

# Diagnosis and management of voiding dysfunction associated with transverse myelitis



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# Overview

- Concepts of voiding dysfunction
- Goals of evaluation and therapy
- Evaluation
- Urodynamics
- Conclusions

# Paradigms of voiding dysfunction

- Wein (1981);  
distillation of concepts  
to storage/emptying  
function of lower  
urinary tract.
- Clinically applicable
- Urodynamic  
correlation possible
- Expandable

	Because of bladder	Because of outlet
Failure to store		
Failure to empty		

# Paradigms of voiding dysfunction

- International Continence Society (Abrams, 1990)
- Useful in guiding treatment; fusion of functional/urodynamic data
- Attempt at standardization

	Normal	Overactive	Underactive
Detrusor			
Sensation			
Compliance			
Capacity			
Urethra			

# Goals of evaluation and therapy

- Protection of upper tracts
  - Avoidance of infection, low pressure system
- Restoration of continence
  - determination of anatomic vs neural etiology
- Independence in management

# Evaluation

- History
  - Establish voiding patterns
  - Continence status
  - Bowel function
- Physical exam
- Urinalysis
- Voiding diary

# Screening tools

- Urogenital distress inventory (UDI-6)
- Incontinence impact questionnaire (IIQ-7)

**Urogenital Distress Inventory Short Form (UDI-6)**

Do you experience and, if so, how much are you bothered by:

	0 = not at all	1 = slightly	2 = moderately	3 = greatly
1. Frequent urination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Urine leakage related to feeling of urgency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Urine leakage related to activity, coughing, or sneezing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Small amounts of urine leakage (drops)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Difficulty emptying your bladder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Pain or discomfort in lower abdominal or genital area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

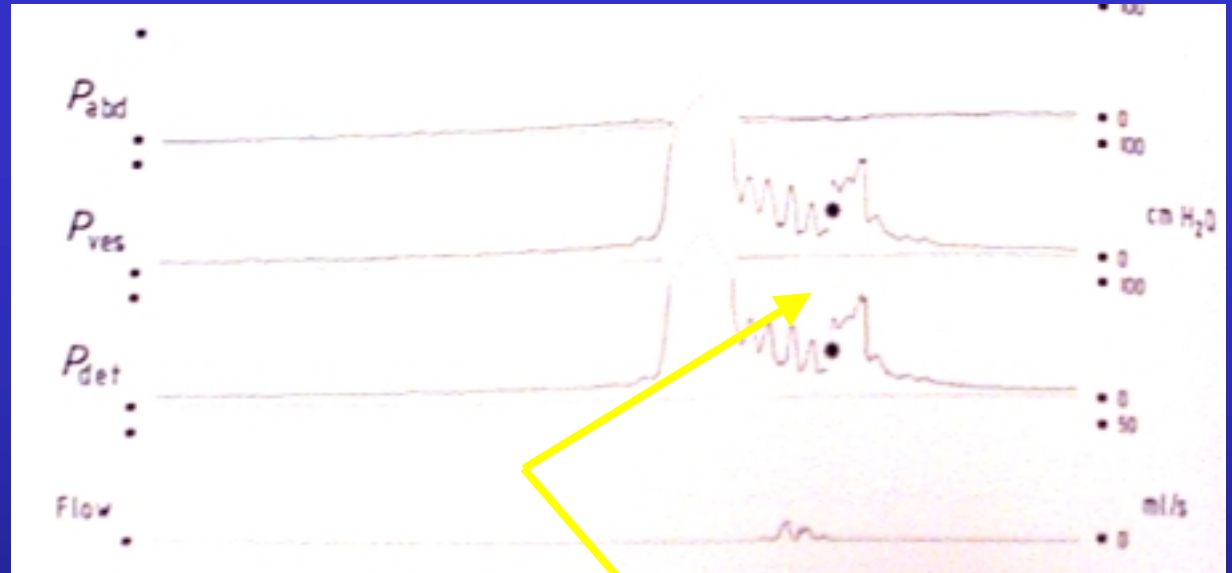
**Incontinence Impact Questionnaire Short Form (IIQ-7)**

Has urine leakage affected your:

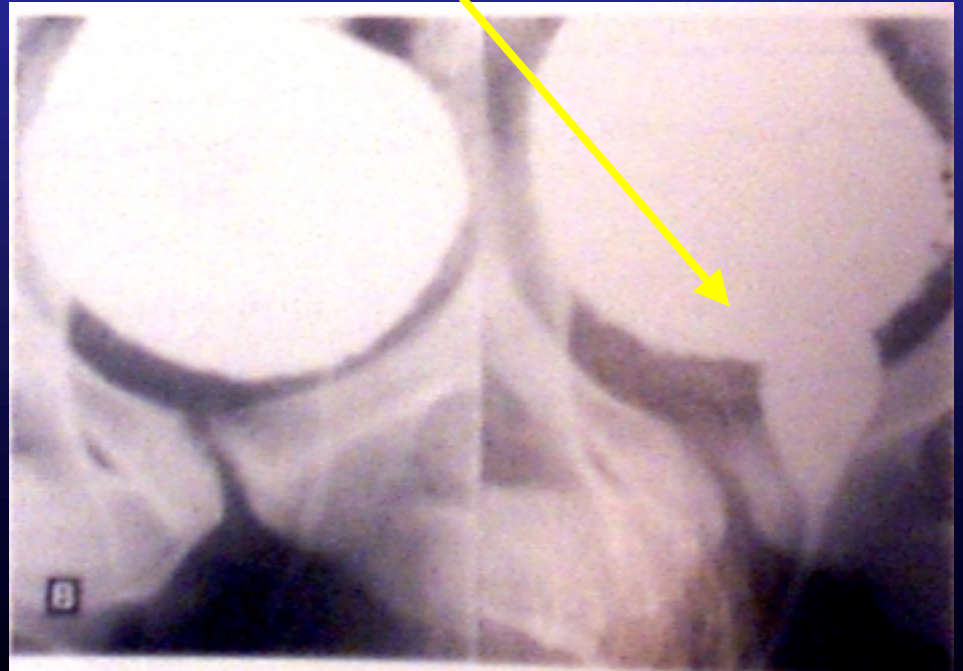
1. Ability to do household chores (cooking, housecleaning, laundry)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Physical recreation such as walking, swimming, or other exercise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Entertainment activities (movies, concerts, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Ability to travel by car or bus more than 30 minutes from home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Participating in social activities outside your home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Emotional health (nervousness, depression, anger)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Feeling frustrated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Urodynamics

- 2 phase study
  - Filling (CMG)
  - Emptying (pressure/flow)
- Can include EMG, urethral profilometry



- Video urodynamics
  - Simultaneous manometric and fluoroscopic imaging



# Therapy

- Problems with storage
  - Anticholinergics; tolterodine, oxybutinin, hyoscyamine, amitriptyline
  - Biofeedback, behavioral therapy
  - Neuromodulation
  - Diversion; foley, SP tube, ileovesicostomy
  - Bladder neck reconstruction, sling procedures, AUS
  - Augmentation cystoplasty

# Therapy

- Problems with emptying
  - ~~Valsalva or crede voiding~~
  - Clean intermittent catheterization
  - Neuromodulation

# Conclusions

- Voiding dysfunction is diagnosable
- Treatment options exist on a spectrum of invasiveness
- The following goals can be achieved in the majority of cases
  - Upper tract protection
  - Continence
  - independence