Clare Tager Interview with Surgical Product News.

Patient Positioning: Education Is Key

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by by STAFF AUTHOR,
Clare Williams Tager, BSE, is the President of High Country Medical and an Educator and Consultant for Allen Medical Systems. She has worked for the past 18 years in thousands of operating rooms with OR nurses and surgeons, observing different procedures, new technologies, trends, and determining both correct and incorrect ways to position patients. "This career has afforded me a study, a mission and a passion," she says. "My profession alone has allowed, in fact demanded, that I become the strongest patient advocate that I can possibly be." Tager has designed a course to present to various AORN chapters and OR staff called 'The Art and Science of Patient Positioning'.

Surgical Products: What are some important assessments/considerations when determining how to position a surgical patient?

Tager: One of the definitive resources for this is 'Alexander's Care of the Patient in Surgery'. In this text we are advised that the practice of patient positioning "is rational and logical, grounded in knowledge of anatomy and physiology and to be approached by the perioperative nurse with a sense of urgency and intense thought".

So we need to be mindful that positioning should be based on these principles that affect outcome rather than 'we have always done it this way" or 'that's the only equipment we have'. Safe positioning requires that the surgical team compromise, collaborate, discuss, and if necessary take a time out.

The patient's weight, age, comorbidity and other intrinsic factors must be carefully examined and evaluated. AORN's newest Recommended Standards and Practices for Positioning the in the Perioperative Setting should be readily accessible to staff in every OR and used as a resource. The age of the patient and length of time on the OR table are two key factors that have been identified as determining the potential for injury.

The demographics of our patient population have changed dramatically; obese patients being the norm rather than the exception. A recent study tells us that even 1 in 4 children are clinically obese, so this problem is not going away any time soon. Consequently we can no longer safely use equipment and padding that was the standard 10 years ago. For 300 lb patients, we cannot place them on a 2" foam mattress and expect to have no pressure problems.

Studies have now shown that the standard foam mattress on OR tables does little or nothing to protect the patient from pressure. According to AORN, padding devices need to maintain a normal capillary interface pressure of 32mmhg or less. Readings as high as 150mmhg have been found to be extremely common on standard foam mattresses. Patient advocacy on the part of OR Nurses needs to extend to the assessment and selection of appropriate surfaces for the patient rather than allowing that decision to be made in the purchasing department.

From a clinical standpoint, the key is to gather as much information as possible and then to treat every single patient as one at risk for injury. In many cases our advanced technology in the OR has outstripped the system's ability to train, adapt and use it. Take for instance the positioning issues associated with the new robotics that are just now beginning to be addressed. Nurses are challenged with very difficult decisions regarding the use of the steep Trendelenburg needed for these cases. Again consciousness and dialogue are key. Patient advocacy requires raising the hard questions even when there are not clear immediate answers.

Surgical Products: Can you discuss the injuries/complications that can occur in surgical patients due to faulty positioning? How do they occur and what are the consequences for the patient?

Tager: In Gyn procedures, for example, one study showed that after patients were in lithotomy for an hour, each additional hour posted a 100 fold increase in the risk for neuropathy. This is one of the positions with the most potential for significant injury. One of the definitive lectures I have ever heard on this issue was delivered by Dr William Hurd, Professor and Chair of Wright State's Dept of OB/GYN in Dayton Ohio at an American College of Gynocologic Surgeons (ACOG) meeting. Dr Hurd advised his fellow surgeons to cease the use of candy cane stirrups and went into not only the reasons as far as liability but also the etiology of injury. He reviews nerves at risk, how they can be damaged and what the long lasting effects could be for the patient. I have a transcript of that lecture that I share as often as I can as it is not only an important but a powerful work.

A case in point that everyone can relate to is the sensation of our legs 'falling asleep'. What we think of in our daily lives as 'cutting off circulation' is actually pressure placed on our peroneal nerve to the extent that it becomes dysfunctional. Imagine having that happen during a three or four-hour case. Additionally, the Sciatic nerve runs down the length of the leg to the foot and is subject to stretching by too much flexion or hyperextension. Flexing the legs less than 45 degrees from the abdomen can cause severe pain, foot drop and loss of knee flexion, not to mention the danger associated with femoral nerve compression, extremely common with our overweight patients. This can lead to devastating consequences. Consider femoral nerve injury. What happens if a femoral nerve is injured? The main part of that nerve runs through the anterior thigh so that if you have thigh weakness you will have trouble extending your leg. Patients with this injury can't lift their thigh and have numbness all the way down to the heel. This is a fairly common injury in lithotomy and it makes normal life difficult to impossible. Nerve injury in fact can occur in just fifteen to twenty minutes, so there

is what I call the 'myth of short procedures' where staff members often don't worry as much about positioning issues as they do for long cases. We can estimate how long a case will last, but there is really no way to know how long that patient will actually be on the OR table if we take in to consideration all the potential complications.

A seminal work by Dr. John Martin and Dr. Mark Warner Positioning in Anesthesia and Surgery, a text book used in anesthesiology courses, tells us that Peripheral nerve injuries are a significant source of anesthesia related liability claims, and that the signs of denervation resulting from these positioning injuries can show up as late as eighteen to twenty-one days after the event. They note that recovery from peripheral nerve injury is often slow, taking from three to twelve months and that during that time the patient may experience constant pain and be disabled. Remember at some point these patients have to go home and fend for themselves, care for children or ageing parents, go back to work. Having to do those things in pain or not be able to do them at all as a result of having sustained a positioning or pressure injury in surgery is unacceptable. Let's also take a look another position that is considered high risk, Prone. It seems that everywhere you look these days there is a new Spine Center being set up, and spine cases as a whole have increased dramatically in recent years. Pressure and positioning issues are extremely common in prone. One OR nurse manager at a major hospital observed recently when asked about a traumatic skin injury on a veteran who had undergone back surgery, "well you know you have to expect things like that on these long cases."

This saddened me beyond words because NO we do not have to expect outcomes like this on long cases, and we should not let ourselves be lulled into complacency by assuming we can do nothing about it. Patient's lives are hanging in the balance between the need for state of the art positioning products, the economic restrictions of hospital budgets, and a mind-set that we are powerless to change things. Was that man's safety and quality of life postoperatively not worth the cost of adequate padding on the spinal frame?

There is, however, some growing and much-needed awareness; the American Society of Anesthesiologists has even set up a special task force to address perioperative blindness associated with spine surgery.

Inexpensive disposable standard foam head pieces are being used routinely. In addition to possible pressure on the optic nerve by improper placement, by not rechecking the face routinely or in conjunction with a position change, pressure injuries on the rest of the patients face can occur as well. An orthopedic surgeon in Massachusetts cited the case of a young lady whose spine surgery went well but who sustained an irreversible pressure mark on her forehead that looked like a bar code, caused by her face coming in contact with the hard glued edge of a foam block used to position her head. Plastic surgery was needed eventually to deal with her injury. Her life was altered by a $10 foam block. While there are new head positioners on the market that address pressure and positioning problems, they are

often not being used due to lack of education, lack of awareness, and frozen funding.

In addition to the potential for nerve injury, pressure injuries associated with the spine frame itself are extremely common. We are using older spinal frames with inadequate padding to accommodate extremely heavy patients and the results can be traumatic indeed. When not using a frame a common practice is to roll up blankets to be used as chest rolls. This makeshift roll can 'bunch up", form creases and create pressure points. When obese patients are placed on outdated frames that don't allow for abdominal expansion, compression on the abdomen can constrict the inferior vena cava and the aorta, compress the diaphragm and make breathing difficult. Wound care nurses are being called in to assist as again these patients are at risk for pressure ulcers that are not only life altering but life threatening. We are not practicing a very simple principle and that is PREVENTION.

Surgical Products: Are there consequences for the hospital if a patient is injured due to faulty positioning during surgery?

Tager: In addition to law suits filed by the patient and his or her attorneys, drawn-out settlements and broken lives, now we must also add a severe economic drawback. In October of last year Medicare stopped reimbursing for hospital acquired pressure injuries. The cost to a hospital for treating one pressure injury can range from $30,000 to over $100,000. As we look at hospital acquired pressure ulcers more attention is being directed to surgical patients, who account for between 20% and 30 % of all pressure injuries. These OR acquired pressure ulcers are a result of improper positioning and inadequate padding. Often I hear that old foam pads on the OR tables must be replaced in preparation for a visit from the Joint Commission. However even in these cases the least expensive (and least pressure-reducing) pads on the market are often chosen over the newer technology specifically designed for pressure management. Thirty thousand dollars could have equipped 30 OR rooms with state of the art pads that easily might have saved that hospital the expense of treating one pressure ulcer, not to mention preventing the patient pain and suffering.

The National Pressure Ulcer advisory panel (NPUAP) , website www.npaup.org is an excellent resource as is the Wound Ostomy and Continence Nurses Society www.woch.org It is imperative that OR nurses begin to communicate with Wound Care, Risk Management, ICU and even the nursing floors to start tracing steps back to the origin of this problem and come up with a joint effort to develop and implement solutions. All of these departments have more influence as a team in approaching hospital administration for pressure management funding than just one department on its own.

Surgical Products: Are you able to provide data about how often injury due to faulty positioning occurs in patients?

Tager: Fortunately with the involvement of the two groups listed above we do now have introductory statistics and data on the incidents of pressure ulcer formation

both in the OR and in the hospital at large. Half the battle is not only acknowledging the problem but embarking upon the lengthy process of dissecting it and seeking solutions.

far as other positioning related injuries I refer to Dr John Lincoln in 'Complications Related to Body Postions During Surgery'. He says "The sequale of improper positioning may be temporarily discomforting, permanently disabling or may terminate in the death of the patient … the sporadic reporting of such accidents in the medical literature makes one suspect that many more accidents occur but fail to be reported. There are no reliable statistical data to reveal the incidence of complications related to body position during surgery."

Once a settlement is reached regarding a hospital-acquired injury the patient invariably signs an agreement that no publicity about the case will be allowed. This cloak of silence damages the potential for real change to be instituted to prevent these injuries or to reveal how much more it costs to treat them than prevent them.

Would you be able to provide any anecdotes from your experiences in the OR about patient injuries or complications due to positioning?

Tager: There is enough material for a book on this topic. The anecdotes I hear most often are from nurses who have either themselves been injured during a procedure or know of a family members who have.

** A 29-year-old PE Teacher goes in for a routine GYN procedure. She is a single mom and has two young children and no other family to help her. She expected to be off work for only two days but ten days later left the hospital on a walker. She is not likely to be impressed by the comment 'it is OK to use candy cane stirrups because our patients are not up there in them very long'. This patient painfully experienced the fact that less than thirty minutes of nerve compression can cause either temporary or permanent injury. The effects on patients like this cannot be minimized; pain, trauma, fear, children left unattended, financial crisis, potential loss of work, potential loss of a healthy functioning life.

**A 50-year-old overweight gentleman goes in for a cysto procedure He thought he would be discharged that same day, but he is kept for over a week with a nerve injury manifesting as reduced flexion in his right foot, no feeling in his toes and numbness on the lateral aspect of his foot and back of calf, He has physical therapy but still leaves the hospital walking with a cane. He is the sole breadwinner for his family, working in a hardware store long hours. His wife is disabled and he is her sole caregiver. ** A breast cancer patient who had to have a bilateral mastectomy later underwent reconstructive surgery involving implants. Last year she had to have spine surgery for a herniated disc. In prone, with unrelieved pressure on her reconstructed breast, her implants ruptured. Instead of feeling recovered from the cancer she is set back to more years of physical and psychological suffering. **The most recent story I heard from a nurse at AORN this year still haunts me. Another breast cancer patient undergoing a bilateral mastectomy

sustained a brachial plexus injury during surgery. After losing her breasts, she finds in recovery that she has lost the use of both her arms and six months into therapy still cannot feed herself or do the most simple tasks on her own.

These cases all share something in common….extrinsic factors in the OR. Nerves may have been compressed against a stirrup post, hips awkwardly rotated, muscles stretched in the groin, someone on the surgical team may have rested against a patients knee covered by a drape, someone may have leaned inwardly against a patients arm, arms were canted out at a greater than 90 degree angle. They all share another feature; they are all, for the most part, preventable.

Surgical Products: What types of technologies/products are important in patient positioning?

Tager: One of the most significant breakthroughs in lithotomy positioning products came in the early 1980's when Dan Allen invented and introduced the Allen Universal Stirrups.

Since that time Boot Type stirrups have become the gold standard in positioning for GYN, Urology and General Surgery. Millions of patients around the globe now have had the benefit of a protective passive resting place for the legs, and subsequent safety and comfort during a surgical procedure.

For Spinal surgery a new frame is on the market with extensive pressure mapping having been done in developing the padding system. Hydraulic Beach Chairs are offered by several companies for shoulder arthoscopies, again with the heavy patient in mind and the danger of back injuries on the part of staff trying to lift them."Lift assist' is a key word in the development of any positioning product.

Positioning equipment should be up to date, checked routinely to insure that it is fully functional, and weight tested to the patient being received. Unfortunately, even in 2009 with all our innovative technology in the OR, worn-out equipment including stirrups that are no longer safe are routinely still in service. The common refrain that 'we have no money for new positioning equipment' is cold comfort for injured patients and their families. Patient safety issues MUST be brought back to the forefront of hospital practices.

One type of stirrup on the market that has been proven to be dangerous in any situation is the ever-present CANDY CANE stirrup. While they are still being sold, no company promotes them, on never sees them exhibited at AORN, no papers are written to defend their use and the evidence is overwhelming in condemning them as unsafe. They are the equipment room closet secret and many nurses have staked their jobs on getting them out of the OR.

The candy cane is a metal rod with a sling on it, not a positioning device. Why are they still being used? The answer usually is 'because we have always used them' or 'because they are less expensive'. The horror stories I hear about injuries in candy canes are myriad, and I continue to share them with anyone who will listen. If I can

accomplish one thing in my professional life it will be to stop the injuries occurring to unsuspecting patients whose legs are being literally hung unsupported with uncontrolled abduction in candy cane stirrups! Postoperative backache and nerve injury should not be an acceptable outcome of GYN surgery.

Surgical Products: Finally, if you had to choose a few key takeaway points related to patient positioning our readers should always remember, what would they be?

Tager: The most sacred duty of an OR nurse is to be a voice for the voiceless. The fact that OR nurses do not often hear about patient positioning injuries that show up in recovery , ICU, or even once they are home, does not absolve the hospital of the responsibility for preventing them. Be knowledgeable, be conscious, be vigilant and speak up when your advocacy is needed for that anesthetized patient who is on the table. He or she is someone's mom, dad, husband, wife or child and their life is being altered for good or ill while in surgery and under your care.

Surgical Products: Anything else you would like to add?

Tager: We know the effects the recession has had on the health care industry; many top hospitals have lost millions in investments and have used this to justify not purchasing up-to-date capital equipment and shutting down education budgets. It is a little disconcerting, however, to enter a large medical complex with a marble foyer or undergoing a multi-million dollar expansion and be told that they must continue using unsafe equipment to save money or eliminate in-service education time for staff so they can use that OR time to add on more cases.

Education is the key by which we unlock the door to prevention. We are accountable for the life of the OR patients not only while they are on the table but postoperatively on their journey toward recovery.