

W24: Use of Catheters: The "Ins and Outs" of the Benefits, Risks and Management

Workshop Chair: Diane Newman, United States
08 October 2015 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:10	Introduction and overview of workshop	Diane Newman
09:10	09:50	Current use of urologic catheters with differentiation of techniques, indications, complications and nursing management.	Diane Newman
09:50	10:20	Current guidelines on the use of urinary catheters	Sharon Eustice
10:20	10:30	Questions	All
10:30	11:00	Break	None
11:00	11:30	Use of catheters for incontinence surgical procedure	Howard Goldman
11:30	11:50	Evolving research on catheter self-management and impact on quality of life	Mary Wilde
11:50	12:00	Discussion	All

Aims of course/workshop

Aims:

This workshop will provide a comprehensive review of urologic catheters; indications, and complications. There will be a discussion of current catheter technology and provide evidence-based clinical guidelines. The use of catheters in surgical cases will be presented. The workshop will also include a "hands-on" section reviewing different catheters, sizes, material, etc.

Objectives:

1. To detail the current use of urologic catheters used for incontinence and retention.
2. To differentiate the various catheterisation techniques, indications, complications and nursing management.
3. To understand the perioperative use of catheters for incontinence surgery with a discussion of protocols.

Learning Objectives

1. To detail the current use of urologic catheters used for incontinence and retention.
2. To understand the perioperative use of catheters for incontinence surgery with a discussion of protocols for discontinuing catheters.
3. To present evidence-based guidelines on the use of urinary catheters, especially in relation to catheter associated UTIs

Speakers:

Chair, Speaker 1

Diane K. Newman, DNP FAAN

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Current use of urologic catheters with differentiation of techniques, indications, complications and nursing management.

Urinary catheters are used for management of urine leakage as part of bladder management. A catheter is placed internally or externally, and may remain for a short or long period of time, depending on the type of catheter and the reason for its use. Complications such as catheter associated UTIs occur with long term catheter use and increase patient mortality. This area has seen new technology advanced, evidence-based guidelines developed and professionals need to remain current and informed on how they may impact practice. This lecture will provide a short review of the types of catheters, current indications, complications associated with urinary catheters, provide recent regulatory changes on their use, guideline directives, and detail examples of innovative and new technology.

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Speaker 2:

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[Current guidelines on the use of urinary catheters](#)

There are many examples of clinical guidance for the best use of indwelling urinary catheters, which predominantly endeavor to guide healthcare professionals in considering alternative methods of management of bladder dysfunction and reduce infection. A key challenge for modern healthcare is the embedding of these recommendations of best practice into everyday clinical work. This presentation will aim to:

- Recognise the drivers towards clinical guidelines
- Understand what makes up a ‘good’ clinical guideline
- Appreciate similarities and differences between selected, available guidelines for indwelling urinary catheters

References

Alonso-Coello et al (2011) The updating of clinical practice guidelines: insights from an international survey. *Updating Guidelines Working Group. Implement Sci.* 2011; 6: 107

Bernard et al (2012) A review of strategies to decrease the duration of indwelling urethral catheters and potentially reduce the incidence of catheter-associated urinary tract infections; *Urologic Nursing* 32(1):29-37

Loveday H P et al (2014) epic3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England *Journal of Hospital Infection* 86S1 S1–S70

NICE (2012) Infection Control: Prevention of healthcare-associated infection in primary and community care; *Clinical Guideline 139*; National Institute for Clinical Excellence

Speaker 3:

Howard Goldman, MD

Professor, Cleveland Clinic, USA

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Surgical Indications for Catheter Use

Surgical indications for catheter use include operative procedures that are lengthy and require bladder drainage, those that are in the area of the bladder and require a non-distended bladder, those requiring monitoring of urine output and reconstructive urological procedures that require either prolonged low-pressure drainage or urethral stenting. If surgery is away from the pelvis the catheter is typically placed before the rest of the patient is prepped while those placed for pelvic surgery are placed after the field is prepped and draped. In those cases that are lengthy or just require a decompressed bladder during surgery the catheter typically can be removed immediately or within 24 hours post-operatively.

Reconstructive procedures where a catheter may be left in to allow for structural healing include multiple bladder or ureteral operations. In addition various types of urethral surgery require an indwelling catheter to “stent” the urethra and minimize urine flow through the reconstructed urethra/bladder neck while those structures heal.

Other surgeries, particularly those involving the vagina (prolapse repairs), uterus (hysterectomy), or rectum/anus may cause temporary incomplete emptying or retention and necessitate catheter drainage. Most of these will resolve spontaneously in short order and if they do not can be managed with CIC.

Specifically, when dealing with anti-incontinence procedures postoperative catheters are typically not needed. In the past many routinely left suprapubic catheters to enable patient monitoring of post void residuals after surgery. In the era of the ‘tension free midurethral sling’ the majority of patients void postoperatively and if not a Foley can be left for 48 hours. Patients undergoing autologous fascial slings may

take a few days/weeks to void normally and a catheter can be left in for a few days or they may be taught CIC.

Common types of catheters used in surgery

The standard Foley catheter is the most commonly used. In men with BPH/median lobe/after TURP, a coudee catheter, which has an upward curve at the tip, is often used. If there is a stricture and/or difficulty

navigating the urethra such that cystoscopy is necessary a Council catheter, which has a hole at the tip allowing it to be passed over a wire, may be utilized.

After reconstructive procedures a Foley may be utilized in the suprapubic position. Sometimes to facilitate catheter placement a Malecot or mushroom catheter, which utilizes flanges, as opposed to a balloon to keep it in the bladder may be placed.

Suprapubic versus transurethral catheter use

Patients requiring permanent or very long-term catheter use may benefit from a suprapubic tube. In the long-term it is less traumatic than one left in the urethra and for those with mobility issues may be easier for caregivers to change - particularly in women. After bladder reconstructive surgery requiring a few weeks of catheterization – an SP tube may be preferred. There is limited data that SP tubes may be associated with fewer UTIs than a transurethral catheter.

Antibiotic use for catheters and at time of catheter removal

Typically not warranted

Cochrane review – antibiotics in long term catheterized patients - Possible benefits of antibiotic prophylaxis must be balanced against possible adverse effects, such as development of antibiotic resistant bacteria. These cannot be reliably estimated from currently available trials.

AUA Choosing Wisely Statement 2015 – Don't prescribe antibiotics for patients with indwelling catheter unless has symptoms of infection

Cochrane review – antibiotics in immediate post op period in catheterized patients - The limited evidence indicated that receiving prophylactic antibiotics reduced the rate of bacteriuria and other signs of infection, such as pyuria, febrile morbidity and gram-negative isolates in patients' urine, in surgical patients who undergo bladder drainage for at least 24 hours postoperatively. However this is based on few studies so interpret with caution.

Some give a single dose of antibiotic at the time of catheter removal to “clear” the urine. Data that supports this practice is weak

Populations where indwelling catheter may be reasonable and necessary

Patient with retention or “neurogenic bladder” who are not amenable to definitive treatment and cannot do or it is not possible to do CIC, sacral or perineal wounds with incontinence, prolonged immobilization, morbid obesity and incontinence, lower extremity contractures, and comfort measures for end of life care

Structural complications of catheter use

At time of placement: uUrethral trauma, undermining of bladder neck

Suprapubic – bowel injury

Long term: Acquired hypospadias

Urethral destruction in women – may ultimately require bladder neck closure with extensive destruction

Bladder compliance changes

Bladder malignancy

Surgical alternatives to indwelling catheter

Retention – the “spanner”

Flaccid bladder – augmentation

Bladder neck destruction – bladder neck closure and diversion

Continent catheterizable stoma, Ileal conduit

Healy EF, et al, *Obstet Gynecol*, 2012, 120: 678-687

Lusardi G, et al. Antibiotic prophylaxis for short-term catheter drainage in adults. *Cochrane Review*, 2013. Issue 7

Niel-Wiese BS, et al. Catheter policies for long-term bladder drainage. *Cochrane Review*, 2012. Issue 8

Pfefferkorn U, et al. *Ann Surg*. 2009, 249:573-575

Van Hees BC, et al. *Clin Microbiol Infect*. 2011, 17:1091-1094

Speaker 4:

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Evolving research on catheter self-management and impact on quality of life

By Spring 2016, Dr. Wilde will make available the materials from both of the above NIH funded studies for research, clinical practice, and/or education but not for commercial purposes. This includes: 1) both educational booklets in word format, 2) the urinary diary from the R01 study (for indwelling catheter users) in word format, and 3) the urinary diary (for intermittent catheter users) from the R21 study in web format, enhanced for mobile phone use. The following is a statement explaining about the use of this intellectual property which is governed by UR Ventures, a part of the University of Rochester. There will not be a charge for these services or materials, but a contract will be made for usage. This is a quote from the main R21 article (which is in review now) about access and use of the urinary diary:

“The programming code for the urinary diary was created at the University of Rochester, School of Nursing. License to the copyright code and site materials is available from the University of Rochester for use in research or as a clinical tool to improve health. The license is based on the Creative Commons Attribution-NonCommercial-ShareAlike License. License terms are available at <https://creativecommons.org/licenses/by-nc-sa/4.0/legalcode>. The licensee could then modify it to meet their evolving needs. The future versions may thus evolve significantly beyond our original product. For more information, please contact the first author [Wilde].”

Selected publications in the past five years:

Wilde, M. H., McMahon, J. M., McDonald, M. J., Tang, W., Wang, W., Brasch, J., Fairbanks, E., Shah, S., Zhang, F., & Chen, D. (January/February 2015) Self-management intervention for long-term indwelling urinary catheter users: Randomized clinical trial. *Nursing Research*. 64 (1), 24-34.

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- Fairbanks, E., Shah, S., Wilde, M.H., McDonald, M.V., Brasch, J., McMahon, J.M. (2014, Oct). Successful recruitment methods in the community for a two-site clinical trial. *Applied Nursing Research*. 27, 254-257.
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