The Evidenced-Based Approach to Managing Postoperative Urinary Retention (POUR)

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Conflict of Interest

We hereby certify that, to the best of our knowledge, no aspect of our current personal or professional situation might reasonably be expected to affect significantly our views on the subject on which we are presenting, other than the following.

Objectives

- Identify three risk factors associated with POUR
- Discuss the assessment and treatment of POUR
Poll Question #1

- The first urge to void is felt at ___cc’s?
  - 150
  - 200
  - 300
  - 500

Bladder Function: Normal Physiology of Urination

- Urinary System
- Bladder fills with urine at approximately 0.5 ml/kg/hour
- The bladder wall is stretched when volume reached (200-400ml)
- Nerve impulse travels to the spinal cord and to brain signaling that the bladder is full.
- To empty the bladder, a nerve impulse to bladder muscle and urinary sphincters
- Detrusor muscles contracts and sphincters open
Definition of POUR

The inability to void with a full bladder
- Acute Urinary Retention
- Acute-on-Chronic Retention
- Chronic Retention

Acute Urinary Retention

- Anatomical Retention
- Functional Retention
- Psychogenic Retention
Poll Question #2

Which of the following is not a predisposing risk factor for POUR?

- Male
- Diabetes
- Immobility
- Age over 50

Risk Factors

Predisposing: Preoperative risk factors

- Age & Gender
  - Age over 50
  - Male

Consequences of Aging

<table>
<thead>
<tr>
<th>Normal</th>
<th>Changes with Aging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder capacity: 400 – 600 mL</td>
<td>Bladder capacity 250 – 300 mL</td>
</tr>
<tr>
<td>Desire to void at 250 – 300 mL</td>
<td>Same or less</td>
</tr>
<tr>
<td>300 – 400 mL per void</td>
<td>Total volume voided per void decreases</td>
</tr>
<tr>
<td>Residual &lt; 50 mL</td>
<td>Residual &lt; 100 mL</td>
</tr>
<tr>
<td>1/3 voided volume at night</td>
<td>Up to 2/3 voided volume after 8 PM</td>
</tr>
<tr>
<td>No straining, hesitation, pain or post-void dribble</td>
<td>No straining, pain, or post-void dribble</td>
</tr>
</tbody>
</table>
Risk Factors

Predisposing – Preoperative risk factors
- Co morbidities
- Neurological conditions
- Alcohol intake
- Constipation
- Renal disease
- Urethral strictures
- Chronic UTI
- Diabetes

- Medications
  - Antipsychotic drugs
  - Antidepressants
  - Benzodiazepines
  - NSAIDS
  - Calcium channel blockers
  - Anticonvulsants
  - Opioids

Precipitating – Intraoperative and Postoperative Factors
- Duration of surgery
- Excessive fluid intake (>750cc)
- Anesthesia
- Analgesia
Poll Question #3
- Do you routinely use a bladder scanner in clinical practice?
  - Yes
  - No

Assessment
- Voiding Status
- Fluid Balance
- Clinical Exams

Voiding Status
- Spontaneous Voiding
- Amount Voided
- Bladder Scanning
Lower Urinary Tract Storage & Emptying Symptoms

- Dysuria
- Frequency
- Incontinence
- Pressure
- Urgency
- Hesitancy
- Incomplete Emptying
- Intermittent stream
- Post-void dribbling
- Straining to void
- Weak stream

Ask....

- Do you have a feeling or urge/sensation to void?
- Character of the stream?
- Strains or bears down when voiding?
- Once on the toilet, can the patient initiate the stream within a minute?

Fluid Balance

- Intra-operative
- Oral Intake
- Blood Output
- Urine Output

Clinical Exam

- Frequent Inspection
- Palpation of the Bladder
- Percussion
- Bladder Scanner Technique
We thank our Model for allowing us to demonstrate a bladder scanning technique.

**Bladder Scanner Technique**

286 ml

**Poll Question #4**

- When would you perform in and out catheterization?
- Bladder scan equal to or greater than 600 cc
- Patient discomfort
- 8 hours post-op
Interventions to Assist with Spontaneous Voiding
- Early Mobilization
- Offering Toileting
- Bedside Commode
- Privacy
- Offering Caffeinated Fluids (if appropriate)

Treatment
Indwelling versus Intermittent
- Initially managed with Indwelling
- Remove quickly as possible
- Intermittent while waiting for voiding function resolution

Goal: Allow the bladder to store a reasonable volume of urine at low pressure, and empty it at appropriate intervals if the patient is not adequately voiding.

Poll Question #5
- Does your institution have a risk assessment tool in place to assess for patients at risk for POUR?
  - Yes
  - No
Best Practice

- Institution Guidelines and Protocols
- Peri-operative Risk Assessment
- Indwelling catheters in high risk patients
- Use of silver alloy catheter
- Insertion technique
- Catheter size
- GU Assessment
- SCIP

Catheter Care

- Aseptic Technique
- Securement Devices
- Perineal Care
- Catheter Removal at 24 Hours

The Key is Prevention!!!
Case Study #1

- 83 year old male with THA
- PMH: BPH, angina, HTN, diverticulitis, renal disease, arthritis, TIA, hyperlipidemia
- Intra-op fluids 2400 cc
- ↑SUN, Cr
- Foley cath placed in OR due to high risk

What went wrong in this case?

- Bladder scan not done
- Flomax not started until POD 4
- Indwelling instead of intermittent catheter
- Voiding volumes not recorded
Case Study #2

- 72 year old female, TKA
- PMH: renal CA/nephrectomy, diabetes, HTN, hyperlipidemia, urinary retention
- BUN, Cr
- Intra-op fluids 2400 cc

Case Study #2

- Procedure ended @ 8:59 am
- Foley inserted @ 8:30 pm
- Foley removed POD 2 @ 6:40 am
- Bladder scan = 610 cc @ 3:30 pm, intermittent cath
- Intermittent cath repeated @8:30 = 400 cc

What went wrong in this case?

Case Study #2

- Foley not inserted in OR
- Foley not inserted until > 11 hrs postop
- No bladder scan until 9 hrs after catheter removal
- No documentation on voiding volumes after last intermittent cath
References


Question and Answers

Incorporate Best Practice in your care!!!