

# Outcomes of Surgery for Stress Urinary Incontinence in the Older Woman



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## KEYWORDS

- Age-related outcomes • Stress urinary incontinence • Older women
- Urogynecology • Urology • Counseling

## KEY POINTS

- Women aged 65 years and older have many unique age-related concerns that are critical to optimizing patient care and surgical outcomes.
- Older women may have increased comorbidities, resulting in decreased physical reserve. Careful preoperative evaluation is paramount to avoid adverse geriatric postoperative outcomes that often include falls, disability, nursing home admission, and mortality.
- Several minimally invasive surgical interventions exist for the treatment of stress urinary incontinence (SUI) and are well tolerated in older women. Balancing the risks and benefits of each of these management options is imperative.
- Differences in surgical outcomes between older and younger women may reflect changing physiology with aging. Robust patient counseling regarding available data may inform to patient expectations of outcomes.
- As the population of older women continues to expand, robust data on age-related outcomes of SUI interventions are needed to enhance patient counseling and outcomes.

## CRITICAL NEED FOR AGE-RELATED OUTCOMES

### *Introduction: Context for Understanding Age-Related Surgical Outcomes*

Prevalence rates of urinary incontinence (UI) increase with age. A large secondary analysis of the National Health and Nutrition Examination study revealed that the proportion of women who reported UI symptoms increased from 6.9% (95% confidence

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interval [CI], 4.9%–9.0%) in women aged 20 to 39 years, to 17.2% (95% CI, 13.9%–20.5%) in women aged 40 to 59 years, to 23.3% (95% CI, 17.0%–29.7%) in women aged 60 to 79 years, and to 31.7% (95% CI, 22.3%–41.2%;  $P < .001$ ) in women aged 80 years or older.<sup>1</sup> Furthermore, as the US population aged 65 years and older continues to increase, women will be seeking surgical care for this condition in increasing numbers.<sup>2–5</sup>

Older women (aged  $\geq 65$  years) have many more concerns with respect to undergoing SUI surgery compared with younger women. Increasing medical morbidities including cardiac arrhythmias, use of blood thinners, diabetes, and hypertension require optimization before surgery. Older women have an increased risk of postoperative morbidity and mortality compared with the younger woman.<sup>6</sup> Risk of perioperative complications were also noted to be higher in women aged 80 years or older compared with the younger woman (odds ratio [OR], 1.4; 95% CI, 1.3–1.5). Attention to cognitive and functional outcomes as well as quality of life are also important to consider in this population.

Bladder physiology and function also changes with age.<sup>7,8</sup> In a recent study of 2 large cohorts of women undergoing SUI surgery, noninvasive maximum urinary flow decreased significantly with age (26.2 vs 22 mL/s,  $P = .002$ ). Noninvasive flow voiding time increased by 2.7 seconds for each 10-year age increment, and detrusor pressure at maximum flow decreased by 2.1 cm H<sub>2</sub>O for each 10-year increase in age (each  $P = .003$ ). Hypocontractility was more likely in women aged 65 years or older (OR, 2.89; 95% CI, 1.59–5.27). The bladder contractility index was inversely related to age, decreasing by a mean  $\pm$  standard deviation of  $7.68 \pm 1.96$  cm H<sub>2</sub>O for each 10-year age increase ( $P < .001$ ). These observed changes in voiding parameters suggest that detrusor contractility and efficiency decrease with age and will have implications for management of postoperative voiding function.

In the older woman, outcomes of surgery reflect all these considerations and not just a negative result of cough stress test. This review discusses outcomes and other important considerations in the setting of SUI surgery in the older woman.

## PERIOPERATIVE CONSIDERATIONS AND EVALUATION IN OLDER WOMEN

### *Pathophysiological Changes to the Lower Urinary Tract*

Urinary symptoms, including urinary frequency, urinary urgency, nocturia, and UI are common conditions in older women and increase dramatically with age. The underlying cause for the age-related onset of urinary symptoms is not completely understood, but it is likely multifactorial, resulting from sensory changes in the aging detrusor muscle, muscle loss of the levator ani muscle and urethral sphincter, physiologic changes in urine production, concurrent medications, and coexisting neurologic disease.<sup>9</sup> As women age, bladder capacity, detrusor contraction pressure during micturition, functional urethral length, and maximal urethral closure pressure decrease, whereas postvoid residual nocturnal urine production increases.<sup>10–12</sup>

Increased UI in the older woman is often not only due to sensory and muscle loss in the lower urinary tract but also due to a combination of systemic disease and functional decline affecting the lower urinary tract. Decreased mobility also affects urinary symptoms. Functional UI is “from physical or cognitive limitations [that prevent a person from] reaching or using the toilet” and common in older women.<sup>13</sup>

UI in older women is often considered a geriatric syndrome.<sup>14</sup> Geriatric syndromes are highly prevalent multifactorial health conditions that have substantial morbidity and are associated with adverse outcomes of aging in older adults including disability, nursing home admission, and mortality. Other common geriatric syndromes include

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