more than four decades ago, Dr. Paul Beeson persuasively argued against routine use of indwelling urinary catheters in hospitalized patients, making the “case against the catheter” (1). He urged, “The decision to use this instrument should be made with the knowledge that it involves risk of producing a serious disease” (1). This advice remains relevant today. Although these devices provide indispensable benefits, they are also the dominant risk factor for hospital-acquired urinary tract infection, the most common nosocomial infection in the United States (2). Infections and other untoward effects associated with indwelling urinary catheters lead to increased health care costs, patient discomfort, morbidity, and even death (3–6).

Regrettably, unjustified and excessively prolonged catheter use persists despite clear evidence of its detrimental effects (7–9). Indwelling catheters have the practical effect of needlessly confining patients in what could be called a “one-point” restraint, raising serious safety and ethical concerns analogous to those noted more than a decade ago with “four-point” (limb) restraints. Lessons learned from efforts to curtail the use of physical restraints may help identify strategies for diminishing the use of indwelling urinary catheters.

**Indwelling Urinary Catheters Are Widely—and Often Inappropriately—Used**

Each year, almost 25% of the approximately 96 million urinary catheters sold worldwide are sold in the United States, where between 16% and 25% of hospitalized patients have an indwelling urinary catheter (9, 10). In a substantial proportion of these patients, the catheter is used inappropriately (7, 8). Two decades ago, a study of hospitalized patients found that catheter use was unjustifiable for more than one third of the hospital days they were in use (8). More recently, Jain and colleagues (7) reported that initial insertion was unjustified in 21% of hospitalized patients with a urinary catheter and that continued catheter use was unwarranted for almost half of the days patients were catheterized.

Why are urinary catheters often used inappropriately? Ignorance of published recommendations (11, 12) probably accounts for part of the problem. Another reason is physician uncertainty about the patient’s medical course and possible reluctance to reinsert a needed catheter. In addition, catheters may be placed and maintained for the convenience of hospital staff (4, 7), thus eliminating the need to change wet clothing or bedding, or perhaps for the prevention of skin maceration.

Finally, catheters may be used inappropriately because physicians “forget about” or were never aware of the presence of the catheter. Recently, more than one third of attending physicians and more than one quarter of resident physicians at four academic medical centers answered incorrectly when asked whether each patient on their service had a urinary catheter in place (9). The proportion of physicians unaware of the presence of a catheter was even higher for the inappropriately catheterized patients: greater than 50% of attending physicians and greater than 40% of senior residents (9). These “forgotten” catheters often remain in place until either a catheter-related complication occurs or the patient’s discharge is imminent.

**Burden of Illness Associated with Indwelling Urinary Catheterization**

The incidence of bacteriuria in catheterized patients is directly related to the duration of catheterization; the daily rate of acquiring bacteriuria is approximately 3% to 10% (13). In patients with bacteriuria, 10% to 25% will develop symptoms of local urinary tract infection (3, 14), and about 3% will develop bacteremia, a serious and possibly life-threatening complication (3). Catheter-related infection is also associated with increased mortality, but whether the relationship is causal is controversial. Some argue that this infection is merely a marker of severe underlying disease. Two studies have found, however, that urinary catheter-related infection leads to an almost threefold increase in risk for death, independent of other comorbid conditions (5, 6).

Another medical consequence of catheter-related infection is increased health care costs. Each episode of hospital-acquired, symptomatic, catheter-related infection costs at least $676, and each episode of catheter-related nosocomial bacteremia costs at least $2836 (3). Thus, the cumulative economic burden of nosocomial catheter-related infection is substantial.

**Patient Rights, Comfort, and Dignity**

Beyond the health and financial burden of inappropriately catheter use is the substantial patient discomfort caused by catheters. In a recent prospective study, 42% of catheterized patients reported that the indwelling catheter was uncomfortable, 48% reported that it was painful, and 61% noted that it restricted their activities of daily living (4). Two respondents provided unsolicited comments that their indwelling catheter “hurts like hell” (4). For some patients, urinary catheters operate as physical restraints, tantamount to binding them to the bed; catheters substantially and unnecessarily limit patients’ ability to function freely and with dignity. Restricted activity not only reduces patient autonomy but also promotes such nosocomial complications as venous thromboembolism and pressure ulcers. Thus, we believe that the overuse of indwelling urinary catheters shares many similarities with physical restraints applied to the extremities or torso.
Physical Restraints

Physical restraints were also once common in hospitalized patients, but their use has decreased dramatically in the past decade (15). Like urinary catheters, restraints were justified as “protecting” the patient, including, ironically, from removing devices such as urinary catheters. Indeed, preventing the disruption of other therapy remains a frequent rationale for their use (15, 16). At times, restraints were used to keep patients from wandering or falling or from being injured due to agitated behavior (16). Physicians were sometimes unaware that their patients were restrained (17), and nurses frequently used restraints without a physician’s order (16, 17).

Reports of death associated with physical restraints initiated a cascade of inquiries into this practice. Comprehensive studies in various clinical settings soon revealed that these devices were used frequently (18), even though they were disliked by patients (18) and were associated with nosocomial infection and pressure sores (19). With little evidence to support the use of physical restraints and substantial arguments against their use in all but the most extenuating circumstances (20), medical, nursing, public health, and administrative leaders called for change.

Health care organizations successfully decreased the use of physical restraints in various ways, including staff education and the use of committees to prospectively review the need for restraints. In the policy arena, the Omnibus Reconciliation Act of 1990 prohibited routine use of physical and chemical restraints in long-term care settings, and the Joint Commission on Accreditation of Healthcare Organizations implemented restraint-specific accreditation standards. Finally, federal regulations enacted in 1999 require that patients be free of unnecessary restraints, that restraints be used only when less restrictive interventions are ineffective, and that restraints be used only with the order of a licensed practitioner (21).

Are Indwelling Urinary Catheters a “One-Point” Restraint?

Limiting the use of physical restraints is a medical, organizational, and public policy success story. After recognizing the problem, health care facilities organized systematic approaches that decreased the use of physical restraints; the facilities were encouraged and sometimes compelled to do so by changes in public policy. We urge a similar multipronged approach for the overuse of indwelling urinary catheters. Few studies have carefully examined the effects of indwelling urinary catheters, especially in comparison with other means of bladder drainage or incontinence management (12); however, available data demonstrate frequent inappropriate use of and consequent harm from urinary catheters. The level of patient discomfort with this highly strategic one-point restraint is doubtless equal to or greater than the discomfort experienced with two-point or four-point extremity restraints. In our experience, physical restraint use is similar to urinary catheter use in that it is frequently initiated by nurses (7), often without a physician’s order (Saint S. Unpublished data). A major difference, however, is that urinary catheters are more often crucial to patient care than are physical restraints. Therefore, policies regarding placement of indwelling catheters must reflect the important distinction between catheters that have been appropriately inserted and maintained and those that were not initially justified or were left in place for a period longer than necessary. Inappropriate restraint of patients who entrust their care to physicians, whether at four points of mobility or at one of high sensitivity, can no longer be condoned. Partly on the basis of strategies implemented to diminish the use of physical restraints, we propose the following recommendations to improve catheter use.

Recommendations

1. Educate all medical and nursing staff about adverse clinical consequences, patient discomfort, patient embarrassment, and activity restrictions associated with urinary catheterization.
2. Familiarize hospital personnel with the appropriate use of indwelling catheters and the availability and efficacy of other strategies and devices to manage urinary incontinence (for example, condom catheters and special undergarments).
3. Use quality-control patient audits to design institution-specific programs to decrease inappropriate use of indwelling urinary catheters.
4. Develop and evaluate the effectiveness of automatic “stop orders” for indwelling urinary catheters; these orders should require that the catheter either be removed or reordered after a specified period of catheterization (for example, after 48 hours).
5. The Joint Commission on Accreditation of Healthcare Organizations and other regulatory bodies should consider developing strategies regarding inappropriate use of indwelling urethral catheters for health care organizations.

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References

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Imaging His Pain

His finger circled, and circled
the ecchymosis.
Here,
it hurts here,
deep under the ribs,
not the ribs,
no not the ribs,
they don’t hurt, not at all,
see,
I can punch them,
no pain.
When the red spot it came up,
then I knew,
I knew I must have an infection deep in an organ,
deep in an organ,
not here on the surface,
not the ribs,
see they don’t hurt.
Three weeks,
it’s always there,
doesn’t go away.
can’t sleep on my left side,
hurts too much here,
it hurts here,
deep in an organ,
I know I’ve got an infection deep in an organ.

We scanned the site with X-rays
to visualize the source of his pain.
Nothing there,
nothing in his left lower chest area. But—
the radiograph showed instead
a huge mass in his right suprahilar area,
a subcarinal density, and
peripheral nodules in both lung fields.
Chest and abdominal CT scans confirmed
nothing
at the site of his pain.

The chest X-ray hangs on the view box,
light shining through the lesions,
darkness where his finger circled minutes ago. But—
his pain is there,
deep in organ space,
so deep X-rays can’t penetrate it,
so deep I can’t transilluminate it.
I stare at the black and white image of his innards.
The tumors radiate,
suns burning my retina,
leaving scars,
permanent blind spots
that sense his eclipse
by pain.

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