EDITORIAL COMMENT

UROLITHIASIS

The geriatric trifecta in benign urological surgery: an EAU endourology perspective on defining surgical success in older adults

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INTRODUCTION

In many countries worldwide, the proportion of older adults is increasing, a consequence of longer life expectancies and lower birth rates. As a result, the number of elderly who undergo surgery continues to rise. In a U.S. study of nearly two million individuals ≥65 years old, 31.9% underwent a surgical procedure during their last year of life, and 18.3% during their last month [1]. Urology is no exception to this trend. A national study in Poland revealed that approximately two-thirds of all urological inpatients were adults aged ≥60 years [2].

This demographic shift raises an important question: How should surgical success be defined for older adults, and are the traditional metrics we apply to younger, "index" patients equally meaningful in this population?

The standard outcomes reported in surgical literature, such as stone-free rates (SFRs) or maximal urinary flow rate (Q_{max}) , may not fully capture what older patients likely value most. For many, metrics such as returning to their previous place of residence, avoiding long-term institutional care, and maintaining functional independence are of equal or greater importance [3].

In benign urological disease, the condition itself is rarely life-threatening and can often be managed non-operatively, albeit at a cost to quality of life. For example, urinary retention can be managed with a long-term catheter instead of bladder outlet surgery. Similarly, an obstructive stone in a frail, older adult can theoretically be managed indefinitely with a permanent nephrostomy. However, these alternatives come with their own burdens, including reduced quality of life. As such, decision-making in this context is complex and should be multidisciplinary. A procedure may be considered "successful" by traditional standards yet still result in a net loss for the patient if it leads to a functional decline or permanent nursing home admission.

Based on these considerations, we propose the "geriatric trifecta", a patient-centred model for evaluating surgical success in older adults undergoing benign urological procedures (Figure 1). Surgical success in this demographic should be considered achieved only when all three components are met:

1. Achieve the surgical goal

The goal should be clearly defined and realistic. For example, while achieving a zero-fragment stone-free rate is standard in younger patients, focusing on the removal of the culprit stone (e.g., the obstructing ureteric stone) may be a more appropriate goal in an older adult [3]. Similarly, in bladder outlet obstruction surgery, the objective should be to remove enough prostate tissue to enable reliable spontaneous voiding, without aggressively pursuing perfection. In this context, the adage "perfect is the enemy of good" is particularly relevant.

2. Avoiding major complications.

Although frail and older adults inherently carry a higher perioperative risk, it is major complications that have the most profound consequences [4]. Unlike younger patients, who often recover fully, older adults experiencing major complications are at greater risk of prolonged disability, loss of independence, and long-term functional decline [5]. Thus, avoiding major morbidity is essential to defining success.

3. Maintain or improve functional status

A key goal of surgery in older adults is ensuring that the procedure does not precipitate a long-term decline in functional abilities. This includes maintaining prior living arrangements (e.g., avoiding new nursing home admission), preserving mobility, and preventing cognitive decline. Ultimately, a "successful" operation should leave the patient at least as functional as before.

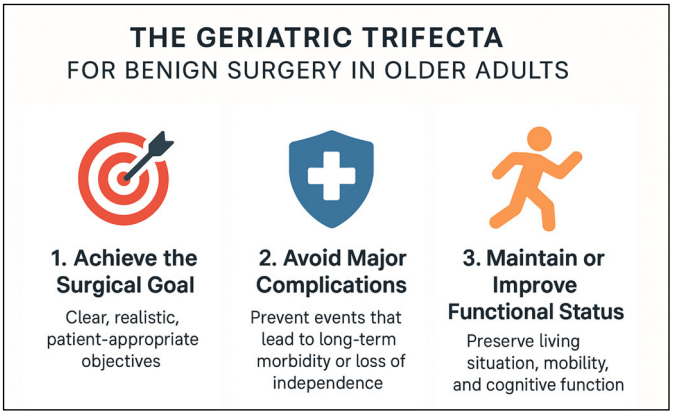

Figure 1. *Summary of geriatric trifecta principles.*

Ultimately, success in geriatric surgery is not defined by perfect imaging or textbook operative endpoints, but by whether an older adult can return to their life with independence and dignity intact. The "geriatric trifecta" reframes success in a way that reflects the lived experience of older patients and the decisions they face. By adopting this framework, surgeons can better align treatment plans with patients' values, improve communication, and ensure that the outcomes we strive for are the ones that matter most. This model needs validation in clinical practice. A prospective study assessing how many patients achieve all three elements of the geriatric trifecta could highlight where our surgical goals are unrealistic and help us better tailor treatment and expectations for older adults.

CONFLICT OF INTERESTS

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ETHICS APPROVAL STATEMENT

The ethical approval was not required.

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