

Suprapubic Aspiration with Point of Care Ultrasound (SPA-POCUS)

Contraindications

- Empty bladder
- Concern for superficial infection at or around needle insertion site
- Genitourinary anomalies
- Significant abdominal surgery
- Abdominal distention
- Increased bleeding risk: anticoagulation, coagulopathy, thrombocytopenia

Procedure

1. Obtain informed consent from parents.
2. If GA 35 weeks or later, place lidocaine cream (LMX) at the site of the SPA needle insertion (just cephalad to the pubic symphysis). Leave LMX in place at least 30 minutes prior to needle insertion. If GA <35 weeks, consider using injectable 1% lidocaine prior to needle insertion (if using injection, perform after abdominal sterilely cleaned).
3. Collect all supplies/ensure all supplies are present necessary for the procedure.
 - a. Spinal needle 1.5 in, 22g
 - b. 3-5 mL sterile syringe
 - c. Sterile drapes
 - d. Sterile POCUS probe cover
 - e. Sterile POCUS gel
 - f. Sterile urine collection container
 - g. Labels for labs
 - h. Cleaning solution (chlorhexidine/betadine per unit protocol)
4. Turn on Point of Care Ultrasound Machine. Ensure a phase array probe is connected (may also use linear).
5. Select the "Abdomen" setting (if phase array) and ensure it is working appropriately.
6. Perform Time Out.
7. Remove LMX cream (if applied).
8. Using POCUS, identify the bladder and confirm that it is full of urine (does not need to be sterile).
9. Place on a hat and mask and scrub for at least 2 minutes.
10. Place on a sterile gown and sterile gloves.
11. Place instruments on the sterile field using sterile technique.

12. Cleanse the chosen site with cleaning solution, starting at the intended point of insertion and circling outwards to include the area surrounding the insertion site (include pubic symphysis and infraumbilical region). Allow the site to dry.
13. Use sterile drapes to create a sterile field surrounding the chosen area of needle entry for SPA-POCUS.
14. Place sterile gel into the end of the sterile ultrasound probe cover.
15. Grab ultrasound probe in the sterile ultrasound probe cover so the ultrasound gel covers the distal end of the probe. Bring sterile ultrasound probe cover over probe connection. Place rubber bands around the head of the probe and then a little further distally.
16. Place sterile gel over the infraumbilical region, 1-2cm cephalad to the pubic symphysis.
17. Using POCUS, re-identify the bladder and confirm urine present.
18. If using POCUS statically, mark the site for needle insertion. Then ok to proceed with SPA without POCUS (continue to follow order below without POCUS).
19. If performing dynamic SPA-POCUS, insert needle attached to syringe just cephalad to the pubic symphysis, aiming the needle slightly cephalad so the insertion is 10-20 degrees off from being 90 degrees to the abdominal wall.
20. Continuously monitor needle tip advancement using POCUS. Needle tip should be present within the bladder.
21. Once the bladder is entered, withdraw urine using syringe attached to needle.
22. When adequate urine obtained (goal at least 2mL), remove needle while holding pressure over needle introduction site.
23. Wipe area clean with sterile saline swab.
24. Place bandage over needle introduction site.
25. Send urine for analysis.
26. Update family on procedure.
27. Document procedure in EPIC using .nicubladdercathpocuspsa smartphrase