Urinary Continence Management after a Stroke

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Innervation of the Bladder

- Neuromuscular coordination for control of both storage and elimination...ANS
- Motor & sensory input locally in the sacral region
- As the bladder fills, micturition contractions occur (stretch sensors)... Cyclical (contract / relax)... More frequent as bladder fills...
- Impulses to external sphincter inhibit micturition LOCALLY...(spinal cord reflex)
- Bladder emptying inhibited by brain (frontal & motor areas) ...until the brain allows micturition
Urinary incontinence

- Common condition following a stroke
- Incidence ranging from 38% to 60% (1)
Why do so many stroke patients have urinary continence issues?

- **Area of brain AND Parts of the body** affected by the stroke
  - Altered level of consciousness / cognition
  - Aphasia / dysphasia
  - Weakness / hemiparesis
  - Altered mood
  - Brain...PTO...
Areas of the brain involved in voiding

- **Pons** – inhibits and facilitates. Neural “off” / “on” switch.
- **Cerebral cortex** – Several areas. Mainly inhibitory but can become excitatory.
  - Frontal lobes? role in inhibition of detrusor contraction
Why is it important to assess continence after stroke?

Incontinence is a strong predicator of outcome following stroke, its presence being highly predictive of a poor outcome (Meschia & Bruno, 1998)....

The limited evidence suggests that the greatest impact on urinary incontinence may be in the acute phase of rehabilitation after stroke......

........increase discharge destination options
Why is it important to assess continence after stroke?

• Establishment of continence is good for morale and self-esteem.
Stroke & main incontinence sub-types

• Hypotonic bladder
  – Flaccid bladder
    • Retention

• Hypertonic bladder
  – Hyperreflexic bladder
    • Frequency (frequent desire to void)
    • Urgency (intense desire to void immediately) and
    • Urge incontinence
Case Study 1

Hypotonic bladder
Mrs H, 80 year old, Admitted to ED with an acute L) middle cerebral artery stroke

- Aphasic
- R) sided weakness
- Thrombolysis, improved function of R) side but remained expressively dysphasic
- Admitted to Neuro-Medical ward, late Tuesday evening
Wednesday mid-morning on ward, post thrombolysis:

- Patient RIB for 24 hours (post thrombolysis protocol)
- Nil orally, awaiting Speech Assessment
- IV therapy 83ml/hr
- Bowels opened Wednesday morning.
- Written up for routine aperients (but Nil Oral)
Urinary Assessment

- Patient dysphasic – unable to obtain history
- “Never discussed” by patient with family
- Frequent use of pan for small voids (100-150ml) since admission, as well as incontinence pad in situ for urinary dribbling
- Patient “appeared” comfortable
Abdominal assessment

• Large palpable bladder (up to umbilicus)
• Bladder Scan “>1000ml”
Diagnosis

Hypotonic bladder:

“Immediately after a stroke, hypotonic bladder function is common. Weak or absent bladder contractions resulting in failure to empty the bladder may lead to over-distension and overflow incontinence” (Gross, 2003).
Urinary Plan

After discussion with nurse caring for patient and medical team:

1. Check patient’s bowels. If constipated given enema.
2. Offer pan to pass urine
3. Check Post-Void Residual (PVR) within 10-15 minutes of voiding (using the bladder scanner)
4. If PVR > 150ml, perform in-out (intermittent) urinary catheterisation
5. Offer pan regularly
6. Repeat steps 2-5 until PVR < 150ml
Implementation

- 1\textsuperscript{st} void (PVR > 150ml) + in-out catheter = 1250ml
- 2\textsuperscript{nd} void (PVR > 150ml) + in-out catheter = 800ml
- 3\textsuperscript{rd} void (PVR > 150ml) + in-out catheter = 750ml
- Nursing staff followed plan for 24 hours.
Evaluation

• There was no residual urine post-void by Thursday morning (i.e. approx 36 hours post-Stroke)
Hypotonic bladder
“Retention”

Aetiology

• Bladder hypotonia - usually LMN lesions, but in stroke possibly frontal lobe areas injury.
Hypotonic bladder

“Retention”

Characteristics

- Frequent to nearly continuous dribbling
- Palpable bladder
- Urine flow rates decreased
- Large Post Void Residual (PVR)
Hypotonic bladder
“Retention”

Interventions
- Catheterisation:
  - Intermittent
  - Indwelling
- Relaxation exercises
- Double voiding
Retention

• Common, especially right after a stroke
• Approx 50% of stroke patients have urinary retention problems for the first 72 hours.
• Improves quickly
• Less than 25% have retention problems at three weeks post stroke
Treatment of Retention using Intermittent Catheterisation

- Intermittent “in-out” sterile urinary catheterisation
- **NSF guidelines** recommends “Closed System”

- Ability to volitionally void and empty the bladder usually returns...
- “Continue to evaluate a patient's sensation of the need to void and to toilet patients on a regular basis”  
  \(^{(2)}\)
Indwelling Catheterisation vs Intermittent Catheterisation

- “Management of Short Term Indwelling Urethral Catheters to Prevent Urinary Tract Infections”, Joanna Briggs Institute, Volume 4, Issue 1, 2000 (3)
- Study examined postoperative patients.
- Reduced incidence of bacteriuria with intermittent catheters
Case Study 2

Hypertonic bladder
• Monday
• Mr J, 67 year old, Admitted to Neuro-Medical ward with an acute L) stroke
• Expressive and Receptive Dysphasia
• R) sided weakness and neglect
• Nil orally, IV therapy. For NG feeding
• Written up for routine aperients (but Nil Oral)
Urinary Assessment

• No difficulties prior to admission according to wife
• Incontinent of urine – small amounts, frequently
• Containment pad in situ
Abdominal assessment

- Bladder not palpable
- Bladder Scans “0 - 30ml”
Diagnosis

Hypertonic bladder:

“The more common symptoms after stroke are frequency, urgency and urge incontinence... Hypertonic bladder activity is a major factor. Contraction of the bladder wall in response to bladder filling cannot be effectively controlled. ...bladder capacity is often reduced” (Gross, 2003).
Urinary Plan

After discussion with multidisciplinary team:
1. Perform Full Ward Test for urine to eliminate bacteriuria (looking for leukocytes and nitrates)
2. Check patient’s bowels. If constipated given enema.
Urinary Plan

3. Multi-disciplinary team approach:
   – Assessment of need to void / voiding patterns, including maintenance of Fluid Balance Charts / toileting charts
   – Facilitation of communication
   – Assessment of ability to transfer
   – Assistance with transferring from bed to commode / toilet / tilt-commode
   – Assessment of adequate hydration
   – Administration of fluids
   – Medication prescription & administration
Urinary Plan

4. Ensure patient close to toilet
5. Ensure call Bell in reach
6. Toilet patient regularly – ideally on commode. Use pan / bottle if RIB
7. Timed toileting
8. Appropriate clothing
9. Appropriate containment pads
Evaluation

• Sent to rehabilitation with plan in place to help improve continence
• Plan continued in rehabilitation…. Working on increased bladder capacity and decreasing frequency and urgency
• Three-months post-stroke, wife reported social continence attained.
Hypertonic bladder
“Frequency, Urgency & Urge Incontinence”

Hyperreflexic bladder
Uninhibited bladder

Characteristics
- Frequent voiding
- Urgency,
- Small volume voiding,
- Ability to inhibit urine flow or stop stream impaired
- +/- residual urine
Hypertonic bladder
“Frequency, Urgency & Urge Incontinence”

Aetiology
- Inhibitory input from the pons lost / impaired UMN lesions
- Excess of reflex bladder activity
Hypertonic bladder
“Frequency, Urgency & Urge Incontinence”

Other Interventions
- As per Case Study 2 and
- Eliminate bladder irritants
- Prompted voiding
- Pelvic floor exercises
- Urge suppression
- Medications
Hypertonic bladder
“Frequency, Urgency & Urge Incontinence”

Medications
• Oxybutynin (anticholinergic)
  – smooth muscle relaxant:
    • reduces contraction of detrusor muscle
    • decreases urgency symptoms
    • improves bladder control
  – Side effects (dry mouth, constipation)
Resources and Clinical Guidelines

National Stroke Foundation Guidelines for Management of Acute Stroke and Rehabilitation after Stroke
www.strokefoundation.com.au


Continence Foundation of Australia www.continence.org.au


• Continence Aids Payment Scheme (CAPS)
• Continence Tools for Residential Aged Care
• Links to continence resources
References


3. Evidence Based Practice Information Sheets for Health Professionals “Management of Short Term Indwelling Urethral Catheters to Prevent Urinary Tract Infections”, *Joanna Briggs Institute*, Volume 4, Issue 1, 2000


References


