

## **IMPROVEMENT IN PATIENT POST OPERATIVE SKIN INTEGRITY FOR LONG DURATION ROBOTIC SURGERY**

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**Purpose:** The purpose of this project was to improve patient's post operative skin condition undergoing long duration robotic surgery. In Robotic Surgeries exceeding 3 hours, will releasing each shoulder bolster for 5-10 minutes every 2-3 hours result in improved post-operative skin integrity?

**Background:** In 2009, an increase in shoulder Stage 1-3 pressure ulcers (PU) was observed postoperatively for patients undergoing robotic surgery in the steep Trendelenburg position for greater than 3 hours. Pressure reducing surfaces are utilized during the procedure; however, surgical factors such as sterility, exposure and potential injury create difficulty in repositioning patients every two hours intra operatively. Temporary relief of shoulder bolster pressure was proposed as a means of preventing postoperative skin injury without compromising the accomplishment surgery.

**Methods:** One shoulder bolster for each patient was released for 5-10 minutes every 3 hours (intervention). The other shoulder bolster was not released (non-intervention). None of the interventional sites developed a PU while all of the non-interventional sites were assessed as Stage 1-2 PU at case conclusion. Due to favorable results with intervention, a consultation occurred with Risk Management and the Ethics committee. The method of acquiring data was modified and a decision was made to release shoulder bolsters bilaterally. Data collection was obtained via photographs and assessment form was created for PU tracking.

**Results:** In 4 prolonged robotic cases, the non intervention shoulder revealed Stage 1-2 PU development while no damage was noted on the opposite shoulder in which the intervention was performed. Seven cases with bilateral intervention showed no PU development. Documentation review of the PU assessment form for 210 surgical cases of greater than 2 hours length was done from 3/30 to 5/1/10. Eleven instances of possible PUs were determined from documentation review. All but 3 instances subsided with no PU development and none were robotic cases.

**Discussion:** Improved post operative skin condition was achieved through the release of bolsters during surgery as evidenced by post procedure photographs. Limitations include small sample size and an unexpected ethical dilemma in continuation of non-intervention data collection. Increased awareness of perioperative skin condition and improved interdepartmental communication occurred as a result of staff education, implementation of skin assessment form and staff participation with the intervention.

**Conclusion:** Release of bolsters does improve postoperative skin integrity in long duration robotic surgeries. Based on these preliminary results, intermittent pressure release should ethically become a standard practice for all patients. Continued implementation of this intervention with a larger sample size is indicated to further validate its effectiveness.

**Key Words:** Pressure Ulcers, Prevention of Pressure Ulcers, Robotic Surgery, Steep Trendelenburg,