

# Peripherally Inserted Central Catheter Cushioning: A Pilot Study Comparing Gauze With Silicone Foam

Kerrie Curtis, BN, Grad Cert Cancer/Palliative Care, Cherene Ockerby, BA (Hons), Paul Bennett, BN, GradCertSc (App Stats), MHSM, PhD, Ellen Heywood, BN, GradDipCanNur, and Linda Marshall, Reg Gen and Sick Children Nurse, Dip Renal Nursing

A pilot study was conducted to compare gauze with silicone foam that may be left in place for as long as seven days. Adult patients who were receiving treatment via peripherally inserted central catheters were recruited and alternately assigned to either the gauze or silicone foam group. Patient-reported itch and discomfort, nurse-reported ease of removal, and skin status were recorded for four weeks at each weekly dressing change.

## At a Glance

- Peripherally inserted central catheters (PICCs) usually remain in place for the duration of chemotherapy treatment with dressings changed on a weekly basis.
- A gauze cushioning barrier may be used to protect the skin against the PICC hub; however, guidelines recommend that gauze is changed every 24–48 hours.
- Silicone foam may be superior to gauze as a cushioning barrier and is appropriate for weekly dressing maintenance.

Kerrie Curtis, BN, Grad Cert Cancer/Palliative Care, is a clinical nurse specialist in the Chemotherapy Day Unit at Moorabbin Hospital, Monash Health; Cherene Ockerby, BA (Hons), is a research assistant for the Centre for Nursing Research at Deakin University; Paul Bennett, BN, GradCertSc (App Stats), MHSM, PhD, is a professor and the chair in translational nursing at the Centre for Nursing Research Deakin University–Western Health; and Ellen Heywood, BN, GradDipCanNur, is a nurse unit manager in medical oncology and Linda Marshall, Reg Gen and Sick Children Nurse, Dip Renal Nursing, is a nurse unit manager in the chemotherapy day unit, both at Moorabbin Hospital, Monash Health, all in Victoria, Australia. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. No financial relationships relevant to the content of this article have been disclosed by the authors or editorial staff. Curtis can be reached at [kerrie@littlewoodmansion.com](mailto:kerrie@littlewoodmansion.com), with copy to editor at [CJONEditor@ons.org](mailto:CJONEditor@ons.org).

Key words: chemotherapy; infection control; peripherally inserted central catheter; wound dressings

Digital Object Identifier: 10.1188/15.CJON.253-256

Healthcare providers in the authors' healthcare organization, which includes five public hospitals and other healthcare services, use gauze as a cushioning material under the transparent semipermeable dressing (TSM) for peripherally inserted central catheters (PICCs) for patients receiving chemotherapy. When dressings are changed on a weekly basis, patients often present with dressings that are loose, as well as with evidence of irritation and perspiration under the cushioning gauze. In addition, leaving gauze dressings in place for a week contradicts national and inter-

national recommendations. Therefore, an alternative cushioning material was piloted that would be more comfortable for patients and consistent with evidence-based guidelines.

PICCs are commonly used for long-term vascular access for the administration of chemotherapeutic agents (Baiocco & Silva, 2010). The PICC remains in place for the duration of chemotherapy treatment, often as long as 12 months. Stabilization of the PICC is vital to ensuring the line is secure, preventing migration or accidental removal (Infusion Nurses Society, 2011). However, the dressing

covering the external components of a PICC and the attachments to the PICC can cause these components to exert pressure on the skin, which can result in pressure areas and loss of skin integrity. Therefore, a cushioning barrier often is used to prevent pressure on the skin caused by the PICC.

## Literature Review

Gauze is one of the materials used in Australia as a cushion under the PICC hub; however, little evidence exists to support its widespread use internationally. The practice is mentioned in guidelines produced by one children's hospital in the United States to assist parents in the care of their child's PICC at home (Muñoz, Vesper, & Schroeder, 2010). Although this practice is not evidence-based, it has most likely developed in an attempt to enhance comfort and reduce skin irritation for patients who are required to maintain a long-term PICC.

PICCs require weekly dressing maintenance (Kutzscher, 2012). Evidence-based guidelines for PICC maintenance and dressing change recommend the replacement of transparent dressings every 5–7 days and gauze dressings every 24–48 hours (Adams et al., 2007; Dougherty et al., 2010; Infusion Nurses Society, 2011; O'Grady et al., 2011). Although the guidelines do not refer specifically to the use of gauze as a cushioning material under the PICC hub, the Infusion Nurses Society's (2011) standards of practice state that "placement of a gauze dressing under a transparent dressing should be considered a gauze dressing and changed every two days" (p. S63). Based on the recommendation to change gauze every 24–48 hours and the anecdotal evidence from practice