

PREVENTING PRESSURE ULCERS ASSOCIATED WITH CERVICAL COLLAR IMMOBILIZATION

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Purpose: Trauma patients immobilized in a cervical collar are at high risk of developing pressure ulcers. The aim of this project was to determine if cervical collar related pressure ulcers could be prevented by implementing a systematic collar/skin care program for trauma patients with suspected cervical injuries.

Background: A quality review in first quarter 2008 identified four adult trauma patients who developed cervical collar related pressure ulcers. Application of a cervical collar is a standard intervention for trauma patients with suspected cervical spine injuries. Cervical collars exert capillary closing pressures (CCP) on bony prominences of the chin, mandible and occiput. A sustained CCP of 32 mmHg or greater on these areas may be responsible for skin breakdown. Studies have shown a direct relationship between increased CCP and pressure ulcer formation (Tescher et al, 2007; Plaisier et al, 1994).

Methods: Review of the literature relevant to the problem was conducted to determine best practice. A cervical collar questionnaire was completed by 32 randomly selected trauma nurses to establish current standard practice. Fifty trauma charts were reviewed to determine how collar/skin care was documented in the emergency department (ED). Based on findings, comprehensive staff education included implementation of a systematic collar/skin care program and instruction by a Certified Wound Ostomy Continence Nurse (CWOCN). Post-education tests were distributed to evaluate success of the program. Chart reviews are being conducted by Quality Management and the Trauma Clinical Nurse Specialist to measure outcomes.

Results: The questionnaires revealed lack of knowledge and inconsistent nursing care of the skin under the cervical collar. Review of the trauma charts found minimal documentation regarding collar/skin care, collar change and cervical spine clearance. Preventive measures were implemented to reduce tissue damage that may occur beneath the cervical collar. The trauma documentation flow sheet was revised to facilitate documentation and will be reviewed in the 4th quarter. Ongoing evaluation of post-education tests demonstrates increased staff awareness. Preliminary 3rd quarter data reports a decrease in the number of cervical collar related pressure ulcers.

Discussion/Conclusion: Reducing the incidence of collar-related pressure ulcers in the trauma patient remains a challenge. However, research has shown that pressure ulcer prevention is successful when evidence-based care is provided. A possible limitation for success may be related to the type of cervical collar worn by the trauma patient in the ED. A future goal is to conduct a product trial in the ED on a cervical collar that provides good motion restriction and exposes the patient to lower CCP.

Keywords: Cervical collar, pressure ulcer, trauma, c-spine immobilization