Head Over Heels for Prevention: Use of a silicone bordered foam heel dressing in the prevention of pressure ulcers

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Preventing pressure ulcers has become a priority in many facilities. The significance of the problem is reflected in the prevalence of pressure ulcers (2.5 million treated annually in the United States) and the knowledge that pressure ulcers are often indicative of a poor overall prognosis and may contribute to premature mortality. The average cost of treating a single full-thickness pressure ulcer is approximately $70,000, resulting in a cumulative cost of $11 billion annually in the United States. The heels are the second most common site of pressure ulcers in the US, sacrum being the most common. The reported prevalence of heel pressure ulcers increased from 19% in 1990 to 30% in 2002. Prevention of heel pressure ulcers includes multiple types of offloading devices. Studies have shown that an ordinary head pillow has varied effectiveness compared to commercial heel-protecting devices. After reviewing the literature, Fowler and Scott-Williams found no controlled clinical studies assessing the clinical effectiveness and direct costs of offloading devices.

Significance

Princeton is a 292 bed hospital of Level III designation. A study is conducted annually to determine the prevalence of pressure ulcers in our facility. With an overall facility pressure ulcer prevalence of 12.5% in 2013 and 14.4% in 2014, pressure ulcers of the heels are second only to the sacrum. 2013 results gave an incidence of facility acquired pressure ulcers of 3.0% and 7.5% in 2014. In 2013, 57% of all facility acquired pressure ulcers occurred on the heel. During 2014, the number decreased to 33%. During 2013, our facility spent an estimated cost of $684,674.86 on facility acquired pressure ulcers.

We, as a facility, are committed to continuing this downward trend of facility acquired heel pressure ulcers. Currently, our facility uses a “Pressure Prevention Protocol” on all patients admitted with a Braden Score of 18 or less which includes keeping the “heels suspended off of bed at all times (using pillows)”. A foam heel suspension boot was also used if ordered by the doctor or WOCN nurse. Using the data collected in this study, new initiatives are in the process of being put into place to continue this downward trend and will be discussed further in the “conclusions” section.

Background and Introduction

Methods

The study was performed in a medical intensive care unit where the patients have one of the highest levels of acuity in the facility. Heels dressing were placed upon arrival to the unit, including transfers from other floors or units, patients from surgery, and new admissions who had no breakdown noted to the heel. Additionally, the dressing was added to those groups of patients who had a deep tissue injury, Stage I, or Stage II pressure ulcer as deemed appropriate by the WOCN nurse. Using a data collection form, the date and condition of the heel(s) was documented by the WOCN nurse at the time of placement. Dressings were changed twice per week with the exception of two weeks with circumstances beyond our control. At each dressing change, the date and condition of the heel(s) was recorded again. The heel dressings were left in place and were not peeked back to observe the heel between dressing changes. The patient(s) remained in the unit during the duration of the patient’s hospital stay and we continued to follow them even after transfer out of the ICU unless the patient became self-ambulatory and at that time, the dressing was discontinued.

Please note that initially, the study was conducted for approximately two months. However, to further validate our findings, the study was reinitiated for a period of an additional two months. A total of 102 patients were studied.

Results

- The average Braden Score of those studied was 13 upon admission and 14 upon either discharge or discontinuation of the dressing.
- 22 patients were on a specialty support surface (i.e. low air loss mattress, waffle mattress, or other pressure redistribution surface).
- 93 patients had the heels elevated off of the bed using a pillow in addition to receiving the dressing; no heel suspension devices were used in conjunction with the dressing.
- 51 patients were on the ventilator at some point during their hospital stay.
- 83 patients had a mobility of “dependent-maximum assistance”, indicated by a Braden mobility score of 1 or 2 and 19 had a mobility of “moderate assistance”, indicated by a Braden mobility score of 3.
- The average age of those included in the study was 65 with 28 being the youngest and 91 being the oldest.
- Of the 102 patients studied, 4 developed a heel pressure ulcer.
- 2 of the 4 patients had a Braden score less than 6.
- 2 of 4 had increased shear to the heel secondary to agitation.
- 2 of 4 had documented alterations to their dressing.
- 3 of 4 were obese.
- All were dependent with a Braden scale mobility score of 1 or 2.
- All were nutritionally supported with tube feeds only.
- All had multiple co-morbidities and were non-compliant in treatment.
- 2 patients were admitted with pressure ulcer(s) to the heel(s) and by discharge, one of the ulcers had healed.

- One patient was admitted with a G1 ulcer which progressed to a Stage II and was 100% epithelialized by discharge. LOS was 25 days.
- One patient was admitted with a Stage II which was 100% epithelialized by discharge; LOS was 24 days.

Conclusion/Implications for Practice

- The use of a silicone bordered foam heel dressing was effective in reducing the incidence of heel pressure ulcers.
- Developing a protocol for placing the heel dressing will enhance RN compliance with preventative measures.
- a. Heel dressings are placed on all admitted patients with a total Braden score of 18 or below.
- b. Heel dressings are placed on any patient when their Braden score decreases to 18 or less.
- c. The current foam heel suspension boot is often removed to turn/in move the patient due to bulkiness and not replaced. Heel dressing is left in place between changes and not peeked back. It does not hinder/increase difficulty of turning/moving the patient as the foam heel suspension boot does.
- The heel dressing protocol will be added as its own subsection of the existing Pressure Prevention Protocol in the facility.
- The incidence of heel pressure ulcers during the time of the study was 3.9% for these patients. Using the dressing will decrease the overall incidence of the facility as well.
- A key initiative to decrease unnecessary patient cost. Dressing should significantly decrease the amount spent on facility acquired pressure ulcers per year.
- Through lowering the incidence of pressure ulcers, this will ultimately increase our standard of care for patients.

References