

Improved Dressing Design for Insertion Sheaths with Side Ports

Published date: April 15, 2019

Technology description

Need

Central-line associated blood stream infections (CLABSI) are a life-threatening and extremely costly problem in hospitals around the world. When patients in the hospital have indwelling catheters such as pulmonary artery catheters, they are at an increased risk of developing such infections. Occlusive dressings are used to prevent bacteria from entering the sterile space of the insertion site. The dressings currently used for pulmonary artery catheters are not optimally designed to accommodate the insertion sheath with side port and the PAC catheter extending out of the insertion sheath. Because of poor design choices, it is therefore difficult for healthcare providers to make adjustments to the catheter without altering the dressing and risking contamination. Currently used dressings use a 'one-design-fits-all' approach to multiple types of indwelling catheters used in the hospital. However, due to the above mentioned issues with design choices in the currently used dressings, there is a clear need for an improved design that specifically accommodates the side ports and unique attributes of insertion sheaths and PACs.

Technology

Samantha Warren, RN and Jordan Thomas, MD, working at The Ohio State University Ross Heart Hospital, have designed an improved dressing to be used for insertion sheaths with side ports. The dressing is designed to accommodate insertion sheaths with side ports and allows manipulation of the locking mechanism of the PAC while minimizing the risk of sterile field interruption. This dressing, which was principally designed for use with PACs, has the potential to be used in additional applications including any catheters or intravascular medical devices that require insertion sheaths. The dressing was designed in association with the Innovation Studio at The Ohio State University and a prototype was created using 3D printing software and a laser-cutting machine. This dressing is designed for ease in health care access and is flexible enough to increase patient movement. The dressing incorporates a new design that can accommodate a side port located either on the right side or left side of the body. This flexibility allows a healthcare professional to change or alter the dressing in less time without compromising the sterile environment.

Application area

A dressing to be used for insertion sheaths with side ports including those utilized for PACs or other intravascular devices in clinical environments.

Dressing designed and tailored exclusively for insertion sheaths with side ports, used frequently for pulmonary artery catheters (PACs or Swan-Ganz catheters) among other intravascular devices in the hospital.

Advantages

Decreased contamination or infection risk

Improved patient comfort

Efficient access to locking mechanism while maintaining sterility at insertion site

Institution

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