

NATIONAL INSTITUTES OF HEALTH  
WARREN GRANT MAGNUSON CLINICAL CENTER  
NURSING DEPARTMENT

PROCEDURE: Lumbar Subarachnoid Drainage System: Collection Bag Change, Drainage System Change and Obtaining a CSF Specimen from the Drainage System

Approved:

---

Clare E. Hastings, R.N., Ph.D.  
Chief, Nursing and Patient Care Services

Formulated: 8/95  
Implemented: 10/95  
Revised: 3/1998, 01/2002, 09/2002

G:\PRO\LUMSUBDR.PRO  
CIS/3/20/98

NATIONAL INSTITUTES OF HEALTH  
 WARREN GRANT MAGNUSON CLINICAL CENTER  
 NURSING DEPARTMENT

PROCEDURE: Lumbar Subarachnoid Drainage System: Collection Bag Change, Drainage System Change and Obtaining a CSF Specimen from the Drainage System

Essential Information:

Refer to the Standard of Practice: Care of the Patient with a Lumbar Subarachnoid Drainage System

I. **CHANGING COLLECTION BAG**

A. Equipment:

- Lumbar CSF Drainage Bag
- Sterile Gloves
- Alcohol Pads
- Disposable waterproof towel (2)
- Smooth cannula clamp

B. <u>STEPS</u>	<u>KEY POINTS</u>
1. Wash hands and apply clean gloves.	
2. Clamp drain on tubing closest to patient using attached clamp. Verify that stopcock is turned off to the drip chamber cylinder.	
3. Place one disposable waterproof towel on clean surface under collection bag. Open new drainage bag package and place on the second disposable waterproof <b>towel</b> .	
4. Put on sterile gloves.	
5. Cleanse the connection between the tubing and drainage bag with alcohol pad. Allow to dry for at least 30 seconds.	
6. Disconnect the drainage bag.	6. To prevent cracking the hub of the tubing, avoid use of Kelly clamp to loosen the connection.
7. Attach tubing to connector on new drainage bag.	

8. Label new drainage bag with date, time, and nurse's initials.	
9. Attach drainage bag to mounting pole, below graduated cylinder. Do not allow bag to touch the floor by placing in a clean graduate cylinder.	9. This keeps drainage bag off the floor and in an upright position.
10. Release attached clamp on tubing closest to patient.	
11. Assess for CSF flow in drip chamber. If CSF does not appear to be dripping, reposition the patient side to side and lower the cylinder 1-3 inches for no longer than 1 minute.	11. The lumbar catheter may be lodged against the wall of the subarachnoid space.
12. If repositioning the patient fails to improve CSF drainage flow, notify the medical prescriber and prepare for the prescriber to irrigate the system with sterile preservative free normal saline or replacement of the drainage system. Do not attempt to manage an occluded system by withdrawing the blockage with a syringe or milking/stripping the tubing.	12. Withdrawing the blockage with a syringe or milking the tubing may create a dangerous increase in negative pressure
13. Dispose of used equipment as per Clinical Center Nursing Department Procedures and Policies.	
14. Wash hands.	

### C. DOCUMENTATION:

Document in the patient's medical record:

1. Time of collection bag change and system patency.
2. Assessments and interventions
3. Patient's response.

**II. CHANGING LUMBAR DRAINAGE TUBING, DRIP CHAMBER, AND COLLECTION BAG.**

A. Equipment

- Alcohol pads (3)
- 4x 4 sterile gauze (6)
- Gloves
- Mask
- Sterile gloves
- Sterile field
- External Drainage Set
- Clear adhesive tape 1”
- Smooth Cannula Clamp

B. <u>STEPS</u>	<u>KEY POINTS</u>
1. Wash hands.	
2. Position patient on side with back facing lumbar drainage system.	
2. Position patient on side with back facing lumbar drainage system.	
3. Put on gloves.	
4. Place sterile barrier under the connection between the tubing and lumbar catheter.	4. Use sterile technique throughout the procedure.
5. Clamp the patient’s present drainage tubing with attached clamp. Clean luer-lok connection between tubing and lumbar catheter with alcohol and allow to dry for at least 30 seconds.	
6. Remove new External Drainage Set from package and place on sterile field.	
7. Put on sterile gloves and mask.	
8. Connect new drainage collection bag to tubing of new sterile drainage system and place new drainage system on sterile field.	
9. Close attached clamp on tubing of new drainage set that will be attached to lumbar catheter. Turn 3-way stopcock (below drip chamber cylinder) off to cylinder.	
10. Disconnect tubing from lumbar catheter at the luer-lok connection.	

11. Immediately connect the prepared new drainage set to the catheter, securing the catheter to the tubing via the luer-lok connector.	
12. Attach the graduated cylinder to the mounting pole. Position cylinder at level or height specified by medical orders.	12. The height of the pressure level line controls rate of CSF flow.
13. Attach drainage bag to the mounting pole, below graduated cylinder. Do not allow bag to touch the floor by placing in clean graduated plastic cylinder.	13. This keeps drainage bag off the floor and in an upright position.
14. Open clamp and assess for CSF flow. If CSF does not appear to be dripping, reposition patient and lower the cylinder 1-3 inches for no longer than one minute.	14. The lumbar catheter may be lodged against the wall of the subarachnoid space.
15. If repositioning the patient fails to improve CSF drainage flow, notify the medical prescriber and prepare for the prescriber to irrigate the system with sterile preservative free normal saline or replacement of the drainage system. Do not attempt to manage an occluded system by withdrawing the blockage with a syringe or milking/stripping the tubing.	15. Withdrawing the blockage with a syringe or milking the tubing may create a dangerous increase in negative pressure.
16. Label catheter and drainage system with printed color coded label: "Lumbar CSF Catheter".	
17. Mark drainage bag with date, time, and nurse's initials.	
18. Dispose of used equipment according to Clinical Center Nursing Department Procedures and Policies.	
19. Wash hands.	

C. DOCUMENTATION:

Document in the patient's medical record:

1. Time of drainage set change and system patency.
2. Patient response.

**III. PROCEDURE: OBTAINING CSF SPECIMENS FROM DRAINAGE SYSTEM**

**A. EQUIPMENT**

- 4 sterile specimen tubes without preservative
- Alcohol swabs
- Gloves
- 10 ml syringe
- 25 gauge protected needle

B. <u>STEPS</u>	<u>KEY POINTS</u>
1. Wash hands.	
2. Put on gloves.	
3. Set up syringe with protected needle.	
4. Cleanse aspiration port with three alcohol swabs. Allow to dry for at least 30 seconds.	
5. Turn stopcock off to drainage bag.	
6. Clamp tubing closest to patient using attached clamp.	
7. Aspirate CSF from port using syringe with protected needle. <ul style="list-style-type: none"> <li>a. Turn stopcock off to drip chamber</li> <li>b. Unclamp tubing closest to patient.</li> <li>c. Assess for CSF flow. If CSF does not appear to be dripping, reposition and lower the cylinder 1-3 inches for no longer than one minute.</li> </ul>	
8. If repositioning the patient fails to improve CSF drainage flow, notify the medical prescriber and prepare for the prescriber to irrigate the system with sterile preservative free normal saline or replacement of the drainage system. Do not attempt to manage an occluded system by withdrawing the blockage with a syringe or milking/stripping the tubing.	8. Withdrawing the blockage with a syringe or milking the tubing may create a dangerous increase in negative pressure.

9. Fill sterile tubes with appropriate amount of CSF as per DLM Manual.	
10. Dispose of used equipment according to Clinical Center Nursing Department Procedures and Policies.	
11. Wash hands.	

REFERENCES:

1. Thompson, H. (1998). *American Association of Neuroscience Nurses, Clinical Guidelines Series: Lumbar Drain Management*. Chicago: American Association of Neuroscience Nurses.5.
2. National Institutes of Health, Clinical Center Nursing Department. (2002). Standard of Practice: Care of the Patient with a Lumbar Subarachnoid Drainage System <http://www.cc.nih.gov/nursingnew/nursingresources/LUMSUBDR.pdf> . Bethesda, Maryland
3. Hickey, J. (2002). The clinical practice of neurological & neurosurgical nursing (5<sup>th</sup> ed.). Philadelphia. J. B. Lippincott.
4. Barker, E. (2002). Neuroscience nursing: A spectrum of care (2<sup>nd</sup> Ed.). St. Louis: Mosby.
5. Lemole, G. M., Henn, J. S., Zabramski, J. M., & Sonntag, V. K. H. (2001). The management of cranial and spinal CSF leaks. BNI Quarterly, 17(4), 4-13.