APGO Basic Clinical Skills Curriculum

Patient Positioning

Association of Professors of Gynecology and Obstetrics (APGO)
Undergraduate Medical Education Committee ©2017
### Patient Positioning

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DESCRIPTION

Patient positioning is an important patient safety concern that must be performed appropriately to avoid injuring the patient. Patient positioning during surgery is a skill that is rarely taught but we expect students to know. During the course of a routine surgical case, the resident or faculty may verbalize what they are doing while positioning the patient, but the student does not necessarily participate in the active process.

LEARNING OUTCOMES

This clinical skills module provides a standardized framework for teaching the importance of and the principles behind patient positioning.

Following participation in this module, students should demonstrate the following learning outcomes:

1. Describe the goal of patient positioning for surgery
2. Describe the most common positions for patients in routine ob-gyn procedures
3. Review the technique for patient positioning in surgery
4. Review the risks if surgical positioning is done incorrectly
5. Demonstrate accurate patient positioning for surgery

BEST PRACTICES

Practice makes perfect. The residents and faculty can model the positioning and verbally explain what they are doing and why on the gynecology services. However, we all learn best by doing. Therefore, it is recommended to model the behavior on the first case and then have the student direct the positioning of the patient on the second case. This will allow the student to troubleshoot the issues and verbalize their thinking during the process. After the student has completed this module and been able to practice positioning the patient, use the checklist to confirm competency. This could be done in the operating room, with a simulated patient or a simulation manikin. The students could consider positioning each other. However, the lithotomy position may pose some psychological concerns for the students due to the vulnerability of the position and should only be done with caution and with permission gained in a way that feels safe and non-directive for the students.

Patient positioning for gynecologic procedures should be introduced in the third year. However, it would be important to include this training in the fourth-year sub-internship and/or ob-gyn boot camp in preparation for residency.

Describe the goal of patient positioning for surgery:
The goal of surgical positioning includes the following:

- Promote access to:
  - The surgery site with optimal visualization
  - Administration of IV fluids and anesthetic agents
  - OR surgical equipment
- Protect anatomical structures to avoid complication and injuries (e.g. skin, nerves, extremities and spine)
- Minimally interfere with the body’s homeostasis (e.g. respirations and circulation, body temperature)
- Ensure patient comfort and dignity

Describe the most common positions for patients in routine gynecologic procedures:

- For exploratory laparotomies, the patient is most commonly in the supine position. This means the patient is lying horizontally with the face up. Obstetrical procedures that would also be in the supine position include postpartum tubal ligation and Caesarean delivery.

<table>
<thead>
<tr>
<th>Image of patient in supine position</th>
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- For laparoscopy and robotic surgery, the patient is most commonly in the lithotomy position. In the lithotomy position the patient is lying horizontally with face up as well. However, the feet are often in leg rests to allow for access to the abdomen as well as the vaginal region. Patients are also usually in lithotomy position during vaginal delivery.

| Image of patient in lithotomy position |

Review the technique for patient positioning in surgery:

General safety measures for the supine position:
• The patient should never be moved once anesthetized without permission from the anesthesia provider, who then directs the movements of the patient (while stabilizing the patient’s head, neck and airway).

• Confirm the spine is in alignment with no flexion or torsion present and the legs are parallel.

• The patient’s legs should not be crossed to avoid pressure and nerve injuries.

• Confirm that no body part is extending beyond the OR table edges, in particular the feet, in order to avoid a foot-drop injury.

• The pressure points and bony prominences should be identified and properly padded.
  
  o Consider placing a pillow under the posterior of the patient’s knees to relieve pressure on the lumbar region of the back.

• The safety strap should be placed 2 inches above the knees. The OR table safety strap must not be secured too tightly across the patient, in order to avoid pressure that can compromise circulation. Ideally, you should be able to comfortably insert two fingers under the mid-section of the safety strap.

• The patient’s arms should be positioned to avoid nerve injury.
  
  o When patient’s arms are positioned out laterally, the arms should be placed on well-padded arm boards with additional padding for the elbows. The arms should be abducted less than 90 degrees with palms up and fingers extended.
  
  o When arms are “tucked” at the side of the body, the arms should be slightly flexed at the elbows, palms facing toward the body, fingers extended. A pad should be placed under the elbow. The draw sheet should go over the arm (above the elbow) and tucked between the patient and the OR mattress.

*Special Note for Obstetric Patients*

When placed in the supine position, the uterus of the pregnant female patient compresses the vena cava and aorta obstructing the blood flow, which can result in undesired physiological consequences for the female and fetus. To avoid this compression during Caesarean delivery, the patient should be tilted to the left approximately 15 degrees by either “airplaning” the table or placing a wedge under the patient’s right hip.

General safety measures for **lithotomy position:**

• The patient should never be moved once anesthetized without permission from the anesthesia provider who then directs the movements of the patient (while stabilizing the patient’s head, neck, and airway).
• Confirm the head and spine are in alignment with the hips.

• Position the patient so that the buttocks are even with the lower break of the OR table.

• The legs are placed in leg rests that should be well-padded and positioned equal in height at the height of the bed or higher.
  
  o The legs should be lifted simultaneously and positioned in the leg rests. One leg at a time MUST never be placed in the leg rests in order to avoid lumbosacral injury and hyperflexion of the hip.

  o Calf compression can predispose the patient to venous thromboembolism and compartment syndrome. This risk is increased the longer the procedure goes on. Make sure that the patient’s heel is bearing the weight of the leg rather than the posterior calf.

• The patient’s arms should be positioned to avoid nerve injury.
  
  o When patient’s arms are positioned out laterally, the arms should be placed on well-padded arm boards with additional padding for the elbows. The arms should be abducted less than 90 degrees with palms up and fingers extended.

  o When arms are “tucked” at the side of the body, the arms should be slightly flexed at the elbows, palms facing toward the body, fingers extended. A pad should be placed under the elbow. The draw sheet should go over the arm (above the elbow) and tucked between the patient and the OR mattress. Confirm the fingers are clear of the lower break in the bed prior to lowering the foot of the bed.

**Review the risks if surgical positioning is done incorrectly:**

Protect the nerves and reduce the risk for temporary or permanent injury when positioning the patient. Nerves are vulnerable to injury by traction and pressure. The nerves most commonly injured are the ulnar, common peroneal and brachial plexus. See the checklist below for a description of the nerve injuries and their origins.

**How to avoid certain nerve injuries:**

• To avoid brachial plexus injury, the arms should not be abducted more than 90 degrees on the arm boards.

• Prolonged hyperflexion of the hip joints can lead to traction injuries. The lithotomy position is primarily associated with this injury. An angle of more than 90 degrees at the hips should be avoided.
• Compression of the common peroneal nerve is usually associated with the lithotomy position. Injury to the nerve can cause foot inversion and drop. Injury can be avoided by adequate padding of the leg rests and avoiding the lower legs resting against the leg rests.

• The ulnar nerve is injured due to poorly placed arm straps/restraints and table attachments and poor positioning of the arm when placed alongside the patient. The injury is avoided by padding the elbow or proper placement of the arm in pronation.

Case Scenario

The instructor tells the student about the patient:

38-year-old female G3 P2 who presented with pelvic pain and vaginal bleeding. She has a 4-cm ectopic pregnancy in the right adnexa. After counseling about the options of surgery versus methotrexate, the patient has decided on surgery. You plan to do a laparoscopy.

The instructor asks the following:

• What are the goals in positioning the patient for surgery?

• Describe how you decide which position is most appropriate for the surgery being performed.

• Demonstrate proper technique for positioning this patient.

• Describe the risks if positioned incorrectly.

CHECKLIST

This checklist is designed for laparoscopy but could easily be modified for a laparotomy.

Demonstrate accurate patient positioning for surgery:

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<tr>
<th>KNOWLEDGE</th>
<th>Done</th>
<th>Not Done</th>
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<tbody>
<tr>
<td><strong>General</strong></td>
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<tr>
<td>Describe the most common positions for patients in routine obstetrical and gynecologic procedures</td>
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<td>Describes the goal of patient positioning for surgery</td>
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<td>Describes the risks if surgical positioning is done incorrectly</td>
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<tr>
<td>Describes the appropriate steps in patient positioning in surgery</td>
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<td><strong>Lateral Aspect of Knee</strong></td>
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<tr>
<td>Identify nerve at risk (common peroneal)</td>
<td></td>
<td></td>
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<tr>
<td>Describe consequence of injury (decreased sensation on lateral</td>
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lower leg, dorsal foot, foot drop)
Describe correct position to avoid injury (knee toward opposite shoulder, no pressure on lateral aspect)

**Elbow**
Identify nerve at risk (ulnar)
Describe consequence of injury (decreased sensation and weakness in fourth and fifth digits)
Describe correct position to avoid injury (elbow padded, arm pronated, avoid hyperextension)

**Hip**
Identify nerve at risk (femoral and lateral femoral cutaneous)
Describe consequence of injury (sensory deficit of thigh, weakness of hip flexion, knee extension)
Describe correct position to avoid injury (no hyperflexion of hip, limit abduction and external rotation)

**SKILLS**

**Body**
Position buttocks at edge of bed, no sacral pressure
Make sure patient centered on bed

**Arms**
Make sure arms are tucked
Position arms so they are pronated, thumbs up or thumbs in
Check that there is no hyperflexion or hyperextension of elbow
Check that there is no hyperflexion or hyperextension of wrist
Check that arms are padded
Check that fingers are safe

**Legs**
Make sure that lithotomy leg rests clips at level of the greater trochanter or anterior superior iliac spine
Position heels snug in the boot, weight of patient’s leg on the heel, heel at back of boot
Make sure that ankle, knee, hip, umbilicus, opposite shoulder all in alignment
Make sure there is no pressure on posterior calf
Make sure there is no pressure on lateral aspect of leg
Make sure there is no hyperflexion or hyperextension of hips
Make sure there is no hyperflexion or hyperextension of knees
Be sure to limit abduction and external rotation

**PERFORMANCE ASSESSMENT**

The provided checklist can be used for performance assessment.
**PRACTICAL TIPS**

We recommend that the patient positioning during surgery be introduced to students during the third-year clinical clerkship in obstetrics and gynecology. The training/practice session can be conducted in the operating room or as a part of the objective structured clinical examination followed by immediate performance assessment using the checklist. Continued practice should be encouraged during the clerkship. This will allow the student to better integrate into the surgical team and assist the residents and faculty in a knowledgeable way.

**RESOURCES**


2. The 2011 Association of Surgical Technologists Standards of Practice for Surgical Positioning.