

Back to Basics: Positioning the Patient

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Purpose/Goal

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1. Discuss common areas of concern that relate to perioperative best practices.
2. Discuss best practices that could enhance safety in the perioperative area.
3. Describe implementation of evidence-based practice in relation to perioperative nursing care.

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ABSTRACT

Positioning the surgical patient requires special attention from the entire surgical team because anesthetized or sedated patients are not able to reposition themselves when needed to relieve discomfort or alert team members of the need for repositioning. Perioperative nurses must pay attention to positioning details and the possibility of injury at all times during the patient's procedure. This includes assessing the patient's circulatory, respiratory, integumentary, musculoskeletal, and neurological structures to help ensure that the patient is properly positioned and safe from injury. Working as a member of the surgical team, the perioperative RN is key to speaking up when positioning issues need to be addressed and helping to minimize the risk of injury to the patient. This "Back to Basics" article discusses positioning the patient in the prone position. *AORN J* 100 (September 2014) 299-303. © AORN, Inc, 2014. <http://dx.doi.org/10.1016/j.aorn.2014.06.004>

Key words: *positioning, surgical positions, prone position, intraoperative injury, pressure ulcers.*

Positioning the surgical patient is perhaps one of the most basic concepts that perioperative nurses must understand and incorporate into daily practice. Positioning the patient requires a coordinated effort by the entire perioperative team. It requires special attention, because anesthetized or sedated patients are not able to reposition themselves when needed, and perioperative nurses must pay attention to detail and the possibility of injury at any time during the patient's procedure. In addition to details such as ensuring the patient is correctly positioned and protected from injury, perioperative nurses also must assess the patient's circulatory, respiratory, integumentary, musculoskeletal, and neurological structures during

positioning. Working as a member of the team, the perioperative RN is key to monitoring the process, speaking up when positioning issues need to be addressed, and minimizing the risk of injury to the patient.¹ This article will revisit the basics of placing the patient in the prone position and provide additional resources for perioperative nurses to safely care for patients regardless of the position required. A full discussion of all surgical positions is outside the scope of this article, so the prone position is used as an example.

POSITIONING

As technology increases, surgical procedures and their requirements change. New types of surgery,

such as robotics and minimally invasive surgery, pose unique challenges to positioning the patient safely and providing adequate access to the surgical site. Because of the challenging nature of positioning the surgical patient, it is important to follow national guidelines and recommendations and document what is done. There has not been a wealth of new research on positioning injuries published recently, but there are examples in the literature. For example, Murphy² presented a review of three cases in which nurses and perioperative personnel were implicated in a post-operative injury related to positioning. None of the perioperative team members were found negligent in these cases, however, because the plaintiffs failed to show that the perioperative team had breached the standards of care with regard to positioning.²

Subsequently, Sutton et al³ presented a quality improvement project that examined the challenges faced when placing patients in lithotomy and steep Trendelenburg positions during robotic-assisted surgery. These researchers looked at different techniques to help ensure patient safety and adequate surgical site visibility. The authors concluded that perioperative nurses should combine basic positioning principles with the special needs of certain patient groups (eg, neonates, patients with arthritis) to prevent patient injury during surgery.³ Quality improvement projects should be undertaken when new and challenging positioning issues are faced.

HOW-TO GUIDE

Surgical team members, including the perioperative RN, should ensure that all patients are correctly positioned. The goals of positioning include

- providing adequate exposure of the surgical site;
- maintaining patient dignity by avoiding undue exposure;
- allowing for optimum ventilation by maintaining a patent airway and avoiding constriction or pressure on the chest;
- providing adequate access to IV lines and monitoring equipment, keeping in mind that the anesthesia professional must assess urinary output, blood loss, and irrigation use and that visibility

of measuring devices and drainage bags should be incorporated into the positioning plan;

- avoiding poor perfusion;
- observing and protecting the patient's fingers, toes, and genitals;
- maintaining circulation; and
- protecting muscles, nerves, and bony prominences from pressure injury.¹

Although the choice of position for a particular procedure ultimately rests with the surgeon, the decision should be made in collaboration with the anesthesia professional, perioperative RN, and other appropriate members of the surgical team (eg, first assistant). As an advocate for the patient, the perioperative RN should question any chosen position if he or she believes it may compromise the patient's safety.

The prone position is perhaps one of the most challenging in which perioperative team members must position patients. This position requires coordination among team members, and particular attention must be paid to safety. The added challenge is that most patients are intubated and under general anesthesia when they are placed in this position. Test your knowledge about prone positioning by reviewing [Figure 1](#) and identifying what is wrong with the picture. There are several important considerations for the perioperative team in placing a patient in the prone position (view [Supplementary Video 1](#) at <http://www.aornjournal.org>). Injuries that patients may sustain while in the prone position can include

- corneal abrasions and ocular damage;
- respiratory compromise because of compression of the abdomen; and
- pressure ulcers on the abdomen, breasts, genitalia, knees, and toes.

BENEFITS

There are several benefits from ensuring the patient is properly positioned. The most important benefit of proper positioning is protecting the patient from injury. Patients rarely understand or think about

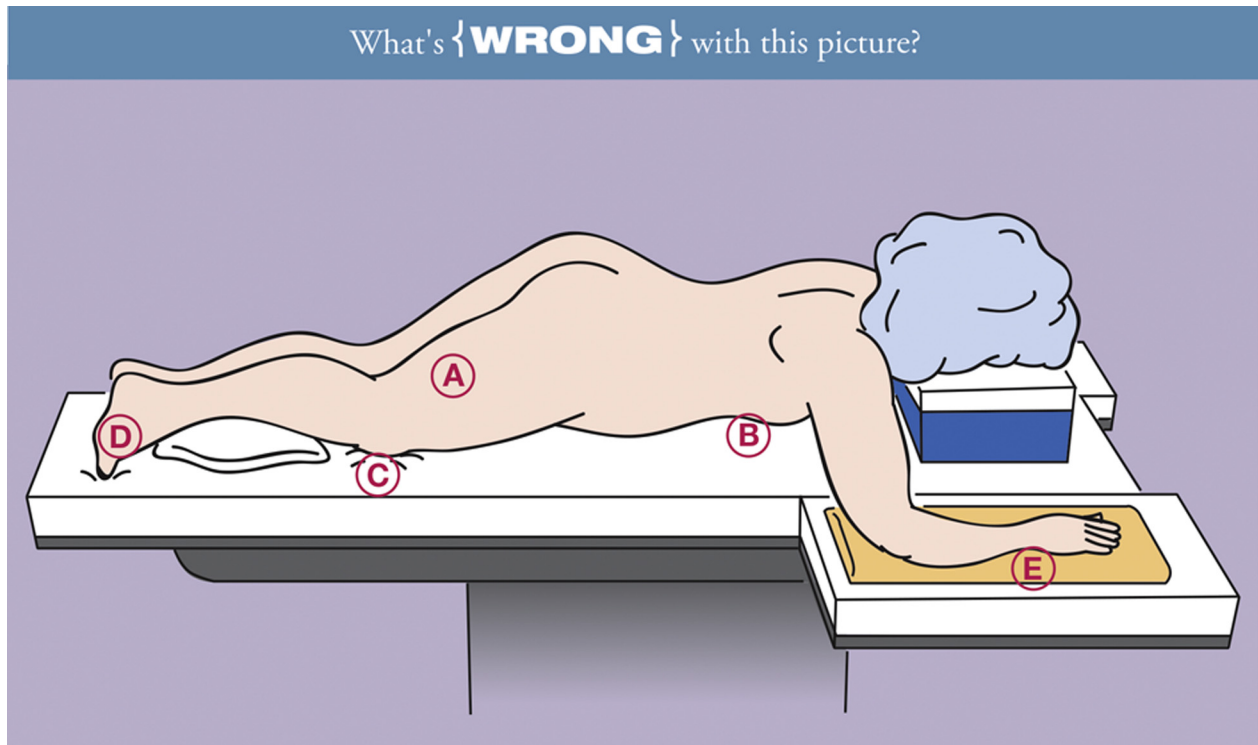


Figure 1. This position is wrong because (A) there is no safety belt on the patient, (B) there are no chest rolls, (C) there is no padding under the patient's knees, (D) the patient's toes are touching the OR bed, and (E) the patient's arm is not secured to the arm boards. *What's Wrong With This Picture?* printed with permission from AORN, Inc, Denver, CO. Copyright © 2014. All rights reserved. Illustration by Kurt Jones.

what position they will be in during surgery and do not contemplate the potential for positioning injury as a result of surgery. Most importantly, because of sedation or general anesthesia, they are unable to monitor or change their position if it becomes painful or unpleasant. The perioperative RN, therefore, must be the voice of the patient and the patient's advocate. Following national guidelines and best practices for positioning^{1,4,5} will provide nurses with confidence that they are providing patients with the best possible care, helping to protect patients from injury, and protecting themselves from possible litigation if a postoperative injury occurs.

In addition to protecting the patient, correct positioning allows the surgical team to access the surgical site and have the exposure that is needed to perform the procedure. At the same time, correct positioning allows the anesthesia professional to adequately ventilate and provide for patient needs

that arise as a result of surgery, thus providing the care patients have a right to expect.

STRATEGIES FOR SUCCESS

Ideally, surgical positioning should not result in an injury to the patient. To help ensure that this is the case, perioperative RNs can use certain strategies to succeed in their efforts to protect their patients. One strategy for ensuring successful positioning is for the perioperative nurse to work collaboratively with the surgeon and anesthesia professional.¹ Education and competency verification are other tactics to help ensure that perioperative personnel understand how to correctly position patients and receive information on any new positioning equipment or procedures.¹ When positioning the patient in the prone position, the perioperative RN should take measures to prevent positioning injury, document all actions taken with regard to positioning,

and assess the patient for any signs of injury postoperatively.

Preventing Injury

The perioperative nurse should monitor that the patient's eyes are protected (eg, avoid pressure on the eyes, avoid using a horseshoe headrest) and assess the patient regularly. Direct pressure on the eyes, coupled with natural systemic hypotension from anesthesia, can cause central retinal artery occlusion, which can result in temporary or permanent blindness.¹ The nurse should be aware of the following risk factors for eye injuries⁶:

- the use of the prone position,
- the length of the procedure (ie, procedures lasting longer than 6.5 hours), and
- significant blood loss during the procedure.¹

Placing a headrest under the patient's head provides for airway access and helps prevent injury to the eyes. In addition,

- the patient's forehead and chin should be protected from excessive pressure (eg, by using a padded headrest), and
- cervical neck alignment should be maintained: the patient's head should be positioned in a neutral forward position without significant neck flexion, extension, or rotation.¹

Placing two large chest rolls from the patient's clavicle to the iliac crest raises the weight of the body off of the abdomen and thorax and allows the diaphragm to move freely and the lungs to expand.¹ In addition to using chest rolls, the following measures should be taken to prevent additional injuries:

- Female breasts can be moved laterally off of the chest rolls to reduce pressure on them; however, soft ventral supports on the lateral sides of the breasts, diverting the breasts toward the midline, are generally better tolerated.
- Male genitalia should be free from pressure.
- Pendulous skin folds should not be trapped under the patient in any manner.

- Padding should be provided to protect the patient's knees.
- The patient's toes should be positioned so that they are elevated off the bed by placing padding under the patient's shins.⁷

In placing the patient in the prone position, the perioperative RN should ensure the following:

- The patient's arms should be placed at his or her sides or on arm boards placed at less than a 90-degree angle at the shoulder with elbows flexed and palms facing downward.
- Hands and wrists should be kept in normal alignment.
- Placing the patient's arms above his or her head should be avoided to minimize the risk of brachial plexus stretch injury.
- A stretcher or transport cart should be immediately available for emergency repositioning into the supine position for cardiopulmonary resuscitation should the need arise.¹

Documentation

Interventions related to positioning should be documented. Documenting nursing activities provides a description of the perioperative nursing care administered, status of patient outcomes on transfer, and information for continuity of patient care.¹ At a minimum, the following information should be documented:

- the preoperative assessment;
- the names and titles of the people who participated in positioning the patient;
- the patient's position throughout the surgical procedure;
- the position of the patient's arms (eg, placed on arm boards at < 90 degrees with palms down);
- the position of the patient's lower extremities;
- the types and location of positioning equipment;
- any use of padding (eg, when it was used, type, location);
- specific actions taken during the surgical procedure to prevent patient injury, especially

actions taken in response to the preoperative assessment;

- repositioning activities undertaken during the course of the procedure;
- the postoperative assessment; and
- any change made to the patient's position during the intraoperative period (ie, this should occur to avoid continued pressure on the same areas during the procedure).¹

Postoperative Assessment

During the postoperative period, it is essential for the nurse to assess the patient for skin and musculoskeletal injury. At the conclusion of the surgical procedure, the perioperative RN should assess the patient for signs of intraoperative injury and should closely inspect for any areas identified during the preoperative assessment as being at high risk for injury. Results of the postoperative assessment should be included in the transfer-of-care report to the postanesthesia care unit RN.

WRAP-UP

This article has focused on the prone position because it is a challenging position in which to place the patient. AORN's recommended practices for patient positioning gives detailed strategies for the prone position as well as other common surgical positions.¹ Equal attention should be given to any patient positioning requirements, and the safety principles for each should be followed. Additional attention should be given to positions required during special circumstances, such as robotic-assisted surgery. Following the basic guidelines for patient positioning will help perioperative RNs be sure

that they are providing the safest patient care and preventing the risk of injury.^{6,7}

SUPPLEMENTARY DATA

The supplementary video associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.aorn.2014.06.004>. **AORN**

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Check back in November 2014 for the next "Back to Basics" topic: Checklists.

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PURPOSE/GOAL

To provide the learner with knowledge specific to positioning the patient in the prone position and preventing positioning injuries.

OBJECTIVES

1. Discuss common areas of concern that relate to perioperative best practices.
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3. Describe implementation of evidence-based practice in relation to perioperative nursing care.

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QUESTIONS

1. In addition to details such as ensuring the patient is correctly positioned and protected from injury, perioperative nurses also must assess the patient's _____ structures during positioning.
 1. circulatory
 2. respiratory
 3. integumentary
 4. musculoskeletal
 5. neurological
 - a. 1 and 3
 - b. 2 and 4
 - c. 1, 2, and 4
 - d. 1, 2, 3, 4, and 5
2. Perioperative nurses should combine basic positioning principles with the special needs of certain patient groups to prevent patient injury during surgery.
 - a. true
 - b. false
3. The prone position is one of the most challenging in which perioperative team members must position patients because
 1. it requires coordination among team members.
 2. most patients are given local anesthesia and sedation when they are placed into this position.
 3. most patients are intubated and under general anesthesia when they are placed into this position.
 - a. 1 and 3
 - b. 1 and 2
 - c. 1, 2, and 3
4. When the patient is in the prone position, risks for eye injuries include
 1. direct pressure on the eyes.
 2. systemic hypotension from anesthesia.
 3. significant blood loss during the procedure.
 4. procedures lasting more than two hours.
 5. central retinal artery occlusion.
 - a. 1 and 5
 - b. 2, 3, and 4
 - c. 1, 2, 3, and 5
 - d. 1, 2, 3, 4, and 5
5. When positioning the patient in the prone position, placing two large axillary rolls raises the weight of the body off of the abdomen and thorax and allows the diaphragm to move freely and the lungs to expand.
 - a. true
 - b. false

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OBJECTIVES

To what extent were the following objectives of this continuing education program achieved?

1. Discuss common areas of concern that relate to perioperative best practices.
Low 1. 2. 3. 4. 5. High
2. Discuss best practices that could enhance safety in the perioperative area.
Low 1. 2. 3. 4. 5. High
3. Describe implementation of evidence-based practice in relation to perioperative nursing care.
Low 1. 2. 3. 4. 5. High

CONTENT

4. To what extent did this article increase your knowledge of the subject matter?
Low 1. 2. 3. 4. 5. High
5. To what extent were your individual objectives met?
Low 1. 2. 3. 4. 5. High
6. Will you be able to use the information from this article in your work setting? *1. Yes 2. No*

7. Will you change your practice as a result of reading this article? (If yes, answer question #7A. If no, answer question #7B.)

7A. How will you change your practice? (*Select all that apply*)

1. I will provide education to my team regarding why change is needed.
2. I will work with management to change/ implement a policy and procedure.
3. I will plan an informational meeting with physicians to seek their input and acceptance of the need for change.
4. I will implement change and evaluate the effect of the change at regular intervals until the change is incorporated as best practice.
5. Other: _____

7B. If you will not change your practice as a result of reading this article, why? (*Select all that apply*)

1. The content of the article is not relevant to my practice.
2. I do not have enough time to teach others about the purpose of the needed change.
3. I do not have management support to make a change.
4. Other: _____
8. Our accrediting body requires that we verify the time you needed to complete the 1.1 continuing education contact hour (66-minute) program: _____