

PERSPECTIVE

LESS IS MORE

Urinary Catheterization—When Good Intentions Go Awry

A Teachable Moment

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Story From the Front Lines

A man in his 80s with a history of mild dementia and peripheral vascular disease with left below the knee amputation presented to our general medicine service with several weeks of fatigue and worsening lower extremity edema. He was found to have acute kidney injury and nephrotic range proteinuria. He did not have his prosthesis in the hospital and was unable to ambulate to the bathroom without it. A urinary catheter was placed to monitor urinary output while he received diuretics. After several days of diuresis, his symptoms were much improved, and he was discharged home.

Five days after discharge, the patient was readmitted to the medical intensive care unit with severe sepsis due to a lower urinary tract infection (UTI). His sepsis was almost certainly due to the urinary catheter our medical team had inserted during his prior admission. With treatment, he recovered and was discharged home, but the hospitalization and its risks could probably have been avoided had he not been catheterized.

Teachable Moment

Urinary tract infections are one of the most common nosocomial infections, and urinary catheterization is thought to be the etiology of 70% to 80% of these infections.^{1,2} For these reasons, preventing inappropriate urinary catheterization was recently cited in the "Top 5 List" of the Society of Hospital Medicine's recommendations in the American Board of Internal Medicine Foundation's "Choosing Wisely" campaign.

Current guidelines recommend urinary catheterization for acute urinary retention, intraoperative urinary measurement for selected surgical patients, and monitoring of urinary output in critically ill patients to aid healing of sacral wounds or decubitus ulcers in patients with incontinence, and to improve comfort in end-of-life care as needed.^{1,2} Physicians' orders are required prior to the placement of an indwelling Foley catheter at our medical center. Nursing staff at our medical center are then required to fill out a care bundle in the patient's medical chart detailing the indication for catheterization. This bundle details the indication and type of catheter used as well as acting as a procedure note, similar to templates used elsewhere in the Veterans Affairs system and those recommended by national guidelines.^{1,3} Despite this nar-

row range of indications and standard procedure technique, it has long been known (through both anecdote and research) that urinary catheters are often inserted far more frequently in clinical practice than indicated.⁴

External catheters have been proposed as a potential alternative to indwelling urinary catheters, and there is some evidence that elderly male patients find external catheters to be more comfortable and less painful.⁵ External catheters, however, are not without their own risks. This includes skin damage in the genital area as well as UTIs. Saint et al⁵ published a small randomized clinical trial in 2006 comparing external catheters and indwelling catheters using the composite outcome of bacteriuria, symptomatic UTI, and death. This suggested only a small increase in the incidence of composite outcome (mostly owing to the incidence of bacteriuria) in patients who had indwelling catheters compared with those with external catheters. There was no difference between the 2 devices in patients with dementia. Hence, external catheters can still pose substantial risks.

Given the known risks of urinary catheterization, why are patients, especially elderly patients, catheterized so frequently? There is a perception that in immobile elderly patients urinary catheterization is a convenient method for managing incontinence for both the patient and hospital staff. However, in such cases, diapers are a viable alternative for managing incontinence. Saint et al⁵ previously showed that there is a sizeable portion of men who actually prefer diapers to external and indwelling catheters.³ Moreover, elderly, immunocompromised, and female patients are at an increased risk for catheter-associated UTIs. Accordingly, national guidelines recommend against catheterization for management of incontinence in these populations.^{1,2} Indwelling catheters are also thought to prevent patients from soiling themselves and decrease the risk of skin breakdown. However, there is no clear evidence about whether urinary catheterization offers primary prevention against skin breakdown.

Ultimately, this patient's catheterization led to a major complication. Had we explored alternate options, such as urinals or toilet collection of urine while letting him use his prosthesis, we might have been able to avoid his repeated

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admission with severe sepsis. In summary, this patient is a strong reminder that our first job is to do no harm. In his case, we were so focused on monitoring and treating the potentially

life-threatening nephrotic syndrome that we missed the fact that our "low-risk" intervention actually led to a more disastrous effect.

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