A Randomized Controlled Trial to Compare Peripherally Inserted Central Catheter Tunnel Lengths in Adult Patients With Cancer

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BACKGROUND: Evidence is insufficient on the effect of tunnel lengths on tunneled peripherally inserted central catheter (PICC) placement in adult patients with cancer.

OBJECTIVES: The primary objective was to explore whether there is an optimal PICC tunnel length to reduce the risk of PICC-related complications. The secondary objective was to compare patients’ pain and comfort levels during catheter placement with different tunnel lengths.

METHODS: Two hundred patients were randomly assigned to groups based on PICC tunnel length. Data collected included baseline characteristics, catheter-related characteristics, PICC-related complications, and patients’ pain and comfort levels.

FINDINGS: Patients with 4 cm, 5 cm, and 6 cm PICC tunnel lengths had a longer catheter dwell time and fewer PICC-related complications. No significant differences were found among all groups regarding patients’ pain and comfort levels. The results suggest that a tunneled PICC is safe and effective. A tunnel length longer than 4 cm is recommended for tunneled PICC placement.

KEYWORDS
peripherally inserted central catheter; tunnel length; catheter dwell time; cancer

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