Catheter Management in the Community

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Indications for Catheterisation

• Incomplete bladder emptying
  – Neurogenic
  – Hypotonic
  – Obstruction
• Post operatively
• Acute medical monitoring
• Drug instillation

• *Severe intractable incontinence
  – (only if conservative measures have failed and skin integrity compromised)
Cautions/Contraindications

- Infection: urethritis, prostatitis, balanitis
- Urethral stricture
- Fractured pelvis (ruptured urethra)
- Phimosis/paraphimosis
- Severe outlet obstruction (eg very enlarged prostate)
- Hypospadias & epispadias
- Congenital diverticula of urethra
Infection: urethritis, prostatitis, balanitis

- Prostatitis
- Urethritis
- Balanitis
Urethral stricture - moderate
Phimosis
Severe outflow obstruction
Hypospadias/epispadias
Urethral Diverticulum - male
Catheter Selection

Consider:

• Reason for catheterisation
• Time catheter to remain in situ
• Appearance of urine
• Sex of patient
• Will dictate - size, length, material & type of catheter
Catheter Selection

Materials:

Short term (up to 7 days)

- PVC (plastic)
- Plain latex
- Silicone treated
Catheter Selection

Materials:

Medium term (up to 28 days)

- Teflon (PTFE) coated
  - smoother than plain latex
  - lessens irritation to urethral mucosa
  - coating lessens absorption of water by latex
Catheter Selection

Materials:

Long term (up to 12 weeks)
- hydrogel coated
- silicone elastomer coated
- 100% silicone
- Silver coated
- Antibiotic impregnated
Catheter Selection
Guage:

• FG or CH

• One Charriere (CH or FG) unit = 1/3mm, so that a 12CH is 4.0mm in diameter.

• select smallest size that will drain adequately

• large bore causes urethral irritation/damage

• bypassing - smaller NOT large
Diameter

- Coated
- Uncoated
Catheter Selection

Length:

• Standard (Male) 40cm
• Female 20cm
• Paediatric 25 - 30cms

• Directly proportional to length of urethra
Catheter Selection

Balloon:

- 10ml - adult routine
- 5ml - paediatric
- 30ml - post prostatectomy only
- always inflate to capacity stated on catheter packaging
- only use sterile water
Complications

- UTI
- Spasm
- Bypassing
- Encrustation
- Haematuria

- Urethral trauma
- Urethral stricture
- False passage
- Paraphimosis
- Traumatic Hypospadias
Complications of urethral catheters

- Bladder
- Urethra
- Penis
Asymptomatic bacteriuria v CAUTI

• Bacteriuria (presence of ≥105 bacteria/ml in absence of symptoms) **is not the same as UTI**.

• Prevalence of asymptomatic bacteriuria with short-term (<7 days) catheterisation is 10-20% but symptomatic UTI develops in only 2-6%.

• In patients’ catheterised long term (>30 days), prevalence of bacteriuria is almost 100%.

• Bacteraemia, most commonly Gram-negative, develops in 1-4% of patients with UTI and has a mortality of 13-30%.

• **Symptomatic bacteriuria or CAUTI** is characterised by ≥ 2 symptoms of UTI i.e. fever (temp >38°C), dysuria, urgency, frequency, new incontinence, supra pubic tenderness, loin pain, and change in cognitive status.

• **ONLY TREAT SYMPTOMATIC BACTERIURIA**
Bladder

UTI

• **Causative factors**
  – Contamination
  – Catheter care

• **Reducing the risk**
  – Aseptic technique
  – Sterile equipment
  – Avoid cross contamination
  – Personal hygiene
  – Fluid intake
Complications - Bladder

Spasm/Bypassing

- Causitive factors
  - Trigone irritation
  - Blockage: Debris, bladder mucosa, kinking, constipation

- Troubleshooting
  - Review balloon size
  - Check balloon fully inflated (deflate and re-inflate)
  - Consider anticholinergic
  - Flush 0.9% saline
  - Keep bag below bladder level/unkinked
  - Treat constipation
Bladder oedema caused by catheter tip
Complications - Bladder

Encrustation

• Causative factors
  – Bacteria produces urease
  – Urease splits urinary urea into CO₂ & ammonia
  – pH becomes alkaline causing mineral precipitation

• Troubleshooting
  – Reduce risk of infection (increase fluid intake, hygiene, minimise opportunities for contamination)
  – Consider pH monitoring and use of citric acid catheter maintenance solution
Encrustation
Encrustation- magnified
Catheter balloon encrusted
Catheter balloon stones
Complications - Bladder

Haematuria

• Causative factors
  – Trauma to urethra
  – Vascular prostate
  – Constricted prostatic urethra due to BPH or CaP
  – Decompression haematuria

• Reducing the risk
  – Adequate preparation of urethra prior to procedure
  – Never inflate balloon until urine drains
  – Abandon procedure if obstruction felt
  – Never use force to remove a catheter
  – Fix leg bag
  – If > 1ltr urine drained - monitor
Complications - Urethra

Urethral pain
  • Causative factors
    – Irritation
    – Infection
    – Trauma
    – Traction

  • Troubleshooting
    – ↓ risk of infection
    – Consider anaesthetic gel
    – Drainage system selection
    – Adequate support of drainage system
    – Regular bag emptying
Complications - Urethra

Stricture

- Causative factors
  - Infection
  - Trauma
    - Catheterisation
    - Instrumentation
  - Congenital

- Reducing the risk
  - ↓ risk of infection
  - Adequate preparation of urethra
  - Catheterisation technique
Urethral Stricture - multiple
Urethral Stricture - after dilatation
Complications - Urethra

False Passage

• Causative factors
  – Urethral stricture
  – Instrumentation
  – Urethral diverticulum

• Reducing the risk
  – Unlikely to cause false passage with foley catheter
  – Avoid use of force
False passage - old
False Passage – deep, into corpus spongiosum
Complications - Penis

Paraphimosis

• Causative factors
  – Retracted foreskin not replaced post procedure/hygeine

• Reducing the risk
  – always ensure foreskin is replaced following procedure

• Treatment
  – Cold compress - reduce swelling
  – Reduce foreskin over glans
  – Instillagel - as lubricant
  – Dorsal slit/circumcision
Paraphimosis
Complications - Penis

Traumatic hypospadias

• Causative factors
  – Traction
  – Infection

• Reducing the risks
  – Regular bag emptying
  – Use of bag support
  – Reduce risk of infection
Traumatic Hypospadias
Opportunities to reduce risk of complications

- Careful consideration of need for catheter
- Regular review of ongoing need for catheter
- Choice of: Catheter material/gauge/balloon size/length
- Maintain integrity of closed drainage system
- Encourage adequate Fluid intake
- Catheter care (personal hygiene/emptying/support)
- Avoid cross infection/ANTT principles/handwashing/gloves
- Sterile equipment
Alternatives to Indwelling Urethral catheters

Supra Pubic catheter

Intermittent Catheterisation

Urinary sheath
Supra-pubic catheterisation

- Catheter is inserted directly into the bladder via the anterior abdominal wall
- First introduction currently always carried out by Urologist or Urology Nurse Practitioner (local or general anaesthetic)
- Only instance when a large bore foley catheter is used long term
- Can be changed by nurse as soon as first routine change (> 2 weeks since insertion)
Supra Pubic - suitable for:

• Those experiencing problems related to urethral catheters
• Disorders of the genitalia
• Surgical or acquired urethral closure/trauma/stricture
• Sexually active patients
• TWOC - catheter can be clamped rather than removed
• Long term disability (especially female)
• ANY age group
Supra Pubic catheterisation

• Onset of bacteriuria usually delayed in comparison with urethral catheter

• Bacteriuria is almost inevitable

• Irritative symptoms may be less severe

• Vesical calculi more common
Supra Pubic - Contraindications

- Known or suspected cancer of the bladder
- Undiagnosed haematuria
- Cognitive impairment
- Through patient choice
Intermittent catheterisation should be used in preference to an indwelling catheter if it is clinically appropriate and a practical option for the patient.
IC - Benefits

- Ensure complete bladder emptying
- Reduce complications of indwelling catheter
- Reduced incidence of UTI
- Upper renal tract preserved as protected from reflux
- Self management
- Maintain sexual activity
- Improve quality of life
- Positive Body Image
IC - Requirements

• Consent
• Motivation
• Cognitive ability
• Sufficient manual dexterity
  – (although can be performed by partner or carer)
• Agility – particularly women
• Good capacity bladder
• Competent urinary sphincter mechanism
• Residual urine of >100mls
IC - Frequency

- Individual assessment
- Prevention of UTI

Voided urinary volume + residual urine

= 

Less than 400mls

Bakke et al 1997
Urinary sheaths

- Suitable for
  - Male, incontinence (not retention of urine)

- Benefits
  - Promotes independence.
  - Reduced infection risk
  - Maintain skin integrity

- Disadvantages
  - Fitting device
Drainage systems
Catheter valve

Suitable for

– Anticipated TWOC (maintain detrusor tone)
– Discrete
– Reduce risk of blockage/spasm/bypassing caused by mucosa in drainage eyelets
Documentation

• Date and time
• Anaesthetic gel used
• Catheter type/size/balloon/batch & lot number (sticker)
• Residual volume/colour
• Any problems or related procedures
• Drainage system
• Planned review date/follow up
Hospital to Home

As a minimum you should expect to receive discharge information including:

- Copy of catheterisation record
- Taught catheter care
- Given written instructions
- Referred to District Nurse
- Given 1 week supplies
TWOC in the community

- Who is suitable?
  - Acute Urinary Retention (if underlying problem treated)
  - Acute on Chronic Urinary Retention
  - Post op retention (other than post RP)
  - Consent
  - Good cognitive function
  - Previously uncomplicated catheterisation
TWOC in the community

• Requirements?
  – Jug
  – Bladder scanner
  – Access to equipment for recatheterisation
  – Access to phone
  – Able to stay home all day
  – Cognitive ability
TWOC in the community

Instructions

• Drink adequately but not excessively (1 ltr in 6 hours)
• Measure and record each individual void
• If unable to void or in pain: phone
• Nurse call 3-4 hours
• Nurse visit 6 hours
• Assess voided volumes & Bladder scan
• Continue TWOC or re-catheterise
Thank You!