Catheter Management

Veruschka Hines
District Nurse/Continence
13/06/19

Aims and Objectives

- To increase knowledge and understanding of catheters and catheter issues.
- To be able to identify and manage basic catheter problems.
- To confidently care for patients with catheters in-situ.
- To identify and recognize autonomic dysreflexia.

Indications for Catheterisation

- To manage acute and chronic urinary retention.
- For pre and post op procedures.
- To accurately measure urine output in acutely ill patients.
- To manage urinary incontinence when other methods of urine containment are inappropriate, including comfort for the terminally ill patient.
- To manage skin damage caused by UI.

Contraindications

- Urethral catheterization should be avoided in circumstances where urethral trauma may have occurred, e.g. pelvic fractures and ‘straddle’ injuries.

Indwelling Catheterisation Vs Intermittent self catheterisation

- Urinary catheterisation should be viewed as a last resort for continence management due to the serious risks and complications associated with catheters.
- Intermittent self catheterisation is considered the gold standard for the management of bladder-emptying dysfunctions and following surgical interventions. This is due to the lower risk of developing catheter associated urinary tract infection (CAUTI) and patient comfort associated with intermittent self catheterisation (ISC).
- Within Kapiti community health services 58 patients do ISC and 32 patients have either an IDC or an SPC.

Complications of urinary catheterisation

- Trauma or introduction of bacteria into the urinary system, resulting in infection, and possible septicemia or death.
- Urine bypassing the bladder.
- Bladder spasms.
- Urethral perforation.
- Blockage of the catheter.
- Encrustment.
- Urinary stones.
- Chronic renal inflammation.

Complications continued...

- Profound effects on a patient's social, work, and psychological well-being.

Catheter associated urinary tract infections (CAUTI)

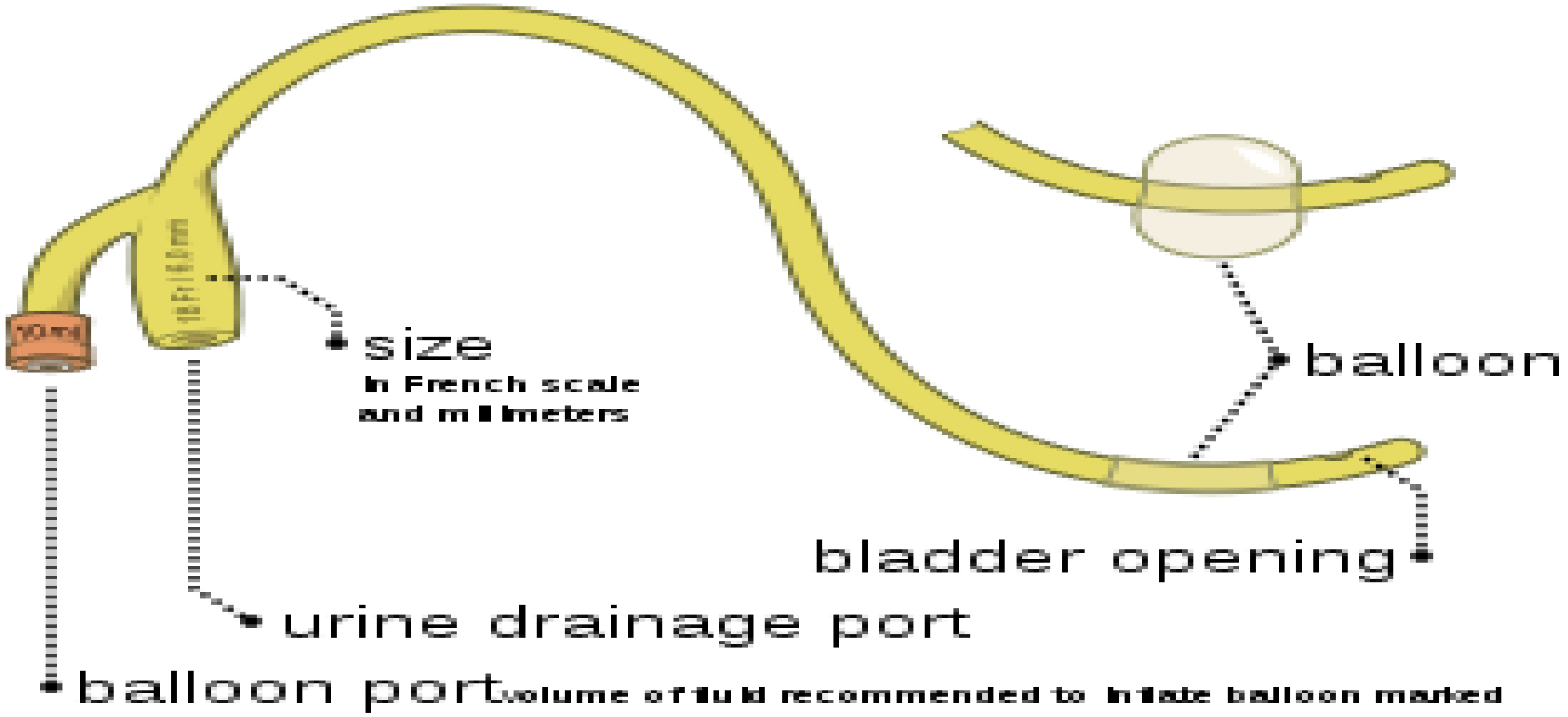
- There are several reasons why infection occurs. Having a catheter in place interrupts the normal micturition cycle, which works by filling, flushing and emptying the bladder, thus washing away any harmful bacteria that otherwise may build up and cause infection.
- Bacteria can enter the bladder via two pathways: the periurethral pathway and the intraluminal pathway. Bacteria entering the bladder via the periurethral route move into the bladder between the outside of the catheter and the inner side of the urethral wall. Bacteria entering via the intraluminal route (most common route), move upward inside the catheter after contamination of the drainage bag through the outflow tap or disconnection of the catheter.

CAUTI CONT…

- Bacteria associated with CAUTI are problematic because they attach to the surface of the catheter and produce a biofilm.
- Biofilms will form on the catheter material within 48 HOURS of insertion, increasing the risk of CAUTI.
- Biofilm is a densely adherent polysaccharide structure that protects bacteria from the body’s natural defense mechanisms, allowing for bacterial growth and reproduction.
- Almost all patients will develop chronic bacteriuria (presence of bacteria in the urine) if the catheter remains in place for more than 30 days, chronic infection is common in long term catheter users.

CAUTI continued...

- Infection may also be increased because the balloon of the catheter sits on the neck of the bladder, obstructing the urethral opening. This creates a residual volume of urine that may rise to as much as 100mls in some patients. As this residual volume lies static in the base of the bladder below the drainage eyelets of the catheter, it rapidly becomes infected and colonized.


size
In French scale
and millimeters
balloon
bladder opening
urine drainage port
balloon port
volume of fluid recommended to inflate balloon marked

Symptoms of Catheter Acquired UTI

- Raised temperature .
- Fever, tachycardia, rigors.
- Feeling unwell, malaise, altered mental state, delirium.
- Haematuria.
- Pelvic discomfort, pain.
- Patient feels ‘different’.

Best practice around UTI's

- Change catheter when UTI suspected.
- Take catheter sample from the new catheter and state on the label that it is a catheter sample.
- Cut tip of removed catheter and inspect for debris.
- Only treat UTI if symptomatic.
- If antibiotics indicated change catheter once AB's finished and recheck UTI status with a repeat sample IF patient remains symptomatic.

Purple Urine Phenomenon

- Occasionally a purple colour appears in drainage bags.
- The purple indigo syndrome has been described most commonly in the immobile patient with a low gut transit time, alkaline urine and urinary tract infection with proteus or pseudomonas. Decomposition of tryptophan in the gut produces indoxyl sulphate which is absorbed and oxidises to indigo in the urine drainage bag.
- It is normally a harmless phenomenon, people with purple urine bag syndrome usually do not complain of any symptoms, however if an infection is present it should be treated. More common in female nursing home residents.

Trouble Shooting Catheters

- Frequent blockages – bring catheter changes forward. No evidence for washouts. Bladder washouts can increase mucosa and bleeding to occur by increasing the internal pressure within the bladder and disturbing the lining of the bladder wall.
- Bladder washouts also increase risk of infection when drainage bag disconnected.
- Procedure is time consuming.
- Can induce autonomic dysreflexia with spinal cord injury patients.

Trouble Shooting cont...

- UTI's – only treat if symptomatic.
- Urine bypassing – check for UTI, try reinflating balloon with less water, change to smaller size catheter.
- No drainage of urine – check for kinks, try reinflating balloon, change day bag, stand patient up if possible, check fluid intake, change catheter if all else fails.
- Catheter difficult to withdraw – inflate balloon with 1-2 mls sterile water to smooth ridges, use lignocaine around meatus/SPC site, try twisting catheter while withdrawing it.

Autonomic Dysreflexia

- Caused by uncontrolled sympathetic nerve response in spinal cord injury patients below level of injury from T6 down, e.g. IDC change, manual bowel evacuations, full bladder, constipation, tight leg bag straps, pressure ulcers.
- Potentially life threatening – needs immediate management. Risk of stroke or death through painful stimulus raising blood pressure.
- Remove cause, e.g. address full bladder, sit patient up with legs over bed, call for medical assistance if unresolved.


THANK YOU