Top 10 Forgotten Diagnostic Procedures

Suprapubic bladder aspiration

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Contraindications
Overlying cellulitis, known urinary anatomic abnormality.

Applications
To diagnose lower urinary tract infections when it is not possible to obtain a sample voluntarily or with urethral catheterization.

Equipment necessary
- Local anesthetic (10 mL of 1% lidocaine)
- Needles, if used: 10-cm, 22-gauge spinal needle for localization in adults; 4-cm, 22-gauge needle in pediatric population
- 10-mL syringe
- Sterile urine- and culture-collection container

Set-up
This procedure is best done with the patient in the supine position on an examination table. Before the procedure you must identify the bladder by examining the area. If the bladder cannot be identified, it is advisable to hydrate the patient and wait until the bladder can be identified or to use ultrasound guidance if it is available.

Procedure
This is a sterile procedure. An assistant is necessary to immobilize pediatric patients in the frog-leg position.
1. Use an antiseptic solution to clean the suprapubic area, and drape the patient in a sterile fashion.
2. In the midline, anesthetize the skin approximately 5 cm (no more than half this distance in children) above the pubic symphysis. This step is considered optional in the pediatric patient, as it is thought to cause as much pain as the next step.
3. Direct the 22-gauge spinal needle with the obturator in place through the skin at the same insertion point directing slightly caudad in adults (pelvic organ) or slightly cephalad in children (abdominal organ). Typically, the needle will enter the abdominal bladder after it has been advanced approximately 5 cm (in the adult).
4. Remove the obturator, connect a sterile syringe, and attempt to aspirate urine from the bladder. If none is obtained, advance the needle, with continuous suction on the syringe. If unsuccessful after an additional 5 cm (in the adult), attempt the procedure from step 3 once more. If again unsuccessful, refer to a urologist or attempt using ultrasound guidance.

Evidence and diagnostic confirmation
Our search results revealed numerous studies addressing suprapubic bladder aspiration.1-4 Although these reach differing conclusions, suprapubic bladder aspiration without ultrasound guidance seems to be a reliable method of obtaining urine as long as the patient is hydrated, despite ultrasound guidance having a higher success rate in at least one study (90% vs 64%).1 There are minimal risks associated with unguided bladder aspiration. Another consideration, however, is that suprapubic catheterization seems to be more painful than transurethral catheterization in infants younger than 2 months.5 Diagnostic confirmation is not required, as this is the criterion standard test. Ultrasound guidance can be used in the case of an unsuccessful tap.

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References