

Q&A: Approaching Differences in Robotic Surgery Positioning

February 29, 2016 By Rebecca Rudolph-Witt

In addition to specialty positioning equipment, robotic surgery positioning equipment has established a presence in the market. Yet, not too much information about this style of positioning seems to be available.

To figure out what makes this different, *Surgical Products* connected with Dan Allen, the founder of D.A. Surgical, who identified the common pitfalls and opportunities in positioning patients for robotic procedures.

What makes robotic surgery positioning different from other procedures?

At first glance it might appear that the basic positioning principles are similar for robotic assisted and conventional laparoscopy. It is being recognized that positioning devices that have for decades proven satisfactory for use with conventional laparoscopy may need to be reconfigured / modified in order to offer greater patient safety, efficiency and utility for robotic surgery.

It has become clear that when utilizing Trendelenburg postures there are far more patient positioning risk variables for robotic surgery than for conventional laparoscopy.

The advent of robotic assisted surgery has redoubled the importance of keeping patients in a fixed position on the table during the procedure. This is especially important when the patient is placed in extreme postures. In Dr. Ghomi's paper, *Robotics in Practice: New Angles on safer positioning – Contemporary OBGYN Oct 2012*, he states "patient slippage during the use of fixed robotic trocars creates a serious potential for patient risk." He attributes the risk, not present during conventional MIS procedures, to the fact that the robot is not programmed to detect, and then compensate for, a change in patient position caused when the patient slides on the table during surgery. The outcome of having the three or four primary trocar sites eventually taking over the role of restraining the patient accounted for; "incisional tear, post-operative hernia formation, and increased postoperative pain secondary to overstretching of the anterior abdominal wall."

What guidelines are available for surgical teams to reference and where can these guidelines be improved?

Clinicians have displayed frustration that AORN has generally limited their guidelines to what not to do when positioning patients in Trendelenburg. To date, positioning guidelines dealing with

the unique risks of patient injury specifically associated with robotic surgery (relative to the use of Trendelenburg postures) have not been addressed in any depth.

There are only a few white papers describing facilities experiences with keeping patients from sliding during robotic procedures. Most are from the early days of robotics and describe the off-label use of miscellaneous materials used to restrain the patient. There are no papers performing comparative device trial studies. There is an educational void that needs to be filled as soon as possible to further reduce the risk of O.R. acquired patient positioning injuries. Industry may certainly attempt to fill the void with education but may lack credibility due to perceptions of commercial favor.

What risks are there when facilities use miscellaneous materials to position a robotic surgery patient?

In the earliest days of robotic surgery clinicians, in their quest to keep patients from sliding during robotic procedures in extreme Trendelenburg, did their best with what they had at hand. In doing so they employed a broad range of miscellaneous materials never intended to be used to restrain patients.

In many cases this resulted in patients sliding a short distance and stopping. No thought was given patients stopped sliding because they might have been being fully supported by the trocars.

The issue of patient risk and clinician liability is simple: when creating "homemade" restraint devices or using devices "off label" the clinician supersedes the most basic FDA guidelines as there is no testing, no analysis, no methodology and certainly no quality control. If, in an attempt to keep a patient from sliding on an operating room table, a clinician utilizes materials not described as being intended for that use they and each of the members of their team and the institution are fully liable for any post-operative positioning related discomfort or injury that may befall the patient.

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