**Chest Tube Dressings: Is Vaseline Gauze A Sacred Cow? An Evidence-Based Practice Project to Improve Patient Outcomes**

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**Purpose:** To standardize nursing assessment and management of chest tube dressings and to determine the impact of an evidence-based chest tube dressing protocol on rate of infection, skin breakdown and air leaks in post-thoracic surgical patients with chest tubes.

**Background:** Current chest tube dressing management practice is variable, based on limited empirical evidence. The Swedish Thoracic Surgical Team reported skin maceration, irritation and blisters in post-surgical patients with chest tubes.

**Synthesis of Evidence:** The literature review explored 1. **Dressing change** frequency and 2. **Dressing type** associated with optimal skin and infection related chest tube outcomes. Dressing changes: Controversial evidence regarding the frequency of dressing changes. Daily dressing changes promote vigilant chest tube site assessments but may increase increased cost, nursing time and risk site contamination. Thus, expert opinion (Swedish Thoracic Team & Surgical CNS) were consulted to determine the frequency of dressing changes. Dressing type: The evidence revealed a lack of empirical data supporting the use of petroleum gauze, recommending use of dry gauze for chest tube dressings to minimize maceration at the tube site. Silicone-based tapes for securing dressings result in lower skin-stripping and pain upon removal, compared to other tapes.

**Change in Practice:** Based on the available evidence, the following chest tube dressing protocol was piloted: 1) dry gauze and silicone-tape dressing; 2) daily and PRN dressing changes; 3) daily chest tube site assessment for skin breakdown, site infection and air leak; 4) documentation of dressing change and site assessment.

**Implementation:** Multifaceted process including development of standardized dressing procedure; education to RNs (OR, PACU, Surgical Unit), ARNPs, Residents and MDs; randomized, biweekly patient rounding to verify RNs were compliant with protocol, intermittent communications/follow-up during pilot period. Pre-implementation data was collected from the EMR for comparison (N=100).

**Results:** Post-implementation data (January - May 2016, N=100) revealed a 7% reduction in air leaks and skin breakdown after implementation of the chest tube dressing protocol. Protocol patients were less likely to have skin breakdown with the dry gauze/silicone tape dressing compared to the pre-implementation dressing (petroleum gauze/foam tape): \(X^2 (1, N = 200) = 6.73, p= 0.009\), but there was no statistical significance between dressing protocol and air leaks: \(X^2 (1, N = 200) = 3.53, p= 0.06\).

**Conclusion:** Current chest tube dressing management continues to be tradition based. Incorporating standardized practice updates based on available evidence may improve complications related to chest tube dressing related outcomes. Additional study is needed to explore more detail (e.g. dressing change frequency, variety of...
populations) to provide more solid, generalizable evidence to guide clinical practice for chest tube dressing management.

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