Percutaneous Suprapubic Tube Catheter Placement

Created: May 2007
Modified: January 25, 2010
<table>
<thead>
<tr>
<th></th>
<th>Curriculum Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contact Information</td>
</tr>
<tr>
<td>2</td>
<td>Description of Curriculum</td>
</tr>
<tr>
<td>3</td>
<td>Target Trainees</td>
</tr>
<tr>
<td>4</td>
<td>Prerequisite Knowledge and Skills</td>
</tr>
<tr>
<td>5</td>
<td>Goals and Objectives</td>
</tr>
<tr>
<td>6</td>
<td>Instructor Notes</td>
</tr>
<tr>
<td>7</td>
<td>Common Errors &amp; Prevention Strategies</td>
</tr>
<tr>
<td>8</td>
<td>Cognitive Training</td>
</tr>
<tr>
<td>9</td>
<td>Skill Training</td>
</tr>
<tr>
<td>10</td>
<td>Equipment Setup</td>
</tr>
<tr>
<td>11</td>
<td>Assessment Methods</td>
</tr>
<tr>
<td>12</td>
<td>Appendices</td>
</tr>
</tbody>
</table>
1. Contact Information

Thomas Sean Lendvay, MD
Assistant Professor, Urology
Department of Urology
Children’s Hospital and Regional Medical Center
4800 Sand Point Way, NE
Seattle, WA 98105
Phone: (206) 987-4119
Fax: (206) 987-3925

Sara Kim, PhD
Associate Director, Education and Curriculum
Institute for Simulation and Interprofessional Studies
University of Washington
1959 NE Pacific Street, Box 357240
Seattle, WA 98195
Phone: (206) 616-0597
Fax: (206) 598-0809

Josephine Hidalgo-Tamola, MD
Resident, Urology
University of Washington
1959 NE Pacific Street, Box 356410,
Seattle, WA 98195

Megan Sherman
ISIS Program Operations Specialist
Institute for Simulation and Interprofessional Studies
University of Washington
1959 NE Pacific Street, Box 356410,
Seattle, WA 98195
Phone: (206) 598-7779
Fax: (206) 598-0809
2. Description of Curriculum

Course Overview:
Percutaneous catheter placement procedures - suprapubic bladder catheter placement, thoracentesis, paracentesis, epidural placement, and central venous line placement - are widely utilized for the care of pediatric and adult patients. Medical errors in the placement of these catheters contribute to significant patient morbidity. Acute urinary retention (AUR) is a common condition which can affect men, women, and children and is a common indication for urgent care services. [1,2,3] AUR can be managed through medical and procedural means, including percutaneous suprapubic tube placement. Frequently, patients in AUR present to Emergency Departments and need urologic assessment and intervention. The placing of percutaneous catheters is typically performed by the resident after discussion with the attending.

Appendix materials available in this packet:
1. Appendix A: Admission History and Physical
2. Appendix B: Learner Contract
3. Appendix C: Pre-Test
4. Appendix D: Post-Test
5. Appendix E: Debriefing for Trainees
6. Appendix F: Performance Checklist
7. Appendix G: Simulation Evaluation Form
8. Appendix H: Communication Form
9. Appendix I: Needs Assessment Data
10. Appendix J: Lecture Information
11. Appendix K: References

Educational Rationale on How the Course Generalizes to Real-Life Circumstances:

For determining the need and focus of training in percutaneous suprapubic tube catheter placement (SPT), urology faculty and residents from four North American teaching institutions were surveyed. The surveys captured demographic information, SPT experience, beliefs about simulation curricula, the need for ultrasound guidance, and SPT complications (Appendix H). The results of the survey demonstrated numerous complications and demonstrated overwhelming support from both faculty and residents for a standardized SPT curriculum. In addition, the majority of respondents believe that using ultrasound guidance may improve efficacy and patient outcomes and yet most responded that ultrasound guidance is not currently used.

This curriculum, including the newly developed task trainer, cover urologic disease concerning acute urinary retention diagnosis and management. Skills for placing percutaneous SPTs uses the Seldinger technique and can be generalized to other catheter insertion techniques involving tubes being placed into fluid-filled cavities in the body.
2. Description of Curriculum

Duration of Training Session:
- Introduction to module: 15 minutes
- Pre-test (cognitive): 10 minutes
- Cognitive curriculum (CD-ROM/on-line): 45 minutes
- Post-test (cognitive): 10 minutes
- Skills acquisition: 20 minutes
- Debriefing: 15 minutes
- Course evaluation: 5 minutes

TOTAL TIME: 2 hours
3. Target Trainees

Urology Residents PGY-1, -2, -3, -4, -5, -6, -7

**Frequency of Course:**
Each learner will participate in the course twice within a given year. This includes a different cognitive post-test for each session.

PGY-1-7 residents will perform the modules twice a year and will be excused from rotational duties after clearance from the Urology Residency Program Director.

**Number of Trainees per Session:**
One learner will be evaluated at a time.
4. Prerequisite Knowledge and Skills

Learners require the following prerequisite knowledge and skills:

1. Medical school training and background as on basic pelvic anatomy
2. Basic urologic disease pathogenesis
3. Knowledge of the Seldinger technique for catheter-over-needle insertion
4. Basic sterile technique.

Note: The learners do not need prior suprapubic tube placement experience.
5. Goals and Objectives

<table>
<thead>
<tr>
<th>MEDICAL KNOWLEDGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1:</strong> Acquire knowledge of obstructive urologic disease, the differential diagnoses yielding obstructive urinary tract disease, and the various treatment modalities. (ACGME Competencies: Medical Knowledge, Patient Care)</td>
</tr>
<tr>
<td><strong>Objective 1:</strong> Identify obstructive urologic disease.</td>
</tr>
<tr>
<td><strong>Objective 2:</strong> Demonstrate knowledge of the causes/pathogenesis of AUR.</td>
</tr>
<tr>
<td><strong>Objective 3:</strong> Describe treatment modalities for AUR.</td>
</tr>
<tr>
<td><strong>Objective 4:</strong> List the structures/organs of the human pelvis.</td>
</tr>
<tr>
<td><strong>Goal 2:</strong> Acquire knowledge in complications of erroneous catheter insertion and contraindications of performing the procedure. (ACGME Competencies: Medical Knowledge, Patient Care)</td>
</tr>
<tr>
<td><strong>Objective 1:</strong> Describe the contraindications of performing the procedure.</td>
</tr>
<tr>
<td><strong>Objective 2:</strong> Identify structures potentially at risk during percutaneous catheter insertion.</td>
</tr>
<tr>
<td><strong>Objective 3:</strong> Recognize resultant complications of erroneous catheter insertion.</td>
</tr>
<tr>
<td><strong>Objective 4:</strong> Describe management of complications.</td>
</tr>
<tr>
<td><strong>Goal 3:</strong> Demonstrate competency in communication skills by describing the procedure to the patient and obtaining informed consent. (ACGME Competencies: Interpersonal and Communication Skills and Patient Care)</td>
</tr>
<tr>
<td><strong>Objective 1:</strong> Describe to patient need and rationale for SPT in lay terms.</td>
</tr>
<tr>
<td><strong>Objective 2:</strong> Explain all potential complications and benefits associated with SPT placement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TECHNICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1:</strong> Demonstrate competency in technical abilities of sterile technique and percutaneous catheter insertion skills. (ACGME Competencies: Medical Knowledge, Patient Care, Practice-based Learning).</td>
</tr>
<tr>
<td><strong>Objective 1:</strong> Identify all components of SPT kit and necessary equipment.</td>
</tr>
<tr>
<td><strong>Objective 2:</strong> Demonstrate practice of patient safety by identification and confirmation of patient during “Time Out” protocol.</td>
</tr>
<tr>
<td><strong>Objective 3:</strong> Demonstrate mastery in adequate sterile technique.</td>
</tr>
<tr>
<td><strong>Objective 4:</strong> Demonstrate safe disposal of SPT equipment.</td>
</tr>
</tbody>
</table>
5. Goals and Objectives

Technical Goals Cont’d:

**Goal 2:** Demonstrate proficiency in safe and effective placement of a percutaneous suprapubic bladder catheter. (ACGME Competencies: Medical Knowledge, Patient Care, Practice-based Learning).

**Objective 1:** Demonstrate safe, sterile, and effective placement of suprapubic catheter.

**Objective 2:** Demonstrate appropriate fixation of catheter and tubing to patient.
Instructor Notes

1) Module set-up.
   a. Have the mannequin either naked or clothed. (the subject is supposed to prep the patient)
   b. Instructor is to provide all materials for the simulation module
   c. The instructor is to initiate the PowerPoint presentation of the curriculum including the Pre-test, didactics slides, Post-test, and video clip of simulation task training.
      i. Answers to the tests can be written on pre-printed answer sheets for the learners and collected by the instructor.

2) Familiarization with the task module.
   a. The instructor will emphasize the importance of simulation to mimic real time experience.
   b. The instructor must show the learner the mannequin and the available equipment.
   c. Informed patient consent will be obtained by the instructor.
      i. The learner will either go over the informed consent with the instructor or will have an opportunity to ‘talk’ to the mannequin while being microphoned into another room where the instructor will sit and speak into a speaker positioned at the mannequin’s head for real-time informed consent.

3) Simulator maintenance
   a. The instructor will perform maintenance of the simulator abdominal wall skin and simulated bladder between each attempted placement.
   b. For multiple attempts by an individual learner and for multiple learners, the instructor must ensure that the complex tissue model over top of the ‘bladder’ has good integrity for the next needle stick and wipes of any residual ‘urine’ from the field.
   c. The instructor must also ensure that the ‘bladder’ remains near full as the volume of the fluid will decrease with every SPT attempt since the fluid gets aspirated at each pass.
   d. The instructor must remove all drapes between learners so that each learner has an opportunity to demonstrate appropriate sterile technique.

4) Debriefing
   a. The instructor will debrief the learner after completion of the module.
      i. Evaluation of the didactic testing will be assessed.
         A. Discussion of pre and post-test results and verbal explanations of incorrect answers. Passing grade for the post-test is > 80% correct answers.
Debriefing cont’d

B. Video taped performance of the SPT placement for the learner will be reviewed with the learner to detail appropriate processes and errors.

ii. The learner will provide 360 degree feedback to the instructor regarding all aspects of the simulation module including didactics session, testing, module realism and performance, informed consent module, and instructor feedback through a standardized simulation center feedback form (See Appendix G).
7. Common Errors and Prevention Strategies

Potential errors* include:

1) Post-test scores <80%.
2) Incomplete or inappropriate sterile field.
3) Incomplete equipment acquisition during set-up.
4) Improper informed consent or neglected to pause for “Time-Out.”
5) Inappropriate anatomical landmark identification.
6) Inappropriately placed percutaneous catheter resulting in no aspirated fluid.
   a. Too shallow before SPT balloon inflated.
   b. Too deep needle insertion.
   c. Inappropriate angle of incidence.
7) Catheter not appropriately secured to patient.

*Above errors may place patient at higher risk for catheter infection (improper sterile field), other errors include abdominal trauma from decompressed bladder if patient voids under drapes during set-up because penis not prepped in, wrong patient if patient identification and “Time-Out” not performed, organ and vascular injury from misguided needle insertion.

Prevention strategies include:

1) Prepare broad sterile field to include pertinent landmarks and include penis.
2) Study equipment checklist prior to catheter insertion.
3) Review procedure with patient and confirm appropriate patient identification.
4) Mark relevant anatomic landmarks with a pen prior to needle insertion.
5) Ensure perpendicular angle of incidence of needle and aspirate yellow fluid.
   Advance needle 1-2 cm further upon fluid return to ensure needle tip in center of viscus prior to catheter insertion and coiling.
6) Appropriately secure catheter to patient with suture and dressing as well as closed urinary drainage bag.
7) Shaving patients to allow tape to stick effectively.
8) Discussion of diagnosis and proposed procedure with attending prior to the procedure.
9) Post-procedure care and follow-up plan with nursing staff.
10) Post-procedure discussion with attending.
11) Documentation in patient chart.
8. Cognitive Training

The learners will access the cognitive pre- and post-test, as well as the didactics session via a computer-based on-line/CD-ROM PowerPoint presentation. The cognitive session will directly precede the skills training session. The overall didactic outline is as follows, and the Powerpoint materials are attached in Appendix I.

**Didactics Outline**

**Orientation**

a. Purpose of simulation/curriculum module  
b. Organization of module  
   1. Cognitive Pre-test  
   2. Didactics  
   3. Cognitive Post-test  
   4. Instructor supervised simulation training  
   5. Debriefing post-test  
   6. Debriefing skills acquisition

1) **Cognitive Pre-test**

   10 multiple choice questions

2) **Didactics**

   a. Definition of Acute Urinary Retention (AUR)  
   b. Pathophysiology of AUR  
   c. Pelvic/GU anatomy review  
   d. Diagnosis of AUR  
   e. Non-invasive management of AUR  
   f. Procedural management of AUR  
   g. Informed Consent  
   h. Communication with attending, nursing staff and chart documentation

4) **Cognitive Post-test**

   a. Results of the post-test will be reviewed by the instructor with the student/resident. Pass grade is 80% correct.

5) **Simulator Introduction**

   a. Technology description  
   b. Goals of task trainer  
      - Sterile technique  
      - Equipment check-list  
      - Procedure safety and efficacy  
      - Critical errors identification
8. Cognitive Training

Simulator Introduction Cont’d

- Informed consent
- c. Video demonstration
- d. Simulator limitations disclosure
- e. Reality review
  - Communication
    - Patient
    - Family
    - Attending
    - Nursing staff
    - Documentation in patient chart
  - Shave hair
  - Share with patient the steps of the procedure
Introduction:

The learner will be introduced to the simulation trainer and oriented to the capabilities and limitations of the simulator.

THE BELOW STEPS WILL BE VIDEO-TAPPED FOR SUBJECT FEEDBACK AND DEBRIEFING

Sterile Technique:

The learner will be able to perform sterile technique after reviewing a computer-based video of sterile technique performed by an expert on the simulator and on a human male cadaver.

Suprapubic Tube Equipment Set-up:

The learner will be able to acquire the necessary instruments and catheter kits to perform the procedure. This will be initially demonstrated on a computer-based video showing the same desired steps performed by an expert on the simulator.

Percutaneous Catheter Insertion:

The learner will view a video demonstration of expert SPT placement on both a cadaver and on the simulator. The learner will then perform the task while being video-taped. Successful insertion will be registered by appropriate passage of the catheter into the fluid-filled structure (bladder).

Steps for successful completion of the percutaneous suprapubic catheter insertion:

- 1. Discuss indications of the procedure with the attending and rationale for placement of an SPT rather than urethral drainage. Address duration of SPT drainage and plans for removal.
- 2. Notify nursing staff of the procedure.
- 3. Ensure that all equipment is present and easily accessible from patient’s bedside.
- 4. Obtain informed consent.
- 6. Position the patient in a supine Trendelenberg (30 degree down) orientation.
- 8. Locate your landmarks and mark with pen 2 finger breadths above the pubis in the midline. Verify that no previous abdominal surgery has been performed by looking for scars.
  - US guidance may be employed for abnormal anatomy.
- 9. Prep a wide sterile field from above the umbilicus to the perineum.
  - Tips:
    - If male patient, the penis should be visualized at all times to avoid missing a spontaneous void under the drapes.
thereby decompressing the bladder before needle insertion.

☐ 10. Attach a 25 G needle to a 5 or 10 cc syringe containing 1 % Lidocaine. Raise a skin wheal at the previously marked site.

☐ 11. Withdraw the needle and replace with 22 G needle and infiltrate Lidocaine into subcutaneous fat, fascia, and deep tissues.
   - Tips:
     - Make sure to intermittently aspirate after going deeper with needle to avoid intravascular injection of local anesthetic.
     - Keep needle perpendicular to abdominal wall.
       - If obese patient, keep needle perpendicular to spine position.

☐ 10. Remove needle and empty Lidocaine out of syringe.

☐ 11. Attach 25 G spinal needle to syringe and insert needle while aspirating for urine.
   - Tips:
     - Once urine located, remember orientation of spinal needle and depth of needle upon urine return for judging placement of SPT needle.

☐ 12. Remove spinal needle and incise skin/fascia with 11 blade in vertical midline fashion to accommodate a 16F SPT.

☐ 13. Insert SPT needle perpendicular to fixed abdominal or spinal landmarks and aspirate for urine return.
   - Tips:
     - Once urine can be aspirated, advance SPT needle 2 more cm to ensure that entire catheter is within bladder.
     - If catheter is advanced prematurely, the catheter may coil outside of the bladder.

☐ 14. Advance outer SPT sheath over needle without withdrawing needle from current position.
   - Tips:
     - If needle is not kept in position during catheter advancement, tube may coil outside of the bladder.

☐ 15. Retract string to coil catheter end in bladder or inflate anchoring balloon depending on catheter kit used.

☐ 16. Connect SPT tubing to closed urinary drainage system.

☐ 17. Secure catheter at the base of the skin incision with suture and dress wound.

☐ 18. Clean off patient and secure redundant tubing.

☐ 19. Dispose of sharps properly.


☐ 21. Communication with patient and family, attending, nursing staff and provide appropriate signout to primary medical team.
10. Equipment Set-up

1. Mannequin-based SPT simulator

The catheter insertion simulator is designed for use with a Laerdal SimMan mannequin placed in a supine position. The central pelvic piece containing the bladder reservoir is disconnected and removed from SimMan, leaving a trapezoidal hole that opens up into a cavity that is approximately 15 cm deep. A surgical suction bulb filled with yellow liquid is used to represent the bladder. The goal is to suspend this bulb within the cavity, just below a layer of simulated tissue. To accomplish this, a custom-sculpted foam cradle is placed into the cavity. The foam is very dense and does not compress significantly. The foam cradle has a depression in which the surgical bulb rests snuggly. The foam cradle also provides support for a 25 mm thick piece of simulated skin, which is placed directly over the bulb and covers the opening of the cavity. The corners of the simulated tissue are trimmed so that the piece fits within the opening, flush with the surface of the mannequin. The simulated skin is provided by Simulab Corporation™ and includes multiple layers including subcutaneous fat, subdermal fascia, and peritoneal fat.

Image A: Laerdal SimMan Mannequin
10. Equipment Set-up

Equipment Checklist:

1. Mannequin (Laerdal SimMan)
2. Consent form
3. Suprapubic tube kit: 16F Rutner® percutaneous suprapubic catheter kit (Cook Medical)
   a. Inner rigid catheter needle
   b. Outer SPT catheter
   c. 11 Blade (Microvasive kit only)
4. 10 cc syringe X 2
5. 5 cc syringe
6. Sterile drape or sterile towel pack
7. Sterile gloves
8. Guaze (1 box)
9. 3-0 Nylon or Silk suture on cutting needle
10. Needle driver and forceps
11. Scissors
12. Spinal needle (22 or 25 guage)
13. Short 25 guage needle (for skin)
14. Long 22 guage needle (for subcutaneous fat/muscle/fascia)
15. Foley urinary drainage bag or leg bag
16. 1% Lidocaine (10cc vial)
17. Sterile gauze dressing
18. Adhesive tape
19. Betadine or Chlorhexadine prep solution (depending on patient allergies)
20. Marking pen

Media Materials:

1. Video camera (with audio recording capabilities)
2. Adequate lighting
### 11. Assessment Methods

<table>
<thead>
<tr>
<th>Type(s) of Assessment Methods Used in This Course</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test Only</td>
<td>Team Evaluation Form</td>
</tr>
<tr>
<td>✔ Pre-test + Post-test</td>
<td>✔ Debriefing</td>
</tr>
<tr>
<td>Post-test Only</td>
<td>✔ ISIS Evaluation Form</td>
</tr>
<tr>
<td>✔ Performance Checklist</td>
<td>✔ Communication Form</td>
</tr>
<tr>
<td>Appendix</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Admissions History and Physical</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Learner Contract</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Pre-Test</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Post-Test</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Debriefing for Trainees</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Performance Checklist</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Simulation Evaluation Form</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Communications Form</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Needs Assessment Data</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Face and Content Validity Study data</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Lecture Information</td>
</tr>
<tr>
<td>Appendix L</td>
<td>References</td>
</tr>
</tbody>
</table>
Appendix A: Admission History and Physical

Admission History and Physical:

**CC: Inability to void urine for 12 hours**

HPI: A 38 year old African-American male presents to the Harborview ED with inability to void over the last 12 hours and an increasingly painful abdomen. He reports that yesterday he began having to strain more to void and that only a little urine came out each time. This morning it took him 30 minutes to drain out what he thought was only about a third of his normal volumes. He denies hematuria but recounts that he had a similar episode 4 months ago and he required a Foley catheter placement that was traumatic with blood seen at the meatus after a painful insertion. He had only slight dysuria and no associated fevers, chills, nausea, vomiting, lightheadedness, coordination changes, motor weakness, or trauma to perineum. He reports that he has strained to void for the last 10 years. He also cites a distant history of taking some kind of antibiotics for penile discharge when he was 28 years old.

1. **All:** None
2. **Meds:** sporadic HTN med that he cannot remember the name of
3. **PMHx:** HTN, probable STD
4. **SocHx:** EtOH, 12-pack beer/week and he reports having had 3 beers earlier today because he thought that they would help him relax to urinate; neg tobacco; distant illicit Rx use (marijuana); works as bouncer at Cowgirls, Inc. in Pioneer Square. In monogamous relationship with a married woman.
5. **FamHx:** HTN in mother and father, father with some “prostrate” problem, not Ca
6. **ROS:** 12/14 systems negative, CV: +HTN X 5 years, GU: probable STD, urinary straining, dribbling, weak stream

**Pertinent PE:**
1. **Vitals:** HR 104, BP 142/90, Temp 37, RR 20
2. **Gen:** Mild obesity, no trauma, some discomfort but sociable
3. **CV:** mild tachy
4. **Chest:** clear
5. **Abd:** lower abdominal diffuse tenderness, no peritoneal signs, + BS, palpable midline balottable abdominal mass half way up to umbilicus
6. **GU:** Uncircumcized phallus, retractable foreskin, no lesions, no urethral discharge, testes without masses/tenderness, slight urine staining of boxers, no abdominal surgical/trauma scars, no bruits
7. **Ext:** no femoral bruits
Learner Contract
This simulation curriculum is designed to educate you in the recognition of a common urologic disorder that you will encounter in your training and your profession. Simulation is a training method that approximates real life and offers a safe environment to make mistakes. Educators understand that simulation is not real life and circumstances in simulation do not always approximate real patient concerns and anatomy. This simulator tries to afford the learner with tools necessary to, understand the pathophysiology of AUR; be able to discuss the disease and acute management with your patient; and demonstrate assimilation and synthesis of cognitive and technical skills for safe and accurate catheter placement.

If you feel that undue pressure has been placed upon you during the module, please feel free to discuss this with your instructor during the debriefing. Performance during this simulation module will be monitored for feedback purposes and all information regarding each learner’s performance will be kept confidential from your peers and will only be reviewed by the instructors for quality control and by your Residency Program Director and Department Chairperson.
Appendix C: Pre-Test

Pre-Test

Base-line knowledge of the learner for urologic obstructive disease will be tested with a computer-based multiple choice Pre-test. Answers are in bolded font.

Name: __________________________________________
Date: __________________________________________
Training Level: _________________________________

• 1. 1) The following are risk factors for acute urinary retention except…
   • A) Elevated PSA
   • B) Prior office cystoscopy
   • C) Finasteride therapy
   • D) 80 gm prostate on DRE
   • E) History of hypospadias repair as a child

• 2) The following are anatomic landmarks for suprapubic catheter insertion except…
   • A) Pubic symphisis
   • B) Anterior iliac crests
   • C) Umbilicus
   • D) Greater trochanter of the femur
   • E) Femoral vessels

• 3) The following are relative contraindications for performing suprapubic tube placement guidance except…
   • A) Emaciated patient
   • B) Prior open right hemicolecotomy
   • C) Severe kyphoscoliosis and hip contracture
   • D) Augmentation ileocystoplasty history

• 4) The following medications can place a patient at risk for acute urinary retention except…
   • A) Detrol LA® 2 mg
   • B) Cardura® 4 mg
   • C) MS Contin® 100 mg
   • D) Baclofen® 20 mg
   • E) Benadryl® 25 mg

• 5) The following steps aid in safe SPT placement except…
   • A) Prepping the penis in the field
   • B) Trendelenberg bed position
   • C) Ultrasound guidance
   • D) Bladder palpation / percussion
   • E) Patient supine with knees bent
Appendix C: Pre-Test

- 6) Informed consent does not need to be obtained if the patient has undergone SPT placement in the past.
  - A) True
  - B) False

- 7) The most significant structure potentially injured from the needle trajectory is…
  - A) Sacral prominantory
  - B) Seminal vesical
  - C) Bladder
  - D) Iliac vessels
  - E) Sciatic nerve

- 8) A Foley catheter has been shown to improve trial of void outcomes for indwelling times of…
  - A) 24 hours
  - B) 1-3 days
  - C) 4-5 days
  - D) at least 7 days

- 9) When attempting urethral catheter placement in a patient with a possible urethral stricture one should first try
  - A) a large diameter urethral catheter
  - B) filiforms before any catheter attempt
  - C) suprapubic catheter placement
  - D) a small diameter urethral catheter

- 10) List FOUR elements of an informed consent that will ensure a patient understands SPT placement.
  
  A) Reasons for procedure
  B) Risks of procedure
  C) Future plans and indwelling time
  D) Risk of conversion to open SPT placement
11) Matching:

1) External iliac vein
2) Rectum
3) Bladder
4) Pubic symphysis
5) Internal iliac artery
6) Obturator nerve
7) Median umbilical ligament
8) External iliac artery
Appendix D: Post-Test

Post-Test

Following the didactics session, the trainee must successfully pass (>80%), a computer-based Post-test before continuation to the skills portion of the simulation module. Answers are in bolded font.

1) List SIX potential complications of percutaneous suprapubic tube placement.
   - Malpositioned catheter, vascular injury, bowel injury, injury to adjacent organs, bladder/bladder neck injury, pain, infection/sepsis

2) List THREE classes of medications known to cause acute urinary retention.
   - Anticholinergics, anti spasmodics, opiods, antihistamines, neurelptics

3) List THREE steps of patient positioning/set-up which may reduce the risk of procedural morbidity.
   - Position patient supine
   - Prep the penis into the field
   - Trendelenburg
   - Retract pannus for obese patients

4) List THREE relative contraindications to performing SPT placement.
   - Prior abdominal surgery
   - Confusing/restrictive anatomy: severe contractures and palpable abdominal or femoral bruits
   - Enterocystoplasty
   - Unchecked/uncorrected coagulopathy

5) List FOUR known risk factors for developing acute urinary retention.
   - Increased age
   - Large prostate
   - Low peak uroflow
   - High PSA
   - Pre-existing voiding symptoms

6) List THREE indications for placement of a SPT.
   - Acute urinary retention
   - Inability to place urethral catheter
   - Traumatic urethral disruption

7) List TWO risk factors for recurrence of acute urinary retention.
   - Peak uroflow < 5 ml/s
   - Average voided volume <150 ml
   - Age > 75 years
   - Drained urine volume > 1L
### Appendix D: Post-Test

- **Bladder contraction pressure < 34 cm water**

- **8) List TWO physical exam findings concerning for a urethral injury in a trauma patient**
  - Blood at the urethral meatus
  - High riding prostate

- **9) List TWO steps to help identify relevant landmarks in patients who are morbidly obese and present with a hanging pannus.**
  - Assistant to pull pannus cephalad
  - Secure pannus with broad tape

- **10) What is post-obstructive diuresis and how is it managed?**
  - Urine output > 125-200 ml/h
  - Monitor for electrolyte abnormalities. Allow an alert patient to match UOP by drinking fluids. For a non alert patient match UOP ½ cc NS to 1 cc UOP.
Appendix E: Debriefing for Trainees

Debriefing Questions

The Basic Assumption for the debriefing is:
We believe that each learner participating in the simulation scenario is intelligent, well-trained, cares about doing their best, and wants to improve.

- Critique the performance, not the individual
- Ask open ended questions – avoid yes/no questions
- Stress importance of communication as well as acquiring necessary skills
- Consider using “SMART” feedback
  - Specific
  - Measurable
  - Achievable
  - Relevant
  - Timely
- Providing feedback to learners
  - Offer positive feedback
  - Invite self-reflection
  - Listen
  - Ask permission
  - Present the problem
  - Normalize the experience
  - Exchange, discuss and elevate

Framework for debriefing:

A. Reactions

* Clear the air and set the stage for discussion
* Facts

1) What happened?
   - Participants often want to know “the answer”
   - Stick to the facts
2) How did you feel about that?
   - Accept expressions of feelings
     (a) Acknowledge is not the same as agree
     (b) Try to mirror feelings rather then evaluate them
     (c) Don't tell participants "that's OK" if it is not. Acknowledging that a specific maneuver was incorrect is part of the learning process.
   - Give perspective if participant feelings are hurt. e.g.:
     (d) I've seen this a dozen times and that happens nearly every time ... or
     (e) I've made the same mistake ... or
     (f) We all make mistakes and this is a good place to learn from them or ... Remind them of the Basic Assumption and say that we'll work together to figure out what happened ... of ...

B. Understanding

Remember to use Advocacy-Inquiry: be curious!
- Exploring
- Applying
Appendix E: Debriefing for Trainees

♦ Generalizing

   ♦ What were you thinking at the time?
   ♦ What do you think happened?
   ♦ What would you do differently next time?
   ♦ It looked to me like …..
     *(Use this to discuss some error you observed and would like to find out why the student chose a particular course of action)*
   ♦ How do you account for that?
   ♦ Why did that happen?
   ♦ What led to it? What next?

2) Applying
   ♦ What drug or procedure or behavior might be best?
   ♦ Have you ever done this clinically?
   ♦ How might this be reflected in your clinical practice?

Debriefing Cont’d:

3) Generalizing
   ♦ Have you ever seen anything similar to this in your practice?
   ♦ Are there analogies to the clinical world?
   ♦ What can be done in analogous situations?

C. Summary

*Review what was learned and ensure the single scenario is put into a larger context.*

1) Relate this experience to higher level principles, e.g., principles of sterile technique, informed consent acquisition, procedure organization
2) What did you do well?
3) What would you do differently?
4) How might you teach this differently
Appendix F: Performance Checklist

A performance checklist is filled out by the course instructor based on direct visualization of the real-time procedure and follow-up video assessment. The same checklist will be given to the learner to fill out to reinforce successful and missed steps by the learner.

Performance Checklist

☐ Communicate with attending regarding plan and indications for SPT placement.
☐ Obtain informed consent.
☐ “Time Out” before starting, verify patient’s identity.
☐ Position patient appropriately (Supine).
☐ Locate landmarks and mark sites correctly.
☐ Sterilely prep and drape area.
☐ Use 1% Lidocaine for infiltrating skin with 25 guage needle.
☐ Use 1% Lidocaine for infiltrating deep tissues with 22 guage needle.
☐ Needle inserted in midline 2 finger breadths above pubis.
☐ Insert spinal needle perpendicular to abdominal wall during insertion.
☐ Aspirate while inserting for return of urine as bladder locator.
☐ Make vertical midline incision in skin with 11 blade.
☐ Assemble SPT catheter needle properly with aspiration syringe.
☐ Insert SPT whilst aspirating.
☐ Once urine return, continue insertion 2 cm.
☐ Slide outer SPT catheter into bladder without withdrawing needle.
☐ Pull and secure J string (Microvasive and Cook) or inflate balloon (Cook).
☐ Retract SPT to anchor point.
☐ Secure tube to skin with drain stitch.
☐ Dress wound and clean off patient.
☐ Attach SPT to closed urinary drainage system.
☐ Shave an area for the tape if necessary.
☐ Secure redundant tubing to skin with tape.
☐ Appropriately dispose of sharps.
☐ Document SPT placement procedure in patient’s chart.
☐ Communicate with attending, patient/family, nurse and other medical providers.
## Appendix G: Simulation Evaluation Form

### Rating

Strongly disagree ➔ strongly agree  
1-5  
NA  0

### Simulation Evaluation

1) Learners should spend more time working with the simulator  
2) The course enhanced my understanding of how to handle critical incidents situations and crises  
3) The simulation was an effective educational tool  
4) The simulation experience provides a realistic model of working in a clinical setting  
5) The debriefing session was an important learning opportunity  
6) What issue(s) would you like addressed in future simulation sessions?  
7) Comments:

### Content Evaluation

1) The content was:  
   a) Current  
   b) Best practice  
   c) Free of bias  
   d) Relevant to my practice  
2) I will change my practice based on the information presented  
3) The educational level of this activity was appropriate  
4) The most important concept learned during this session that may contribute to a change in patient care is:

### Instructor Evaluation

1) The instructor had a good command of the content  
2) The instructor’s presentation was clear & concise  
3) The instructor clearly demonstrated the required skills  
4) The instructor created a safe environment for the debriefing  
5) The instructor was an effective facilitator  
6) The instructor feedback was helpful  
7) Overall, the instructor contributed to my learning  
8) Comments:
Appendix H: Communication Form

A communication form is filled out by the course instructor which documents that the appropriate personnel have been notified about the procedure. The same form is given to the learner.

**Communication**

**Pre-procedure**
- [ ] Discuss procedure and indications with attending physician
- [ ] Obtain informed consent from the patient
- [ ] Discuss with patient and family duration of catheterization and further management plans
- [ ] Discuss with nursing staff appropriate care of SPT
- [ ] Discuss management with primary medical team for the patient

**Post-procedure**
- [ ] Discuss outcome and improvements on the procedure with attending physician
- [ ] Discuss outcome and plan with patient and family
- [ ] Discuss with nursing staff appropriate care of SPT
- [ ] Discuss management with primary medical team for the patient
Appendix I: Needs Assessment Data

Faculty Response: n = 39

Who Should Teach The Residents?

- Residents: 1
- Fellows and Faculty: 7
- Both: 36
Appendix I: Needs Assessment Data

Resident respondents: n = 30

Post-graduate year when procedure taught

![Bar chart showing the distribution of post-graduate years (PGY) for when procedures were taught. The chart indicates that the majority of procedures were taught in PGY 2, with 13 residents in PGY 1, 21 in PGY 2, and 4 in PGY 3. There were no responses in PGY 4 and 5.]
Appendix I: Needs Assessment Data

Resident respondents: n = 30

Number of SPTs placed

- 6 respondents placed 0 SPTs
- 20 respondents placed less than 5 SPTs
- 8 respondents placed 5 to 10 SPTs
- 4 respondents placed 11 to 20 SPTs
- 5 respondents placed more than 20 SPTs
Appendix I: Needs Assessment Data

Resident respondents: n = 30

PGY year of SPT teacher

- Attending/Fellow
- Senior resident (PGY 4-6)
- Junior resident (PGY 1-3)
- Self Taught
Appendix I: Needs Assessment Data

Faculty respondents: n = 39

Resident respondents: n = 30

Have you heard of or seen a complication from SPT placement

Number of respondents

Yes
No

Faculty
Residents

0 5 10 15 20 25 30 35 40 45 50
Appendix I: Needs Assessment Data

Faculty respondents: n = 39
Resident respondents: n = 30

Types of complications encountered during SPT placement

- Bladder Injury
- Bowel Injury
- Vascular Injury
- Significant Hematuria
- Malposition of SPT
- Bladder Neck Injury
- Peritoneal Laceration
- Uterine Placement
- Excessive Pain
- Hemoperitoneum
- Skin Bleed
- Transpleural placement
- Loss of Access

[Bar chart showing the frequency of complications with Faculty and Resident respondents]
Appendix I: Needs Assessment Data

Faculty respondents: n = 39
Resident respondents: n = 30

Would a simulation module for SPT placement help train residents?

<table>
<thead>
<tr>
<th></th>
<th>Faculty</th>
<th>Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

# of respondents
Appendix I: Needs Assessment Data

Faculty respondents: n = 39
Resident respondents: n = 30

Would patient safety be improved by an SPT training module?

- **Yes**
  - Faculty: 39
  - Residents: 30

- **No**
  - Faculty: 0
  - Residents: 10
Appendix J: Face and Content Validity Study

Prior to implementing the curriculum as a component of residency training, it requires validation as an effective platform for teaching trainees. We performed a face and content validity study to evaluate the realism of the mannequin simulator as an SPT model and the appropriateness of the simulator as teaching modality for the AUR curriculum.

Table 1: Face validity of SPT simulator (n=9)

<table>
<thead>
<tr>
<th>Evaluating Question</th>
<th>Responses (1=Difficult, 3=Average, 5=Easy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How was the SPT simulator to use?</td>
<td>0 1 1 2 4</td>
</tr>
<tr>
<td>Are you able to identify appropriate landmarks for SPT placement?</td>
<td>0 2 4 1 2</td>
</tr>
<tr>
<td>Are you able to create an adequate sterile field using the simulator?</td>
<td>0 0 1 3 5</td>
</tr>
<tr>
<td>Does the abdominal skin adequately simulate the force necessary to place an SPT?</td>
<td>1 0 3 4 1</td>
</tr>
<tr>
<td>Does the simulated bladder function adequately to determine proper placement?</td>
<td>0 2 1 3 3</td>
</tr>
<tr>
<td>Is the SPT simulator a realistic practice format?</td>
<td>0 0 3 4 2</td>
</tr>
</tbody>
</table>
## Appendix J: Face and Content Validity Study

### Table 2: Content validity of SPT simulator by residents with >10 SPT placements (n=5)

<table>
<thead>
<tr>
<th>Evaluating Question</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the SPT simulator useful for training?</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>(1=no, 3=somewhat, 5=yes)</td>
<td>0 0 1 2 2</td>
</tr>
<tr>
<td>Do you recommend incorporating the SPT simulator into resident training?</td>
<td></td>
</tr>
<tr>
<td>(1=no, 5=yes)</td>
<td>0 0 0 0 5</td>
</tr>
<tr>
<td>Is the SPT simulator appropriate for training before placing a SPT into a patient?</td>
<td></td>
</tr>
<tr>
<td>(1=no, 5=yes, 6=don't know)</td>
<td>0 0 1 0 2 2</td>
</tr>
<tr>
<td>Could the SPT simulator be used as a privileging or certifying device?</td>
<td></td>
</tr>
<tr>
<td>(1=no, 5=yes, 6=don't know)</td>
<td>2 1 0 0 1 1</td>
</tr>
</tbody>
</table>
Appendix K: Lecture Information

**ISIS Curriculum**

**Urology: Acute Urinary Retention**
Josephine Hidalgo-Tamola, M.D.
Thomas S. Lendvay, M.D.

**Definition**

- Painful inability to urinate with relief of pain following bladder drainage
- 1 in 10 men over 70 yrs within 5 years
- 1 in 3 over 80 yrs

**Pathophysiology**

- Increase outflow resistance
  - Mechanical
    - Stricture
    - Foreign object
  - Dynamic
    - Increase smooth or striated muscle tone
- Impaired detrusor contractility
- Impaired bladder sensory or motor innervation

**H+P**

- History of voiding cessation
- AUA urinary symptoms
  - Nocturia
  - Dysuria
  - Urinary frequency
  - Urinary hesitancy
  - Decreased urinary stream caliber
Appendix K: Lecture Information

**H+P**

- Medications
  - Anticholinergics / Antispasmodics
  - Opioids
  - Antihistamines
  - Neuralexptics
- PMIhx
  - Prior urethral / bladder surgery
    - Adult or childhood
  - Pelvic surgery
    - Pelvic nerve damage

**H+P**

- Abdominal distention
  - Suprapubic region
  - Percuss abdomen
    - Characteristic fluid dullness
- Abdominal tenderness/
  fullness
- Recognize abdominal surgical scars
Appendix K: Lecture Information

Differential Diagnosis

- Men
  - Benign prostatic enlargement (BPE)
  - Urethral stricture
  - Urethral trauma
  - Malignant enlargement of the prostate
  - Prostatic abscess
  - Bladder neck contracture

Differential Diagnosis

- Women
  - Pelvic prolapse
  - Urethral diverticulum
  - Post surgery for stress incontinence
  - Fowler’s syndrome
    - dec relaxation of the ext sphincter
  - Pelvic masses
Appendix K: Lecture Information

**Differential Diagnosis**

- Either sex
  - Pelvic rupture rupturing the urethra
- Drugs
  - Anesthetics, anticholinergics, sympathomimetic agents (ephedrine in nasal decongestants)
- Abdominal or pelvic surgery
- Immobilization after surgical procedures
- Cauda equina compression
- Neurotropic viruses involving S2-S4 (herpes simplex)

**Overdistention**

- Common after surgery (general anesthesia)
- Decrease in bladder sensation
  - Opioids
  - Anticholinergics
- Increase outlet resistance
  - High adrenergic tone (stress)

Appendix K: Lecture Information

Risk Factors

- Minnesota community study
  - Increased risk with age
  - Large prostate (RR 2.0, 95% CI 1.0-9.0)
  - Low peak uroflow (RR 3.9, 95% CI 2.3-6.6)
  - High PSA
  - Pre-existing voiding symptoms

Trauma

- Causes
  - Urethral disruption
  - Foreign body
  - Suspect urethral injury with the presence of blood at the urethral meatus and/or high riding prostate
  - Posterior urethra in men most common site of injury
Trauma

- Retrograde urethrogram (RUG) prior to passage of catheter
- Placement of suprapubic tube if RUG shows contrast extravasation

Acute Management
Appendix K: Lecture Information

### Acute Urinary Retention

**Labs:** Chem-10, CBC, Urinalysis, Urine culture

Place urethral catheter or suprapubic tube to decompress bladder

<table>
<thead>
<tr>
<th>IV antibiotics</th>
<th>Yes</th>
<th>Fever $&gt;38^\circ$C or elevated V&amp;C?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boggy and/or fluctuant prostate on rectal exam</td>
<td>No</td>
<td>UA positive and UTI symptoms? Creatinine at baseline?</td>
</tr>
<tr>
<td>CT with IV contrast to evaluate for prostatic abscess</td>
<td>Yes</td>
<td>DVC with PO atx and alpha blocker, F/U for voiding trial in 1-2 weeks</td>
</tr>
<tr>
<td>Admit for IV antibiotics to treat acute bacterial prostatitis, Urology outpatient follow-up</td>
<td>No</td>
<td>Observe in hourly urine output in ER for 2 hours after initial bladder drainage</td>
</tr>
<tr>
<td>OR for transurethral resection of prostatic abscess</td>
<td>Yes</td>
<td>Admit for postobstructive diuresis</td>
</tr>
<tr>
<td>No</td>
<td>Urine output $&gt;1500$ mL?</td>
<td></td>
</tr>
</tbody>
</table>

### Improving Trial of Void

- Increased indwelling catheter time
  - 62% passed voiding trial after 7 days of catheter drainage vs 44% immediate removal
- Longer duration for retention vol $>1.3$ L
- Concomitant $\alpha$-blockade therapy
Appendix K: Lecture Information

Medical Treatment

- 5α-reductase inhibitors
  - Risk halved
  - Causes prostate cell apoptosis
- α-blockade
  - Prostatic smooth muscle relaxation
  - Some bladder neck smooth muscle relaxation

Recurrence

- 50% fail trial of void within one week
- 60% repeat AUR within one month
- 70% repeat AUR within 1 year
- 90% recurrence if peak uroflow < 5 mL/s and average voided volume <150ml
- Recurrence risks
  - Age > 75 yrs
  - Drained urine volume > 1 liter
  - Bladder contraction pressure < 34 cm H20
Appendix K: Lecture Information

Bladder decompression

- Urethral catheter (slow, gradual pressure)
  - For h/o benign prostatic hypertrophy (BPH)
    - Use larger catheters (20-24 Fr)
    - Helps displace obstructing BPH nodules
  - For h/o stricture disease
    - Use smaller catheters (12-18 Fr)
    - Helps navigate narrowed scar

- Bedside cystoscopy for difficult catheterizations

- If unable to place urethral foley then place suprapubic tube

Suprapubic tube placement

Components:
1. Procedure discussion with attending
2. Informed consent
3. Supplies
4. Time-out
5. Sterile draping
6. SPT placement
7. Confirmation of adequate placement
8. Procedure documentation and attending debriefing
• Empty bladder lies on pelvic floor surrounded by extraperitoneal fat
  • Posterior to the pubic symphysis
• Distended bladder ascends reaching as high umbilicus
• In males - situated anterior to rectum and superior to prostate
• In females - anterior to vagina and anteroinferior to uterus
• Superior surface is covered with peritoneum
• Ureters enter bladder at posterolateral angles of trigone
  • Located at posterior base of bladder

### Supplies

<table>
<thead>
<tr>
<th>Suprapubic tube kit</th>
<th>Scissors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10cc syringe x 2</td>
<td>Spinal needle</td>
</tr>
<tr>
<td>5cc syringe</td>
<td>Short 25 gauge needle for</td>
</tr>
<tr>
<td>Sterile drapes</td>
<td>skin</td>
</tr>
<tr>
<td>Sterile gloves</td>
<td>Long 22 gauge needle for</td>
</tr>
<tr>
<td>1 box gauze</td>
<td>fascia</td>
</tr>
<tr>
<td>3-0 nylon or silk suture</td>
<td>Foley urinary drainage bag</td>
</tr>
<tr>
<td>Needle driver</td>
<td>1% lidocaine</td>
</tr>
<tr>
<td></td>
<td>Adhesive tape</td>
</tr>
<tr>
<td></td>
<td>Betadine prep solution</td>
</tr>
</tbody>
</table>
Appendix K: Lecture Information

Technique
- Position patient supine
- Drape suprapubic area and penis steriley
- Mark site 2 fingerbreadths above the symphysis pubis
- Inject local anesthetic into skin and fascia into the site
- Use a 21G spinal needle attached to a syringe to find the bladder. Aspiration of urine confirms entry into the bladder.
- Insert the SPT catheter and sharp obturator in the same trajectory
- Urine efflux confirms placement
- Advance the catheter and remove the obturator
- Inflate the balloon
- Apply a sterile dressing and attach the catheter to a gravity drainage bag

Relative Contraindications
- Prior abdominal surgery
  - Adhesions
  - Violated space of Retzius
- Confusing / restrictive anatomy
  - Severe contractures
  - Palpable abd/femoral bruits
- Enterocystoplasty
  - Altered vascular anatomy (intestinal pedicle)
- Unchecked / uncorrected coagulopathy
Appendix K: Lecture Information

Unique Circumstances

Obese patient
- Have assistant pull pannus cephalad to expose suprapubic region
- Alternatively, secure cephalad position/retraction of pannus with broad tape

Trauma

- SPT placement aids during primary urethral realignment
- If bladder cannot be palpated then open suprapubic tube placement
- Broad spectrum antibiotics
- Voiding cystourethrogram in 2 weeks
Appendix K: Lecture Information

Informed Consent

- Patient or legal guardian
- Explain reasons for procedure
  - Lay person's terms
- Explain risks of procedures
- Discuss future plans and indwelling times

Post procedure considerations

- Record volume of urine obtained
- Hematuria: 2-16%
- Hypotension
- Postobstructive diuresis:
  - UOP > 125-200 ml/h
  - Monitor for electrolyte abnormalities
  - Alert patient PO to match UOP
  - For non-alert pt match UOP 1/2 cc NS to 1 cc UOP
- Communication
  - Document procedure in chart
  - Discuss plan with patient and family
Appendix K: Lecture Information

Patient #1
- Learner is to review Admission H+P
- Consent patient
- Gather supplies
- “Timeout”
- Prep field
- Perform SPT placement

Admission H+P
- 79 y/o AAM with h/o BPH started having worsening urinary dribbling and incomplete emptying over the last 2 weeks
- Last night he tried to void three times unsuccessfully and presents with abdominal discomfort
Appendix K: Lecture Information

Admission H+P
- Pt denies fever, hematuria, N/V
- NKDA
- Meds:
  - Doxazosin 8 mg qHS
  - Omeprazole 20 mg daily
  - Propranolol 10 mg BID

Admission H+P
- PMHx:
  - BPH
  - GERD
  - HTN
- PSHx:
  - None
- SocHx:
  - 2 ppd tobacco
- FamHx, EnvironHx:
  - No bleeding dyscrasias
Appendix K: Lecture Information

Admission H+P

- PE:
  - Palpable midline lower abdominal mass
    - Dull percussion from below umbilicus to symphysis
  - Mild diffuse abdominal tenderness
  - Normal GU exam
  - DRE
    - 80 gm prostate, no nodules, smooth, non-tender
  - Normal femoral pulses
  - No abdominal or femoral bruits
Appendix L: References


8) Swartz, M: ER algorithms for Urology. (unpublished data)