the proposed device is placed back inside its designated receptacle, the clamp opens automatically, allowing air or fluid to flow again – unobstructed by the clamp. If the bag or canister holder is placed properly on the stretcher, gurney or wheelchair, it eliminates the possibility of spillage and corresponding sanitation concerns. Appropriate placement will also permit easier readings and, thus, more efficient treatment of patients.

Advantages

Reduces the incidence of residual pneumothoraces, permitting shorter hospital stays

Prevents fluid backflow, safeguarding against costly and dangerous infections in the chest cavity
Lessens the likelihood of spills, minimizing corresponding sanitation concerns
Uses an improved design, decreasing the risks associated with patient transports

Institution

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