the 3.5-cm cuff has a role in the management of male stress incontinence, stating that it allows better urethral coaptation when compared to larger cuff sizes.

Expert's comments:

When we combine the 3.5-cm cuff data demonstrating a higher rate of mechanical failure with the findings of Simhan et al. [1], who observed an erosion rate of 21% for 3.5-cm cuffs in primary artificial urinary sphincter (AUS) patients who had received radiation therapy, I feel that routine use of 3.5-cm cuffs for primary implantation is not advisable. Routine use of 3.5-cm cuffs dooms patients to higher reoperation rates and needlessly increases the financial burden on medical establishments. As an example, in my personal experience in more than 1550 AUS procedures, I found the need to place only three (0.2%) primary 3.5-cm cuffs [2].

On the basis of the literature, surgeons should limit implantation of 3.5-cm cuffs to highly select nonprimary AUS patients who have been comprehensively counseled that a 3.5-cm cuff results in a higher complication rate, some of which are permanent and irreparable [3].

My fundamental principle guiding AUS counseling is that we need to reduce the volume of leakage rather than have perfect dryness as the specific goal. As surgeons, we feel compelled to make things as perfect as possible. The AMS 800 is far from a perfect device. The argument I hear most is that 3.5-cm cuffs reduce the volume of leakage compared to larger cuffs. This may be true in the short term, but the greater urethral compression provided by a 3.5-cm cuff comes at a cost of increased erosion and reoperation.

Therefore, given the limitations of the AMS 800, we must deal with male incontinence in the best way we can. Of course we will continually try to improve the quality of life for our patients, but we must also counsel them that many times a little bit of leakage following AUS implantation is not only acceptable, but to be expected. This is especially true for surgeons with a low AUS volume (<10–15 implants/yr) who have not had sufficient clinical experience with the AUS to become familiar with its limits [4,5]. For these surgeons (who represent the vast majority of those carrying out implantations) very careful consideration must be given to the impulse to routinely implant small cuffs to make things “better”.

Conflicts of interest: The author has nothing to disclose.

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Re: Acute Kidney Injury After Partial Nephrectomy in Solitary Kidneys: Impact on Long-term Stability of Renal Function

Zabell J, Isharwal S, Dong W, et al

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Experts' summary:

In a selected cohort of 90 patients who underwent partial nephrectomy (PN) for renal tumor in solitary kidney, Zabell and co-workers investigated the impact on long-term renal function of acute kidney injury (AKI) at the time of PN [1]. It is noteworthy that AKI events were adjusted for the percentage of vascularized parenchyma preserved but were not significant predictors of long-term functional outcomes. Multivariable analysis, including preoperative variables of interest such as comorbidities (hypertension and diabetes) and tumor complexity, showed that the use of warm ischemia (vs cold ischemia) and diabetes were significantly associated with a progressive decline in renal function post-PN.

Experts' comments:

We commend Zabell et al for focusing on two hot topics in PN: the assessment of long-term renal function and the solitary kidney setting. The paper adds to the body of literature demonstrating long-term recovery of renal function after AKI related to PN, even in patients with a solitary kidney. The authors found that conventional warm ischemia impeded long-term recovery of renal function, supporting the adoption of cold ischemia, in line with findings from a recent study focused on at-risk patients (including those with a solitary kidney) [2]. Unfortunately, the relentless pursuit of minimally invasive surgery has prevented the widespread diffusion of cold ischemia because of the undoubted challenges in achieving cold ischemia during minimally invasive approaches. A recent literature review identified off-clamp techniques as more feasible alternatives in patients with poor renal function [3].

The analysis of unmodifiable factors revealed that diabetes was associated with a progressive decline in renal function, probably because of the metabolic insult triggered. The impact of comorbidities on renal function is controversial in the setting of PN. The same group failed to find an association between comorbidities and short-term recovery in a previous analysis. Conversely, comorbidities were linked to long-term functional stability [4]. The question is how to evaluate the comorbidities of interest specifically when discussing renal function after PN. The Charlson comorbidity index (CCI) is widely used in attempts to standardize reporting of comorbidities, but it applies to diseases that nowadays have a completely different effect on survival relative to the original development cohort because of massive improvements in the management of those diseases (eg, human immunodeficiency virus, diabetes, and liver disease). CCI is a validated tool predictive of mortality in various disease subgroups, including cancer and renal disease, but its use in predicting the odds of renal damage is improper. While awaiting a PN-dedicated standardized report, separate analysis of each comorbidity or risk factor of interest (diabetes, hypertension, smoking, and hypercholesterolemia) should be considered the most meaningful approach.

The study offers even more food for thought on the evaluation of renal function. Assessment of the percentage of vascularized parenchyma preserved after PN represents an issue in the literature. The authors considered two different estimation methods: software-based objective estimation from cross-sectional imaging (in 62%) and the surgeon's subjective estimation (38%). Undoubtedly, both methods are reliable for measuring the total parenchymal mass spared ("quantity spared") but they are likely to underestimate the amount of devascularized nephrons ("quality of the quantity spared") for different reasons. On one hand, objective software-based measurement relies on the timing of cross-sectional imaging during follow-up and the use of contrast enhancement. Unfortunately, contrast-based imaging is unrealistic for certain degrees of postoperative functional impairment. On the other hand, visual subjective measurement is hardly able to discriminate the proportion of devascularized parenchymal mass from the total parenchyma spared. Depending on the resection and suture techniques, an amount of healthy parenchyma will be preserved, but will inevitably be subject to ischemia to some extent by renorrhaphy.

Overall, volumetric assessment methods still lack certainty, and while many of them combined with software assistance have been proposed, none has proven better than a surgeon's subjective evaluation [5]. Nevertheless, in our opinion, software-based methods (possibly based on contrast-enhanced cross-sectional imaging) should be preferred when determining the percentage preservation of parenchymal volume.

Another key point specifically relevant to evaluation of long-term renal function is the timing of the assessment. In this study, estimates ranged from 30 to 90 mo. It is possible that other variables (why not diabetes, irrespective of PN?) become increasingly important in impacting such long-term functional assessment. Unfortunately, the retrospective analyses in this setting suffer from this inevitable issue and there is a strong need for prospective collection of granular data in this field.

Lastly, it is possible that the solitary kidney setting does not represent the "ideal" scenario because (1) hyperfiltration phenomena already exist in patients with a solitary kidney and (2) injury to the operated (solitary) kidney is observed without the effect of the contralateral kidney. We thus believe that the solitary kidney setting is a special case, and care is needed when extrapolating the conclusions drawn from solitary kidney patients to patients with bilateral kidneys.

In conclusion, with pros and cons, the study represents a fair starting point to stimulate further investigations in the "at-risk" population undergoing PN. The quality of the evidence still needs to be improved, but off-clamp and cold ischemia techniques favor patients with worse parenchymal "reserve" before surgery, maximizing renal functional outcomes. This is more important than ever since a nexus between renal function and cancer-specific mortality was reported [6]. Beyond accurate assessment of baseline renal function, patient selection on the basis of comorbidity burden, possibly assigned using a standardized dedicated classification, is crucial to identify those who will truly benefit from adoption of alternative techniques to conventional warm ischemia in PN.

Conflicts of interest: The authors have nothing to disclose.

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