**Nursing Management of Urinary Diversion**

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**Bladder Cancer**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>60</th>
<th>65</th>
<th>70</th>
<th>75</th>
<th>80</th>
<th>85+</th>
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<td>Female</td>
<td>6.0</td>
<td>7.7</td>
<td>7.4</td>
<td>18.2</td>
<td>26.8</td>
<td>17.6</td>
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<tr>
<td>Male</td>
<td>16.4</td>
<td>20.8</td>
<td>39</td>
<td>44.4</td>
<td>76.5</td>
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</tbody>
</table>

Hong Kong Cancer Registry 2012

**Types of Urinary diversion**

- **Incontinent Diversion**
  - Eg. Ileal conduit, colonic conduit

- **Continent Diversion**
  - Cutaneous
    - Eg Kock pouch, Mitrofanoff, Indiana pouch
  - Orthotopic Bladder Substitution
    - Eg Neo-bladder

**Ileal Conduit**

- Preoperative assessment:
  - Medical history: DM, Crohn’s disease
  - Mental status: Capable of learning stoma care
  - Physical Status:
    - Dexterity: Free digital movement
    - Vision
    - Skin condition
    - Allergic history
    - Body configuration: Obesity, contractures

**Ileal Conduit**

- Preoperative assessment:
  - Psychosocial status: acceptance of stoma, social support
  - Cultural background:
    - Hygiene
    - Occupation
    - Diet
    - Religion

- Pre-operative Counselling
  - Aim: Relief stress, fear, anxiety and clarify misunderstanding
  - Arrange a private room
  - Invite patient and family members for interview
  - Explain with simple anatomy of GI tract
  - Demonstration: Video, pamphlet
  - Pre-operative education
    - Blood preparation, post-op investigations, post-op status
  - Allow enough time for questions
Stoma sitting considerations
- Choose an area that the patient can see
- A large smooth surface
- Avoid scars and wrinkles, skin folds or creases, surgical scars or incisions, and existing hernias
- Avoid bony prominences: eg. iliac crest or costal rib margins.
- Within the rectus abdominis
- Usual site: Right lower quadrant of abdomen

Post-operative care
- Adequate pain control
  - Aim: Reduce anxiety and encourage deep breathing
  - Eg. PCA, epidural analgesic
- Encourage deep breathing exercise
- Aim: Prevent pneumonia and promote recovery
  - Incentive spirometry
  - Adequate pain control
  - Physiotherapy
Ileal Conduit

Post-operative care
- Early mobilization
- Aim: Prevent DVT and promote recovery
  - Early prop up in bed or sit out
  - Post operation physiotherapy

Dietary progression
- Re-initiate when bowel function returns
  - Early prop up in bed or sit out
  - Post operation physiotherapy

- Nil by mouth
- Sip of water
- Fluid diet
- Soft diet
- Full diet

Drainage tube management
- Aim: Protect anastomosis, detect possible haemorrhage and anastomotic leakage
  - Pelvic Drain: Observe for amount and colour of effluent
  - Ureteric Stents: Maintain patency of the stent; Flush the stents with 5-10 ml NS using 18/20 gauge angiocatheter (remove on D7-10)
  - Ryle's Tube: Decompress stomach until bowel function returns

Stoma care
- Aim: Detect and treat post operative stoma and peristomal skin complications
  - Short term complications:
    - Edema
    - Necrosis
    - Muco-cutaneous separation
    - Contact / Allergic dermatitis
  - Long term complications:
    - Parastomal herniation
    - Prolapse
    - Retraction
    - Stenosis
Nursing Care

- **Stomal Edema**
  - A larger aperture to accommodate the stoma
  - Frequent observation for stoma circulation

- **Stomal Necrosis**
  - Be vigilant for vascular integrity of the stoma
  - Transilluminate the stoma down below the fascia level

- **Mucocutaneous separation**
  - Treat as wound
  - Separate from effluent
  - Observe for stoma retraction or stenosis after healing

- **Contact Dermatitis**
  - Review stoma appliance and ensure proper skin seal
  - Apply stomahesive powder to raw area

- **Allergic dermatitis**
  - change appliance with different type of wafer
  - Consult dermatologist in severe case

- **Parastomal herniation**
  - Watch out for change in bowel habit or symptoms of bowel incarceration
  - Avoid constipation
  - Support belt
  - Mesh hernia repair
Nursing care

- **Stoma prolapse**
  - Use a transparent and larger pouch with larger aperture to contain the prolapsed stoma
  - Manual reduction
  - Avoid mechanical trauma
  - Surgical intervention for severe case

- **Stomal retraction**
  - Use convex appliance
  - Support belt
  - Advice for weight reduction

Nursing Care

- **Stomal stenosis**
  - Regular dilatation
  - Surgical revision if severe stenosis

Stoma Care

- **Before discharge:**
  - Daily stoma cleansing
  - Invite patient and major carer to participate in stoma care and pouch change
  - Demonstrate skills and assess patient’s stoma care ability by return demonstration
  - Provide stoma appliances purchasing information
  - Refer to MSW for financial problem
  - Refer to support group if needed
    - Eg Hong Kong Stoma Association

Discharge Advice

- **Alert for signs of UTI**
  - Eg. Fever, turbid urine with foul smell, increased mucous secretion

- **Diet**
  - No restriction or diet modification
  - Encourage fluid intake
  - Cranberry juice to maintain urine acidity

- **Work**
  - Return to the work

- **Bathing or showering**
  - Avoid using cream or ointment

- **Exercise**
  - Avoid heavy lifting and extremely rough contact sports
  - Empty the pouch before swimming or change pouch before swimming

- **Travelling**
  - Bring extra set of pouch
  - Adjust the seat belt above or below the stoma

- **Sex**
  - Express feeling with partner
  - Change pouch before sexual activity
  - Use non-transparent pouch
Orthotopic Neobladder

- A portion of small bowel detubularized to form a pouch and put in the same place as the original diseased bladder after cystectomy
- Ureters re-implanted
- Bottom portion of pouch connected to the disease-free trigone and urethra
- Functional sphincter

Neobladder

- Contraindication
  - Mental/physical disability
  - Impaired renal function
  - Inflammatory bowel disease
  - Dysfunction of sphincter
  - Tumour invasion to bladder neck or prostate

Patient selection

- Committed to self catheterization
- Dexterous to perform self catheterization
- Medically fit for extensive long standing surgery

Advantages

- No stoma formed, no alteration in body image
- Pass urine in original tract
- Continent control

Disadvantages

- Nocturnal incontinence
- Life long intermittent catheterization
- Pouch irrigation
**Neobladder**

- **Preoperative counselling**
  - Pre-op education on CISC / Pelvic floor muscle exercise
  - Explain for modification of new voiding style after surgery
  - Possible nocturnal incontinence

- **Preoperative care**
  - Blood test, ECG & CXR
  - Pre-operative chest physio & anti-embolism stockings
  - Bowel preparation
    - Fluid diet
    - Klean Prep 2-4L till clear

- **Possible early post-op complications:**
  - Pneumonia
  - DVT
  - Paralytic ileus
  - Diarrhoea/steatorrhoea
  - Metabolic acidosis
  - Salt-losing hypovolemia

- **Post-operative care**
  - Pain control
  - Dietary progression
  - Early mobilization
  - Strict I/O monitoring
  - Daily blood test, acid-base balance
  - Drainage tubes care

- **Drainage tubes management**
  - Pelvic Drain: Observe for amount and colour of effluent
  - Ureteric Stents: Maintain patency of the stent; Flush the stents with 5ml NS using 18/20 gauge angiocatheter if blocked (remove on D7-14)
  - Ryle’s Tube: Decompress stomach until bowel function returns
Neobladder

- Drainage tubes management
  - Reservoir drainage catheter
    - Suprapubic and urethral
      - Effective continuous drainage to decompress the pouch, allow anastomosis to heal
      - Regular manual irrigation to remove mucous
  - Effective continuous drainage to decompress the pouch, allow anastomosis to heal

- Manual pouch irrigation via reservoir drainage tubes
  - Slowly inject 50ml 0.9%NS via one of the drainage tube (the other tube allow for free drainage), then gently aspirate
  - Repeat until return fluid is clear of mucous
  - Irrigation frequency
    - 1st week Q4H + prn
    - 2nd week Q6H + prn
    - 3rd week Q8H + prn

- Pouchogram (post-op 2~3 weeks)
  - Confirm anastomosis security
    - Keep drainage tubes if leakage +ve,
    - Remove suprapubic catheter
    - Remove urethral catheter 2 days after removal of SPC
    - Allow self voiding and start CISC for bladder washout
    - Bladder training (Timed voiding schedule)

- Voiding training
  - Without detrusor-sphincter feedback
  - Sense of "fullness"
  - Void in a seated position
  - Relax the pelvic floor muscle and external sphincter
  - Increase abdominal pressure (Valsalvar’s maneuver)
  - Bend forward to aid emptying reservoir

- Bladder washout
  - Aim: Removal of mucous, prevent urine stasis and bacteriuria

Patient education
Neo-bladder irrigation

- Nelaton urinary catheter (Fr. 12 for adult)
- 0.9% normal saline (N.S)
- Liquid soap
- Lubricant
- 60ml bladder syringe
- Clean bowl
- Small container x 2
- Measurement container
- Paper towel
- Paper bag
Patient education
Neo-bladder irrigation
- Wash hands with liquid soap
- Prepare all equipment
- Wash hands with liquid soap
- Clean the urethral orifice
- Insert the lubricated catheter to the urethral until urine drainage out
- Irrigate with NS using bladder syringe and gently aspirate
- Repeat until mucus-free

Neobladder
- Voids and bladder washout regime

<table>
<thead>
<tr>
<th>Voiding frequency</th>
<th>Bladder washout frequency</th>
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<tbody>
<tr>
<td>1st week</td>
<td>Daytime: Q2H, Night time: Q3H</td>
</tr>
<tr>
<td>2nd week</td>
<td>Daytime: Q3H, Night time: Q4H</td>
</tr>
<tr>
<td>3rd week</td>
<td>Daytime: Q4H, Night time: Q5H</td>
</tr>
<tr>
<td>4th week</td>
<td>Daytime: Q5H, Night time: Q6H</td>
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Neobladder
- Initial neobladder capacity ~ 150ml
- Bladder training
  - Aim: Increase pouch capacity, decrease voiding frequency
  - By gradually increase the time between each micturation
    - Hold until timed schedule even with dribbling
    - Pouch will reach its ideal capacity of ~ 500ml after 6-12 months

Neobladder
- Possible late complications
  - Vit B12 deficiency (if over 100cm ileum and ileo-caecal segment resected)
  - Pouchitis
  - Urolithiasis
  - Ureteral / urethral stricture
  - Ruptured pouch

Neobladder
- Discharge advice
  - Avoid heavy lifting and sexual activity for 3 months
  - Apply urinary sheath if incontinence at night time
  - Pelvic floor exercise
  - Educate for S/S of UTI
    - Fever
    - Cloudy urine with foul smell
    - Haematuria
    - Loin pain or abdomen pain

Neobladder
- Discharge advice
  - Empty reservoir when sense of “fullness”
  - Should not exceed 6 hrs between each empty time
  - CISC and irrigate reservoir if frequent incomplete emptying
Thank you!