

Bladder Management in the Neurologically Impaired Patient



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Introduction

- Many with TM, MS, other diseases of nervous system experience changes in bladder function
- Bladder management affects QOL, health, survival

Objectives

- Review bladder function
- Evaluation and treatment principles
- Management options
- Common problems

Healthy bladder functioning

- Filling or storage phase
 - Messages between bladder and brain
 - Continence/control mechanisms
- Emptying or voiding phase
 - Sphincter muscles coordinated with bladder contraction
 - Contraction strong & long enough to empty bladder

Types of bladder dysfunction

- Failure to store urine
- Failure to empty urine
- Combination of both

Symptoms of urinary problems

- Urgency
- Frequency
- Getting up at night to urinate
- Difficulty emptying bladder
- Loss of control of urine/dripping
- Burning with urination
- Slow urinary stream

Treatment principles

- *Empty bladder regularly and efficiently*
 - maintain kidney function, prevent complications (infections)
- Do not make patient dependent on others for bladder management
- Achieve social continence

Treatments

- Spontaneous voiding with or without meds
- Spontaneous voiding with collection devices
- Clean intermittent catheterization
- Chronic catheter

Spontaneous voiding

- Need to be emptying majority of bladder contents -- only confirmed in office
- No straining!
- Meds may be helpful

Commonly Used Medications

- anti-cholinergics: depress bladder contractions
 - oxybutinin (Ditropan), tolteridine (Detrol), hyoscyamine (Levsinex), Vesicare, Enablex
 - dose to effect or side effect (constipation, dry mouth)
- cranberry extract



Medications without much benefit...

- mandelamine
- Vitamin C, other urinary acidifiers
- bethanechol
- chronic antibiotics

Medications

- No meds to improve:
 - bladder sensation
 - detrusor contractility
 - sphincter relaxation

Spontaneous voiding with collection devices

- Diapers or condom catheters
- Need low post void residuals

Clean intermittent catheterization

- Ideal for poorly emptying bladder, good hand and cognitive function
- 4-6x/day, volumes <500 cc
- CLEAN, not sterile procedure
 - Main point is emptying bladder
 - Don't need new catheter for each use
 - Cleaning and storage

Chronic catheter

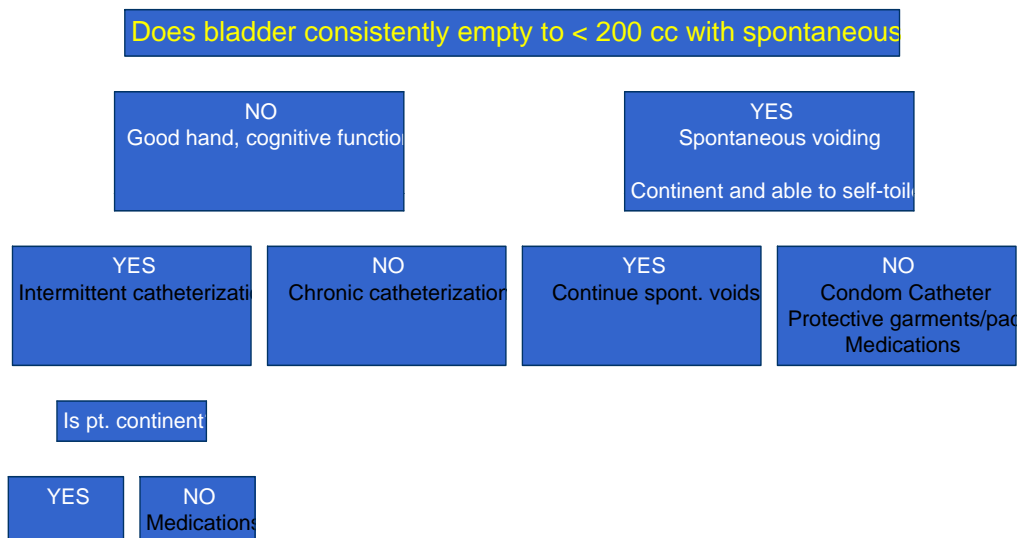
- Foley/urethral catheter, suprapubic tube
 - Based on patient function, desire
 - Necessary when bladder does not empty
 - Very little kidney damage
 - Bladder infection rate same with either
 - Bladder will ALWAYS be colonized with bacteria

Chronic catheter: minimizing complications

- Needs to be secured to leg or abdomen, without tension
- Urine output > 2L/ 24 hours
- Cranberry tablets
- Avoid constipation
- change q 4-6 weeks

What to do?

Bladder management decision tree



Common problems

- UTIs
- catheter plugging
- incontinence
- urinary tract stones

Urinary Tract Infections

- Infection vs. colonization
- With indwelling catheter:
 - Urine will NEVER be sterile for > 48 h
 - If signs of UTI, start with fluids
 - Treat with antibiotics only when signs of systemic illness
 - Fever, WBC, malaise, increased spasticity
- Culture-specific antibiotics, if possible (48 h)

Catheter clogging

- urease-splitting bacteria --> high pH
- high urinary pH precipitates phosphate salts, frequent catheter changes
- Treatment
 - KUB to check for bladder stones
 - saline flushes q day
 - Renacidin

Incontinence

- Spontaneous voiding
- Intermittent catheterization
- Leaking around foley

Urinary tract stones

- Bladder, kidney stones often found on annual renal ultrasound
 - > refer to urologist

When to consult urologist?

- Stones
- Blood in urine/hematuria
- Failure of bladder management
 - loss of kidney function
 - recurrent, symptomatic infections
 - persistent incontinence/leakage

Summary

- Review physiology bladder function/dysfunction
- Evaluation and treatment principles
- Treatments
- Common problems

Take home points

- Bladder should be emptied regularly and efficiently
- Bladder management should not be dependent on others
- Judicious use of antibiotics