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# **GUIDELINE IMPLEMENTATION : POSITIONING THE PATIENT**

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**AORN คือ องค์กร THE ASSOCIATION OF PERIOPERATIVE  
REGISTERED NURSES  
(สมาคมพยาบาลห้องผ่าตัดนานาชาติ)**

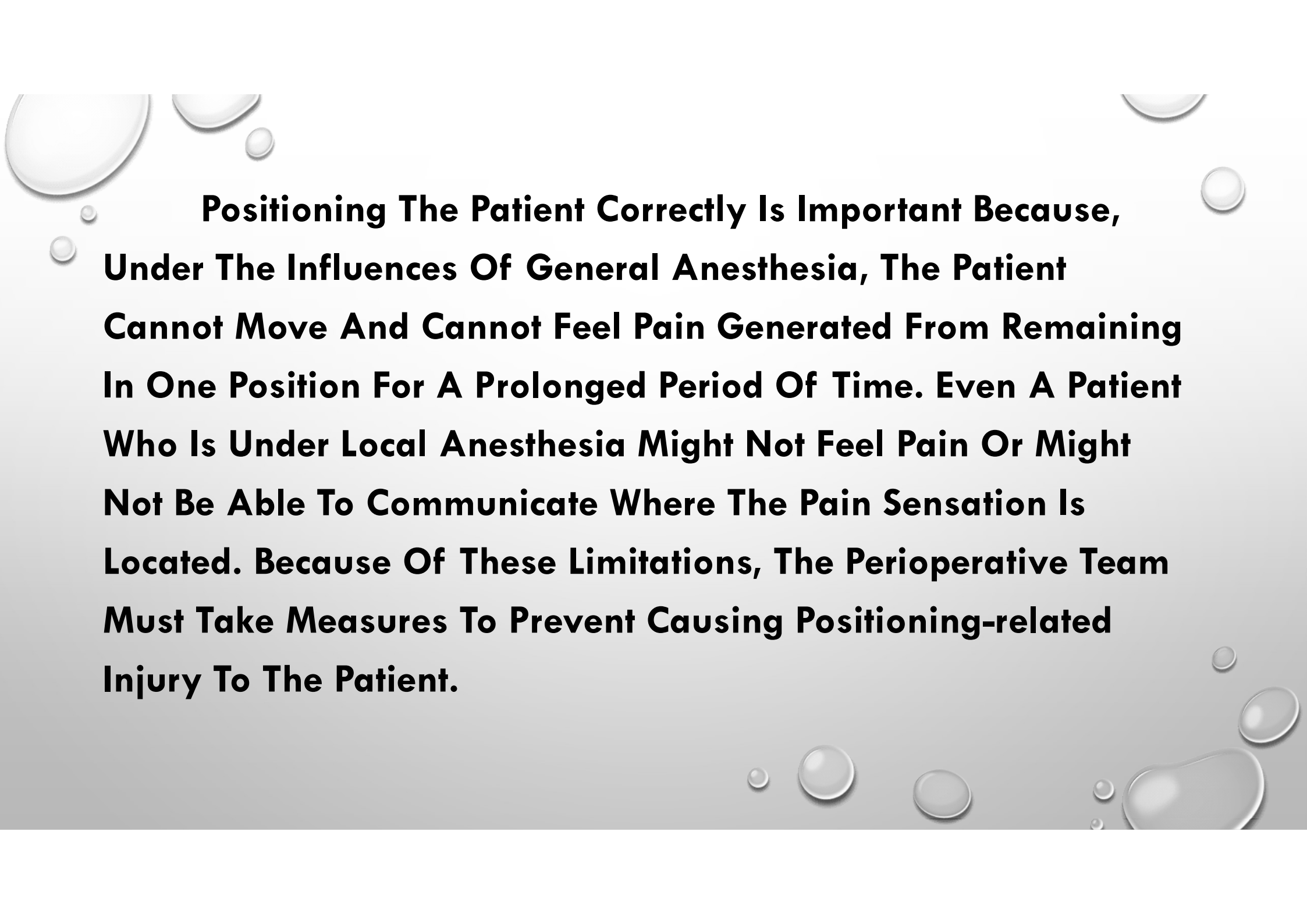


# ABSTRACT

**Every Surgical Procedure Requires Positioning The Patient; All Surgical Positions Are Associated With The Potential For The Patient To Experience A Potential Injuries.**

**This Article Focuses On The Key Points Of The Guideline Covering The Use Of Prophylactic Dressings, Neurophysiological Monitoring, And Safely Positioning The Patient In The Supine And Prone Positions. Perioperative RNs Should Review The Complete Guideline For Additional Information And For When Writing And Updating Policies And Procedures.**





**Positioning The Patient Correctly Is Important Because, Under The Influences Of General Anesthesia, The Patient Cannot Move And Cannot Feel Pain Generated From Remaining In One Position For A Prolonged Period Of Time. Even A Patient Who Is Under Local Anesthesia Might Not Feel Pain Or Might Not Be Able To Communicate Where The Pain Sensation Is Located. Because Of These Limitations, The Perioperative Team Must Take Measures To Prevent Causing Positioning-related Injury To The Patient.**

**Patient Positioning Is A Team Effort Involving The Anesthesia Professional, The RN Circulator, The Scrubbed Personnel, And Ancillary Personal Who May Be Needed Based On The Size, Condition (Eg, Inability To Assist With Movement), Or Intended Position Of The Patient. Having An Adequate Number Of Personnel To Position The Patient Helps Maintain The Patient's Physiologic Alignment, Support The Patient's Extremities, And Protect The Team Members From Musculoskeletal Injuries That Can Occur From Exerting Lifting, Pushing, And Pulling Forces During Positioning.**

- **Provide Exposure Of The Surgical Site;**
- **Maintain The Patient's Comfort And Privacy;**
- **Provide Access To IV Lines And Monitoring Equipment;**
- **Allow For Optimal Ventilation;**
- **Maintain Circulation;**
- **Protect Finger, Toes, Genitals, Muscles, Nerves, Bony Prominences, Joints, Skin, And Vital Organs From Injury; And**
- **Stabilize The Patient To Prevent Unintended Shifting Or Movement.**

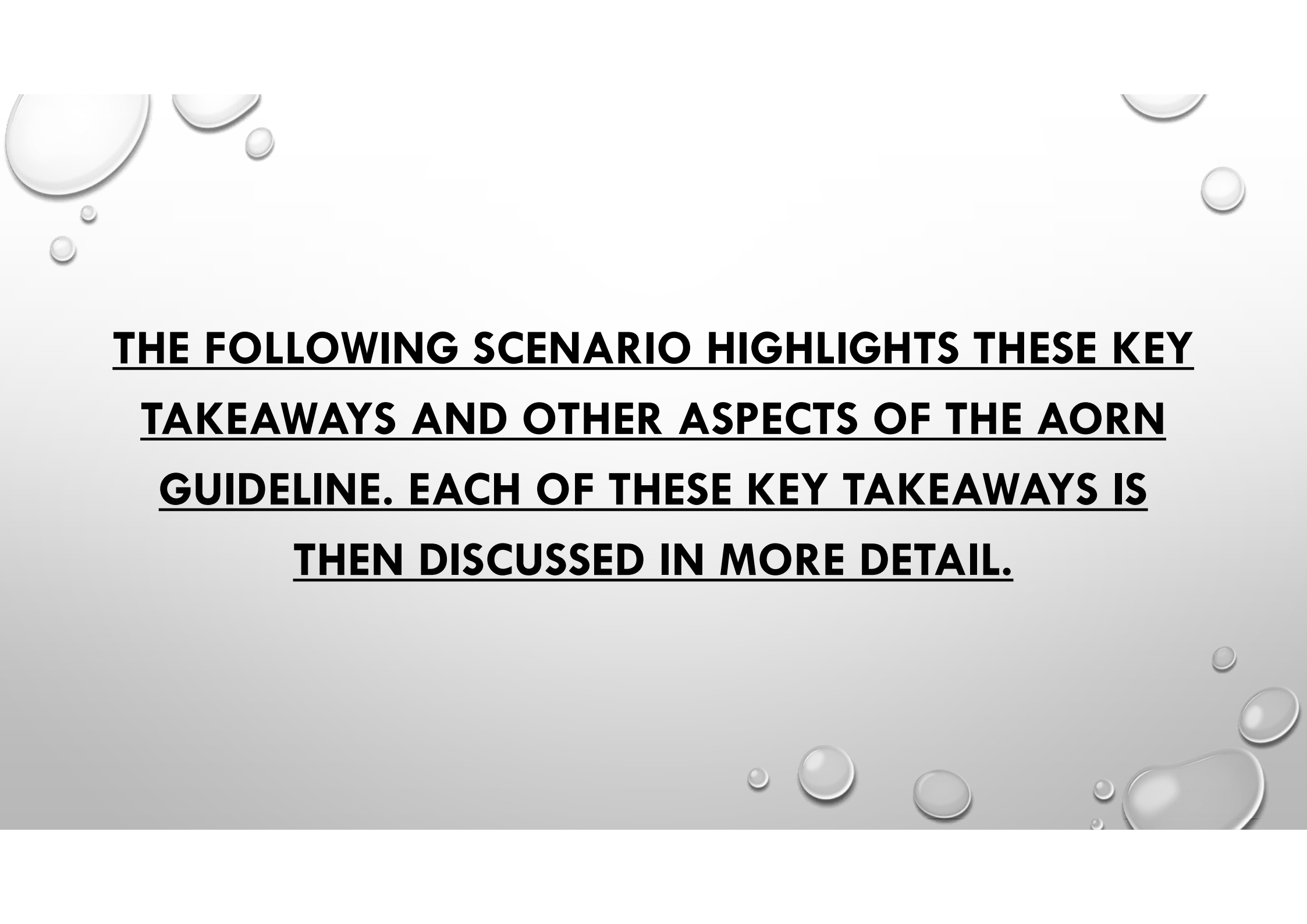
# **AORN'S "GUIDELINE FOR POSITIONING THE PATIENT" WAS UPDATED IN MAY OF 2017**

- **Conducting A Preoperative Assessment To Identify Risk For Positioning Injuries;**
- **Identifying, Selecting, Maintaining, And Using Positioning Equipment And Devices, Including Pressure-redistributing Support Surfaces And Prophylactic Dressing To Prevent Pressure Injury;**
- **Implementing Safe Practices For Positioning Patients In The Supine, Trendelenburg, Reverse Trendelenburg, Lithotomy, Sitting And Semi Sitting Lateral, And Prone Positions And Modifications Of These Positions;**
- **Taking Specific Precautions When Positioning Patients Who Are Pregnant Or Obese; And**
- **Conducting A Postoperative Assessment To Identify Whether A Positioning Injury Has Occurred.**

**This Article Elaborates On Four Key Takeaway From The Guideline Document; However, Perioperative RNs Should Review The Complete Guideline For Additional Information And For Guidance When Writing And Updating Policies And Procedures.**

**Key Takeaways From Aorn's "Guideline For Positioning The Patient" Include The Following:**

- **Prophylactic Dressing May Be Applied To Bony Prominences (Eg. Heels, Sacrum) Or Other Areas Subjected To Pressure, Friction, And Shear.**
- **Neurophysiological Monitoring May Be Used Intraoperatively To Identify Potential Positioning Injuries.**
- **The Patient Should Be In The Prone Positions For The Shortest Time Possible And Should Be Positioned In 5-degree To 10-degree Reverse Trendelenburg, If Possible.**
- **In The Supine Position, The Patient's Knees Should Be Flexed Approximately 5 Degrees To 10 Degrees, And The Patient's Heel Should Be Elevated Off The Underlying Surface Using A Heel-suspension Device.**



**THE FOLLOWING SCENARIO HIGHLIGHTS THESE KEY  
TAKEAWAYS AND OTHER ASPECTS OF THE AORN  
GUIDELINE. EACH OF THESE KEY TAKEAWAYS IS  
THEN DISCUSSED IN MORE DETAIL.**



## **SCENARIO**

**A 60-year-old Woman Is Admitted To The Emergency Department After A Motor Vehicle Accident. The Patient Is Diagnosed With A Compound Fracture Of The Left Tibia And Fibula And A Stable Fracture Of The Third Lumbar Vertebrae. The Emergency Department Personnel Contact An Orthopedic Surgeon For A Consult. After Assessing The Patient, The Surgeon Calls The Surgery Scheduler To Request That An Open Reduction Internal Fixation Of The Lag Fracture And A Laminectomy To Repair The Spinal Fracture Be Placed On The Schedule For The Day.**

**The Assigned Rn Circulator Completes A Patient Assessment. The Patient Is 5 Ft Tall, Weighs 110 Lb, And Has Very Frail Skin, But Is Otherwise In Good Health. Her Vital Signs Are Stable And Her Temperature Is Within The Normothermic Range. The Patient Is Awake, Alert, And Oriented With No Neurological Deficits. There Is An IV In Her Right Hand, And The Fractured Left Lower Leg Is In A Stabilizing Dressing.**

**After Completing The Assessment, The RN Circulator Confers With The Members Of The Perioperative Team, Including The Surgeon, RN First Assistant (RNFA), Anesthesia Professional, And Scrub Person To Determine A Plan Of Action For This Procedure. The RN Circulator Shares The Information Gathered During The Assessment, Including The Patient's Skin Condition, With The Team. The Team Decides That The Spinal Fracture Will Be Repaired With The Patient In The Prone Position Followed By The Open Reduction Internal Fixation Of The Leg Fracture In The Supine Position. The Surgeons Estimate The Repair Of The Vertebrae Will Take Two Hours. The Team Also Determines That A Prophylactic Dressing Will Be Applied To The Potential Pressure Points (Ie. Heels, Elbows, Knees, And Sacrum) To Help Protect The Patient's Delicate Skin. The Procedure Is Scheduled To Be Performed In OR 1 Because The Bed In That Room Has A New Mattress With A Special Pressure-redistributing Support Surface.**

**With The Assistance Of The Scrub Person, The RN Circulator Gathers The Equipment And Supplies Needed For The Procedure, Including The Short Chest Rolls, Face Positioner, Pillows, Neurophysiological Monitoring Equipment, Safety Strap, Prophylactic Dressings, And A Heel-suspension Device. The Transport Personnel Bring The Patient To The OR. The Anesthesia Professional Lubricates The Patient's Eyes And Then Tapes Them Closed. The RN Circulator Places The Prophylactic Dressing On The Pressure Points Including The Knees And The Elbows.**

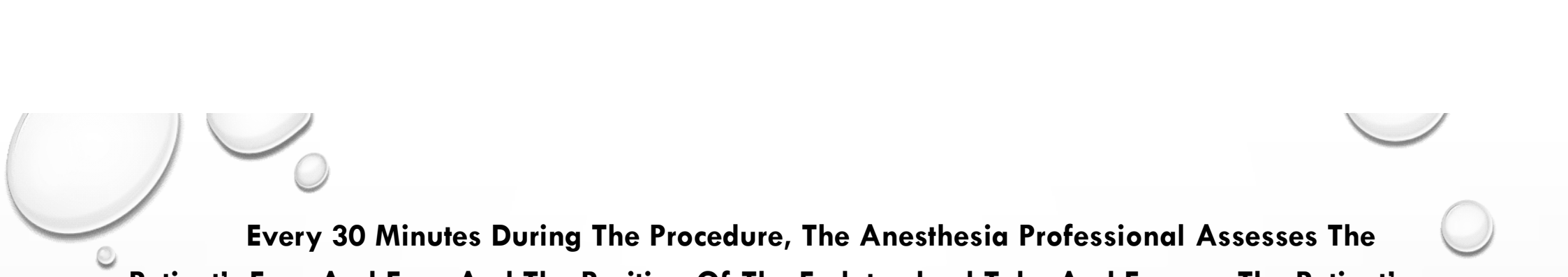
**The RN Circulator, Anesthesia Professional, Rnfa, Surgeon, And A Nursing Assistant Transfer The Patient From The Gurney To The Or Bed And Place Her In The Prone Position, Ensuring That No Part Of Her Body Is In Contact With Any Of The Metal Portions Of The Or Bed. The RN Circulator Then Moves To The Head Of The Bed To Assist The Anesthesia Professional With Positioning The Patient's Head In A Neutral Position On The Face Positioner Without Causing Excessive Flexion, Extension, Or Rotation Of The Patient's Head. Simultaneously, The Surgeon And The RNFA Each Confirm That The Chest Rolls On Their Side Of The OR Bed Are Positioned So There Is No Pressure On The Patient's Breasts And Abdomen. Next, They Position The Patient's Arms On Padded Arm Boards Parallel To The OR Bed With The Patient's Palms In The Neutral Position And Confirm That The IV Site Is Not Creating A Pressure Point.**

**The RN Circulator Elevates The Patient's Toes Off The Bed By Placing A Pillow Under**

**The Patient's Shins And Padding Under The Knees, Taking Extra Care With The Fractured Leg.**

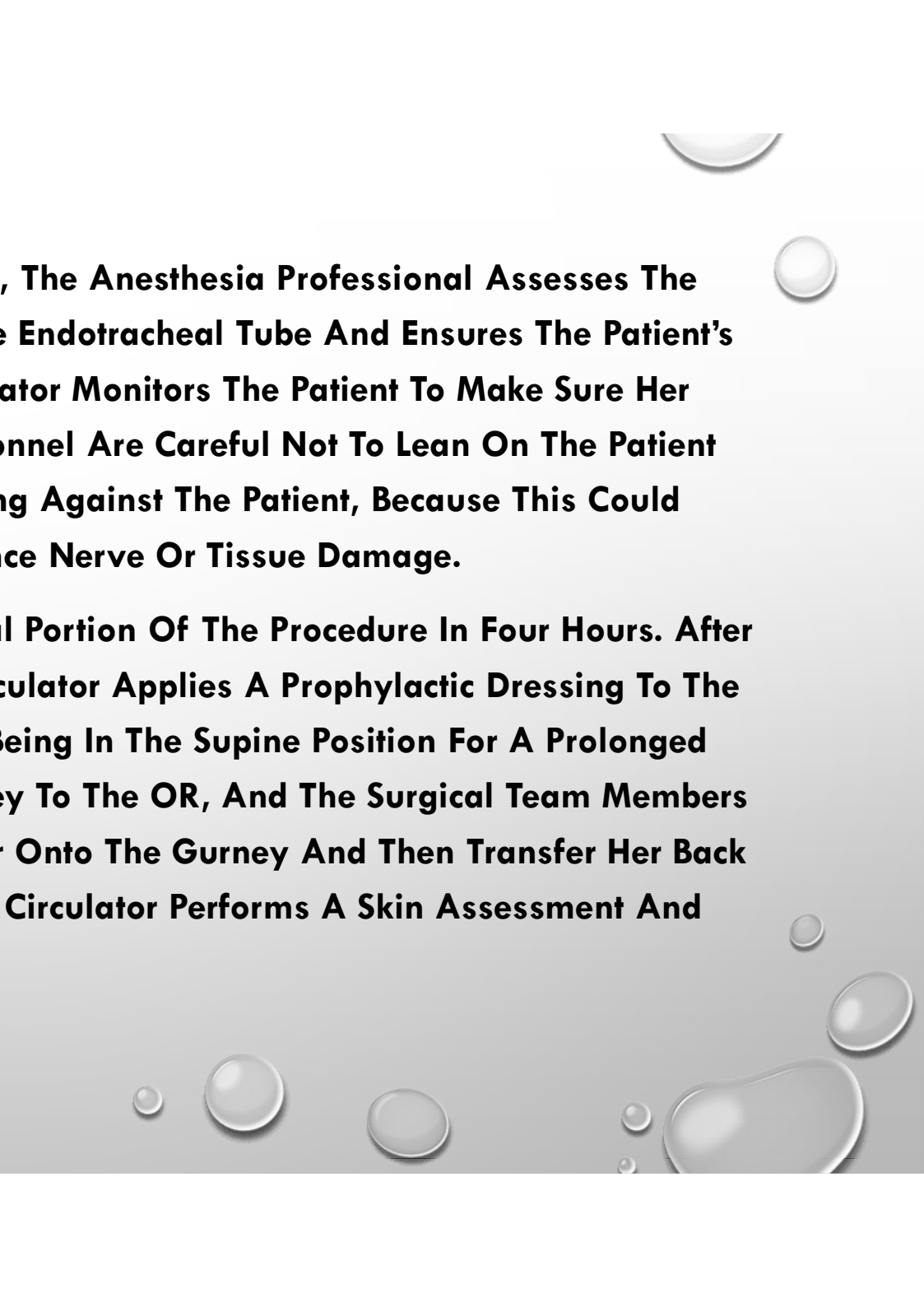
**The RN Circulator Then Applies The Safety Strap Over The Patient's Thighs, Taking Care Not To Apply Pressure, Especially To The Injured Leg. The Anesthesia Professional Manipulates The OR Bed Into Position, Including 5 Degrees Of Reverse Trendelenburg. The RN Circulators Confirms The Padding Devices Are Still In Alignment, And The Anesthesia Professional Confirms The Patient's Head Is Still Correctly Positioned On The Face Positioner. The Neurophysiologist Places The Neurophysiological Monitoring Device On The Patient's Arms. The Nursing Assistant Moves The Gurney Outside The OR Door To Be Used To Transfer The Patient To The Supine Position For The Second Portion Of The Procedure And To Be Available In Case Of An Emergency.**

**The Rn Circulator Preps The Patient, And The Surgeon And The Rnfa Apply The Drapes. During The Time Out, The Team Confirms The Patient's Identity; The Planned Procedures; The Surgical Sites; And The Availability Of Needed Items, Including The Required Positioning Devices For The Second Portion Of The Procedure.**



**Every 30 Minutes During The Procedure, The Anesthesia Professional Assesses The Patient's Face And Eyes And The Position Of The Endotracheal Tube And Ensures The Patient's Head Is Still In A Neutral Position. The RN Circulator Monitors The Patient To Make Sure Her Body Remains In Alignment. The Scrubbed Personnel Are Careful Not To Lean On The Patient And Ensure No Equipment Or Devices Are Resting Against The Patient, Because This Could Increase The Risk That The Patient Will Experience Nerve Or Tissue Damage.**

**The Surgical Team Completes The Spinal Portion Of The Procedure In Four Hours. After Applying The Surgical Site Dressing, The RN Circulator Applies A Prophylactic Dressing To The Patient's Sacrum In Anticipation Of The Patient Being In The Supine Position For A Prolonged Period. The Nursing Assistant Returns The Gurney To The OR, And The Surgical Team Members And The Nursing Assistant Roll The Patient Over Onto The Gurney And Then Transfer Her Back To The OR Bed Into The Supine Position. The RN Circulator Performs A Skin Assessment And Finds No Reddened Areas Or Facial Edema.**



**The Surgeon And The RNFA Place The Patient's Arms On Padded Arm Boards That Are Level With The Table Top And Abducted To 65 Degrees With Her Palms Facing Up. They Secure The Arms To The Arm Boards Using A Strap Supplied By The Manufacturer. After Positioning The Arms, The Neurophysiologist Reconnects The Neurophysiological Monitoring Device On The Patient's Arms For The Second Procedure. The RN Circulator Places A Soft Pillow Under The Patient's Knees And Then Places A Heel-suspension Device On The Patient's Non-operative Leg. The RN Circulator Applies A Safety Strap Approximately 2 Inches Above The Knee On The Non-operative Side And Under The Operative Leg, Allowing For Manipulation Of The Operative Leg During The Procedure. After Prepping And Draping Is Completed, The Radiology Technician Brings In The Fluoroscopy Unit (Ie, C-arm) And Positions It On The Right Side Of The Patient.**

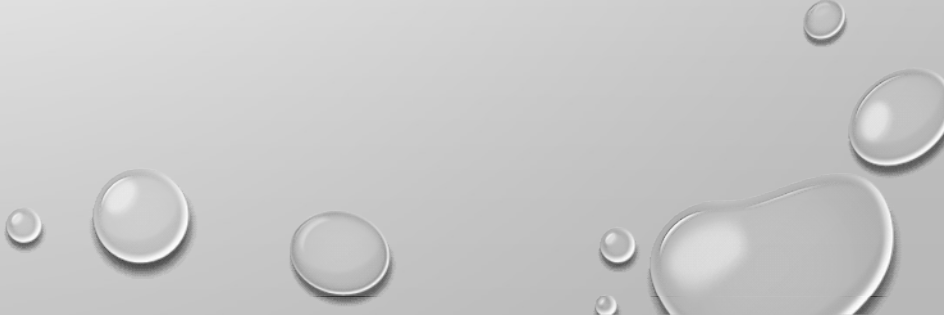
**After 10 Minutes, The Alarm On The Neurophysiological Monitoring Device Sounds. The RN Circulator Responds And Discovers That The Radiology Technician Has Abducted The Patient's Right Arm To Greater Than 90 Degrees To Make Room For The C-arm. The RN Circulator Repositions The Patient's Arm At Less Than 90 Degrees Abduction And No More Alerts Occur. The Open Reduction Internal Fixation Is Completed In 3.5 Hours.**

**After The RNFA Applies The Dressing, The RN Circulator Performs A Skin Assessment And Notes No Redness Or Signs Of Pressure Injury. The RN Circulator Documents The Surgical Positions, The Application Of The Prophylactic Dressing, All Other Padding And Positioning Devices That Were Used, The Skin Assessments, And The Repositioning Of The Arm After The Neurophysiological Monitoring Device Alert. The Surgical Team And The Nursing Assistant Transfer The Patient To The Gurney, And The RN Circulator And Anesthesia Professional Transfer Her To The Post-anesthesia Care Unit (PACU). After The Patient Is Awake, The PACU Nurse Asks Her If She Has Any Vision Problems; The Patient State That She Does Not. After 2 Hours In The PACU, The PACU Nurse Transfer The Patient To The Surgical Floor And Reports There Was No Evidence Of Any Pressure Or Positioning Injuries Found During Assessment.**



# **KEY TAKEAWAYS DISCUSSION**

**The Key Takeaways From Aorn's "Guideline For Positioning The Patient" Address The Use Of Prophylactic Dressing And Neurophysiological Monitoring And Recommendation For Positioning The Patient In The Supine And Prone Positions. The Key Takeaways Do Not Cover The Entire Guideline. Rather, They Help The Reader Focus On Important Or New Information That Should Be Implemented Into Perioperative Practice.**





## **PROPHYLACTIC DRESSINGS**

**A Patient Who Is Positioned In Almost Any Position Has A Variety Of Areas Of The Body That May Be Subjected To Pressure, Friction, And Shear, Such As The Heels And Sacrum, When The Patient Is Positioned In The Supine Position. These Areas Are At A High Risk For Skin Damage, And Applying A Prophylactic Dressing To These Areas May Help To Decrease The Potential For Injury. Research Has Shown That When Prophylactic Dressings Are Applied To Pressure Areas, The Incidence Of Pressure Injuries Is Decreased, Although The Evidence Is Not Specific To The Perioperative Environment.**

**In The Scenario, The Rn Circulator Applied The Dressing To The Patient's Heels, Sacrum, Knees, And Elbows. During The Post-procedure Skin Assessment, The RN Circulator Found No Redness Present At These Pressure Points. There Are Multiple Types Of Prophylactic Dressing, Including Semipermeable Film Dressing, Hydrocolloid Dressing, And Foam Dressing. The Manufacturer's Instructions Should Be Used To Determine The Size Of The Prophylactic Dressing, And The Dressing Should Be Replaced If It Becomes Damaged, Displaced, Loosened, Or Moist. Prophylactic Dressing Should Be Used As A Supplement To, Not A Replacement For, Positioning Interventions To Prevent Pressure Injury.**

## **NEUROPHYSIOLOGICAL MONITORING**


**Placing A Patient In A Position In Which The Peripheral Nerves In The Upper Extremities Or The Brachial Plexus Become Entrapped, Compressed, Stretched, Or Ischemic From Pressure (Eg. Arms On Arm Boards), Stretched (Eg. Taping Of Shoulders In Cervical Spine Surgeries), Dislocation Or Subluxation Of The Shoulder, Or Compression (Eg. Arm Tucking, Use Of Blood Pressure Cuffs) Can Result In A Neural Compromise. For Example, A Neurological Injury Can Be Caused By Extending The Patient's Arms On Arm Boards And Then Abducting Them More Than 90 Degrees.**

**Use Of A Neurophysiological Monitoring System Can Alert The Perioperative Team To Neural Compromise So They Can Perform Corrective Interventions To Prevent A Potential Injury From Occurring. Corrective Intervention May Include Releasing Shoulder Countertraction; Repositioning The Patient's Arms; Loosening The Sheet Used To Tuck The Patient's Arms If The Arms Are Tucked At The Sides; Reducing Shoulder Abduction; Adding Padding To Support The Shoulders, Forearms, And Wrists; And Preventing Flexing Of The Neck. The Risk For A Neurological Injury Is Greater In The Patient Who Is Thin And When Both Arms Are Extended On The Arm Boards, As Was The Case In The Scenario. In The Scenario, The Monitoring Device Alarm Caused The Team To Reposition The Patient's Arm, And No Additional Alerts Were Received, Indicating The Arms Were Positioned In A Manner Which Did Not Result In Any Neural Compromise.**

# **PRONE POSITION**

**The Prone Position Is Required For Procedures That Require Access To Dorsal Aspects Of The Body, Including The Rectum, Sacrum, And The Spine. The Patient Placed In The Prone Position Is At Risk Of Many Complications, Including**

- **Increased Intra-abdominal Pressure**
- **Increased Bleeding**
- **Abdominal Compartment Syndrome**
- **Limb Compartment Syndrome**
- **Nerve Injuries**
- **Pressure Injuries**
- **Cardiovascular Compromise**
- **Thrombosis And Stroke**
- **Hepatic Dysfunction**
- **Ocular Injuries**
- **Oropharyngeal Swelling**
- **Airway Maintenance Device Dislodgement, And**
- **Air Embolism**



**The Injuries May Be Caused By Gravitational Effects On The Anatomical Structures And Pressure Created At The Points Of Contact Between The Body And The Surfaces Under The Patient, Such As The Head Positioner And The Mattress On The OR Bed. To Decrease The Risk Of The Patient Developing Any Of These Complications, The Surgical Team Should Keep The Patient In The Prone Position For The Shortest Amount Of Time Possible.**

**The Patient Was Positioned In 5-degree Reverse Trendelenburg Because Elevating The Head Above The Heart Helps Reduce Venous Congestion In The Eyes And Orbits And Decreases Intraocular And Infraorbital Pressure.**



# **SUPINE POSITION**

**The Supine Position Is Used For Procedure That Require Access To The Anterior Body. The Patient Placed In The Supine Position Is Primarily At Risk For Developing Pressure Injuries At The Points Where The Body Is In Contact With The Bed, Such As The Occiput, Scapulae, Olecranon Processes, Sacrum, Coccyx, And Calcaneus. The Patient In The Supine Position May Develop Nerve Injuries Related To The Position Of The Extremities, Such As Flexion Of The Arms On Arm Boards Greater Than 90 Degrees. Injury Prevention Measures For A Patient In The Supine Position Include Flexing The Patient's Knees Approximately 5 To 10 Degrees And Elevating The Patient's Heels Off The Bed. Placing A Soft Pillow Under The Patient's Knees Helps To Prevent Hyperextension Of The Knees, Which May Occur Because Of The Effects Of General Anesthesia. This Intervention Also Helps Relieve Pressure On The Patient's Lower Back And Popliteal Vein Thrombosis, And Provides Protection For The Common Peroneal And Tibia Nerves. Elevating The Patient's Heels Off The Bed Helps To Increase Perfusion And Prevent Pressure Injury. This Was Accomplished In The Scenario With The Use Of The Heel Suspension Device On The Non-operative Leg. This Device Distributes The Weight Of The Patient's Leg Along The Calf Without Placing Pressure On The Achilles Tendon.**

# **CONCLUSION**

**Correct Positioning Is Important For All Surgical Patients, Especially For Long Procedure And Those That Involve Multiple Positions. When Surgical Team Members Use Safety Precautions For Positioning (E.g. Correct Padding Of Pressure Points, Repositioning, Keeping The Patient In The Position For The Shortest Amount Of Time Required) As Described In Aorn's "Guideline For Positioning The Patient," The Potential For Pressure Or Other Positioning Injuries Is Decreased. Perioperative Personal Should Review The Entire Guideline And Use It As A Resource When Developing Or Revising Policies And Procedures To Ensure That The Facility Is Using The Best Evidence-base Practices When Positioning Patients In All Positions And Any Modifications Of Those Positions. The Guideline Also Provides The Foundation For Educational Programs That Can Be Developed To Assist In Meeting The Requirement For Mastering Competency.**

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