Urine specimen collection from an indwelling urinary catheter (Foley)

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Introduction

Collection of a urine specimen from an indwelling urinary catheter—obtained by aspiration with a syringe—requires maintaining a closed urinary drainage system and using sterile collection technique. Aspiration occurs through a disinfected sampling port to prevent catheter-associated urinary tract infection (CAUTI).[1][2] Processing of urine specimens for culture testing should occur as soon as possible, preferably within 2 hours. If urine specimens can't undergo processing within 30 minutes of collection, they should be refrigerated. Refrigerated specimens should be cultured within 24 hours.[3] If adhering to this guideline isn't possible, a culture tube that contains preservative should be used to prevent bacterial growth.[4]

Equipment

- Antiseptic pad
- Gloves
- Laboratory biohazard transport bag
- Specimen label
- Sterile or nonsterile specimen container with lid (depending on the ordered test) or urine collection tube (with preservative)
- Syringe (3- to 30-mL, depending on the volume of urine required for the ordered test) or luer-lock access device
- Optional: ice, laboratory request form

Preparation of Equipment

Inspect all equipment and supplies. If a product is expired, is defective, or has compromised integrity, remove it from patient use, label it as expired or defective, and report the expiration or defect as directed by your facility.

Implementation

- Verify the practitioner's order.
- Gather and prepare the necessary equipment and supplies.
- Perform hand hygiene.[5][6][7][8][9][10]
- Confirm the patient's identity using at least two patient identifiers.[11]
- Provide privacy.[12][13][14][15]
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*[16]

- Perform hand hygiene.[5][6][7][8][9][10]
- Put on gloves *to comply with standard precautions.*[17][18][19]
- Drain urine from the drainage tube into a collection bag.
- Disinfect the sampling port with an antiseptic pad and then allow it to dry.[1]

For collection using a syringe

- Attach the syringe to the sampling port.
- When fresh urine appears in the tubing, aspirate the specimen into the syringe.
- Remove the syringe from the sampling port.
- Slowly transfer the specimen to an appropriate container.
- Discard the syringe in an appropriate receptacle.[19]

For collection using a luer-lock access device

- Attach the luer-lock access device to the sampling port.
- When fresh urine appears in the tubing, securely grasp the access device and push the collection tube into the access device.
- Allow the natural vacuum of the tube to draw the specimen into the tube until the vacuum no longer continues to draw, *which indicates complete filling.*
- Remove the luer-lock access device from the sampling port.
- Discard the luer-lock access device in an appropriate receptacle.[19]

Completing the procedure

- Remove and discard your gloves.[19]
- Perform hand hygiene.[5][6][7][8][9][10]
- Label the specimen in the presence of the patient *to prevent mislabeling.*[11]
- Place the specimen in a laboratory biohazard transport bag and send it immediately to the laboratory with the appropriate laboratory request form (if necessary) or refrigerate it if transport may be delayed.[19] If a urine culture is to be performed, make sure that you list current antibiotic therapy on the laboratory request form, if required by your facility.[1]
- Perform hand hygiene.[5][6][7][8][9][10]
- Document the procedure.[20][21][22][23]

Special Considerations

- Collecting urine with a syringe increases the potential for contamination. Therefore, using a luer-lock access device is the preferred method.[4]
- If a large volume of urine is necessary for special analysis (not a culture), obtain the urine specimen directly from the drainage bag, not the sampling port.[1]
- Be aware that the outlet tubes of some urinary drainage collection bags are coated with an antimicrobial agent that can interfere with the results of a urine culture if the specimen is obtained directly from the drainage bag.
- Contact the laboratory if specialized urine tests are ordered *to determine whether the specimen requires unique handling or transport.*[24]

Complications

Complications associated with urine specimen collection from an indwelling urinary catheter may include:

- CAUTI (from improper technique).[3]

Documentation

Documentation associated with urine specimen collection from an indwelling urinary catheter includes:

- date and time the specimen was collected and transported to the laboratory
- specific test ordered
- specimen characteristics
  - appearance
  - odor
  - color
  - other unusual characteristics
- urine volume on the intake and output record
- teaching provided to the patient and family (if applicable)
  - understanding of that teaching
  - follow-up teaching needed.

This procedure has been reviewed by the Academy of Medical-Surgical Nurses.

AMSN Academy of Medical-Surgical Nurses

Related Procedures

- Indwelling urinary catheter (Foley) care and management, home care
- Indwelling urinary catheter (Foley) urine specimen collection, pediatric

References

(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions)

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Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is adapted from *Evidence-Based practice in nursing & healthcare: A guide to best practice,* Fifth edition, by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt (2023).

Level I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
Level II	Evidence from well-designed single RCTs (experimental)
Level III	Evidence from well-designed nonrandomized controlled trials (quasi-experimental), systematic reviews of a complete body of evidence, and intervention studies using mixed methods
Level IV	Evidence from well-designed case-control and cohort studies (observational)
Level V	Evidence from systematic reviews of qualitative and descriptive studies
Level VI	Evidence from single descriptive and qualitative studies, evidence-based practice implementation, and quality improvement projects
Level VII	Evidence from expert opinion, expert committee reports, and literature reviews

Data from Gyatt, G., & Rennie D. (2002). Users' guides to the medical literature. American Medical Association; Harris, R. P., et al. (2001). Current methods of the U.S. Preventative Services Task Force: A review of the process. American Journal of Preventative Medicine, 20, 21-35.