SPINAL PRECAUTIONS: LOG-ROLLING TECHNIQUE

PURPOSE

Step by step instructions for each team member when performing the log-rolling technique to reposition patients with suspected or actual spinal injury.

POLICY STATEMENTS

Moving a patient with a suspected or known spinal injury requires a team approach with clear roles and responsibilities of all team members and clear communication among team members to prevent further damage to spinal cord and promote patient comfort.

PRACTICE LEVEL/COMPETENCIES

Competencies: for being the team leader to lift or reposition a patient with a c-spine injury or to lift/reposition a patient with an L- or T-spine injury include the ability to:

- perform a motor and sensory neurological exam
- describe and demonstrate how to stabilize the cervical spine during repositioning of the patient with a known or suspected cervical spine injury
- describe and demonstrate how to log-roll, lift or reposition a patient with a known or suspected spinal injury
- instruct “team” members on correct technique for assisting with repositioning and log-rolling a patient with a known or suspected spinal injury

DEFINITIONS

Aspen Collar: for appropriate application, care and cleaning guidelines, refer to Aspen Collar Guidelines.

Head Rolls: Rolled towels or blankets placed against either side of a patient’s head, used to maintain proper spinal alignment of the head and neck. Note: sand bags are not recommended for this purpose.

Proper Spinal Alignment: Patient’s head and neck are in neutral position: ie. no hyper flexion/extension or rotation, and the chin is in alignment with the sternal notch and umbilicus.

Traction: Method used to realign spinal bones using weights. Eg. Halo traction.

Unstable fracture: A fracture that has the potential to displace further, possibly resulting in neurological deterioration. Usually requires surgery.
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PROCEDURE
Cervical Spine (C-Spine) Injury, Lesion or Post C-spine Surgery

“Team Leader” Responsibilities

1. **DETERMINE** if you have the **competencies** to lead the logroll procedure.
   
   **NOTE:** If unfamiliar with the technique, contact Emergency Department charge nurse for assistance.

2. **GATHER** equipment:
   a. Pillows – 2-4 depending on patient size
   b. Sliding sheet – with blue sliding surface
   c. Flannel sheet – folded
   d. Head Rolls

3. **OBTAIN** assistance of 2 to 5 staff members and **PROVIDE** instruction on logrolling and repositioning techniques as needed.
   a. A minimum of three staff members are required to reposition patients with cervical spine injuries.
   b. Factors such as size of the patient, presence of additional injuries, patient’s predicted ability to tolerate repositioning, and the need to transfer influence number of staff required to assist.

4. **IDENTIFY** patient and **EXPLAIN** procedure. **INSTRUCT** patient to **not** move his/her head or to nod “yes” or “no”.
   
   **Note:** Nodding the head is a common form of communication that must be prevented in patients with C-spine injury.

5. **ENSURE** patient has an **aspen collar** on or the specified collar per physician order.

6. **ENSURE** the bed is flat.

7. **POSITION** patient’s arms, or ask patient to cross their arms over their lower abdomen or pelvis to discourage any attempt by the patient to assist with the turn.
   
   **Note:** Crossing arms onto the lower abdomen or pelvis minimizes shoulder movement while allowing arms to be out of the way of the turn. Allowing patients to assist in turning may cause twisting of the spine, potentially increasing the damage caused by the injury.

8. **POSITION** any tubes and drains to ensure no unnecessary traction or compression occurs during turning/repositioning.

9. **ENSURE** splints/devices are in place to support any other injuries if present.

10. **ENSURE** patient is in **Proper Spinal Alignment** prior to commencing the turn.

11. **PLACE** a small pillow or folded blanket between patient’s legs to provide comfort during the turn.

12. **PERFORM** a motor/sensory assessment prior to the turn to determine neurological status to provide “baseline” information.

13. **DETERMINE** the necessity of repositioning the patient to the edge of the bed to allow room for the patient to be turned to face the opposite direction. If required, **COORDINATE** the procedure recognizing the need for additional staff to assist.

14. **DIRECT** “turning team” members to their positions.

15. **ASSIGN** additional staff as required to move the lower limbs.

   **NOTE:** Legs must be moved in unison with the spine to maintain spinal alignment and to reduce patient discomfort.
16. CONFIRM with the “turning team” members that the lifting sheet extends from the patient’s shoulder to lower limbs.

   NOTE: The purpose of the lifting sheet is to firmly support the entire length of the spine.

17. FIRMLY HOLD the patient’s shoulders at the mid-clavicular area with forearms held tightly to the patient’s head and neck to form a rigid cradle.

18. INSTRUCT one of the “turn team” members to remove head rolls once you have firm control of the head - never remove stabilizing aids until the head is controlled.

19. ENSURE patient’s arms are relaxed on abdomen.

20. CALL the turn to a 30-45° angle facing the “turn team” members on a 1-2-3 count.

21. ENSURE alignment is maintained throughout the turn.

22. CALL the return of the patient to resting position on a 1-2-3 count.

23. VERIFY the correct alignment of the patient’s head and neck by ensuring the head is in a neutral position and the chin is in a straight line with the sternal notch and umbilicus.

24. PERFORM a motor/sensory assessment immediately following each turn/repositioning to determine if any change has occurred during the procedure.

25. RELEASE head if post procedure motor and sensory status is satisfactory directing a “turn team” member to assist by placing a folded flannel sheet under the patient’s head as you withdraw your lower, supporting hand/arm.

26. ELICIT feedback from the patient regarding their comfort and sense of alignment.
27. **ENSURE** all tubes, lines or leads are positioned correctly.

   **NOTE:** If patient is connected to spinal traction, refer to Halo traction reference care plan

28. **DOCUMENT** on appropriate record(s):
   a. Date, time
   b. Type of turn performed
   c. Spine immobilized (c-spine)
   d. Number of turn team members present
   e. Patient’s before and after motor/sensory assessment
   f. How the patient tolerated the procedure
   g. Analgesia/antiemetics administered
   h. Patient/family education, if appropriate

### “Turn Team” Member Responsibilities

**Turn team” member 1:**

1. **POSITION** yourself on side of the bed to which the patient is to be turned, level with the patient’s shoulders.
2. **REACH** both arms across the patient, grasp the lifting sheet behind the scapulae and behind the hips on the opposite side of the bed.

**“Turn team” member 2:**

1. **POSITION** yourself on side of the bed to which the patient is to be turned at the level of the patient’s hips
2. **REACH** both arms across the patient, grasp the lifting sheet behind the iliac crest and just above the knees.

**NOTE:** the staff members create a “crisscross’ arm position with each others’ arms at the patient’s hips which support proper spinal alignment and improves their ability to move the patient as a single unit.

3. **COLLABORATE** with the “team leader” as he/she directs the “turn team” members on the count of 1-2-3 to PULL the lifting sheet smoothly towards them in unison until the patient is lying at a 30-45° angle facing the staff members.
   **NOTE:** Positioning a patient on their side at no more than a 45° angle reduces the potential for loss of proper spinal alignment and head control.

4. **POSITION** patient’s upper leg with the knee flexed unless contraindicated by the presence of an unstable fracture of the lumbar spine (L-spine) or pelvis.
5. **SUPPORT** the patient in their new position by placing one pillow, lengthwise, behind the patient’s back starting at shoulder level and a second pillow behind the buttocks. **ADJUST** additional pillow(s) between patient’s legs for comfort and alignment.

   **NOTE:** If additional help is not available, the staff member supporting the hips and legs during the turn is to move to the other side of the bed to position the pillows while the “team leader” and the staff member supporting the scapulae and hips maintain the patient in position.

6. **POSITION** patient back into the pillows when the “team leader” gives the “1-2-3” count.

7. **PLACE** folded flannel sheet under the patient’s head as directed by the “team leader” at the head as he/she withdraws his/her lower, supporting hand/arm.

   **NOTE:** This coordinated maneuver maintains the patient’s head in a neutral position, maintaining proper spinal alignment during side-lying.

8. **SECURE** patient’s head position with head rolls.

**L-Spine/T-Spine Injury, Lesion or Post Spinal Surgery**

1. **DETERMINE** if you have the competencies to lead the logroll procedure.

   **NOTE:** If unfamiliar with the technique, contact Emergency Department charge nurse for assistance.

2. **GATHER** equipment:
   a. Pillows – 2-4 depending on patient size
   b. Sliding sheet – with blue sliding surface
   c. Flannel sheet – folded

3. **OBTAIN** assistance of another staff member and **PROVIDE** instruction on logrolling and repositioning techniques as needed.

4. **IDENTIFY** patient and **EXPLAIN** procedure.

5. **ENSURE** the bed is flat.

6. **POSITION** patient’s arms, or ask patient to cross their arms over their lower abdomen or pelvis to discourage any attempt by the patient to assist with the turn.

   **Note:** Crossing arms onto the chest/abdomen minimizes shoulder movement while allowing arms to be out of the way of the turn. Allowing patients to assist in turning may cause twisting of the spine, potentially increasing the damage caused by the injury.
7. **POSITION** any tubes and drains to ensure no unnecessary traction or compression occurs during turning/repositioning.

8. **ENSURE** splints/devices are in place to support any other injuries if present.

9. **ENSURE** patient is in **proper spinal alignment** prior to commencing the turn.

10. **PLACE** a small pillow or folded blanket between patient's legs to provide comfort during the turn.

11. **PERFORM** a motor/sensory assessment prior to the turn to determine neurological status to provide "baseline" information.

12. **DETERMINE** the necessity of repositioning the patient to the edge of the bed to allow room for the patient to be turned to face the opposite direction. If required, **COORDINATE** the procedure recognizing the need for additional staff to assist.

13. **CONFIRM** that the lifting sheet extends from the patient’s shoulder to lower limbs.

   **NOTE:** The purpose of the lifting sheet is to firmly support the entire length of the spine.

14. **ENSURE** patient’s arms are relaxed on chest/abdomen.

15. **POSITION** yourself beside the bed on the side towards which the patient is to be turned level with the patient’s shoulders.

16. **INSTRUCT** a team member to position him/herself on same side level with patient’s hips.

17. **ASSIGN** additional staff to support lower limbs if l-spine injury.

18. **REACH** both arms across the patient, grasp the lifting sheet behind the scapulae and behind the hips on the opposite side of the bed.

19. **INSTRUCT** the staff person at the hips to **REACH** both arms across the patient, grasp the lifting sheet behind the iliac crest and just above the knees.
NOTE: you and the other team member create a “crisscross’ arm position with each others’ arms at the patient’s hips which support proper spinal alignment and improves your ability to move the patient as a single unit.

20. CALL the turn to a 30-45° angle facing you on a 1-2-3 count by PULLING the lifting sheet smoothly towards you in unison until the patient is lying at a 30-45° angle facing you.

NOTE: Positioning a patient on their side at no more than a 45° angle reduces the potential for loss of proper spinal alignment

21. ENSURE alignment is maintained throughout the turn.

22. SUPPORT the patient in their new position by placing one pillow, lengthwise, behind the patient’s back starting at shoulder level and a second pillow behind the buttocks. ADJUST additional pillow(s) between patient’s legs for comfort and alignment.

NOTE: If additional help is not available, the staff member supporting the hips and legs during the turn is to move to the other side of the bed to position the pillows while you maintain the patient in position.

23. CALL the return of the patient to resting position on a 1-2-3 count.

24. PERFORM a motor and sensory status assessment immediately following each turn/repositioning to determine if any change has occurred during the procedure.

25. ELICIT feedback from the patient regarding their comfort and sense of alignment.

26. ENSURE all tubes, lines or leads are positioned correctly.

27. NOTE: If patient is connected to spinal traction, refer to Halo traction reference care plan.

28. DOCUMENT on appropriate record(s):
   a. Date, time
   b. Type of turn performed
   c. Spine immobilized (t-spine, l-spine)
   d. Number of turn team members present
   e. Patient’s before and after motor/sensory assessment
   f. How the patient tolerated the procedure
   g. Analgesia/antiemetics administered
   h. Patient/family education, if appropriate

REFERENCES

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