



# Improving continence after prostatectomy: integrating magnetic resonance imaging with the Retzius-sparing approach

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Persistent and bothersome urinary leakage following radical prostatectomy can be a devastating quality of life issue for a subset of men undergoing surgical treatment for localized prostate cancer. Although management strategies for post-prostatectomy incontinence (PPI) have been quite effective, including both conservative and surgical (male urethral sling or artificial urinary sphincter) approaches, many investigators have explored ways to mitigate this issue altogether. Several risk factors predicting the development of PPI have been described and include preoperative comorbidities, patient anatomical features, and intraoperative techniques (1). The ability to more accurately predict PPI in patients contemplating local treatment options for prostate cancer can enable a more effective means of counseling them on their individualized risk of developing post-surgical incontinence.

Within the past decade, the technique of Retzius-sparing radical prostatectomy was introduced as a means to maximize functional outcomes by attempting to preserve anterior structures (including the neurovascular bundles, Aphrodite's veil, endopelvic fascia, the Santorini plexus, and pubourethral ligaments, among others) via a purely intrafascial, posterior dissection approach (2). Compared to conventional robotic-assisted radical prostatectomy (RARP), the Retzius-sparing approach (RS-RARP) has been shown to correlate with hastened recovery of continence across multiple studies (3,4). However, the appropriate candidacy for this approach is still evolving, given the potentially higher risk of positive surgical margins (4), which may be related to the proposed learning curve of mastering this technique.

Aside from alternative surgical approaches, prostate cancer has also witnessed a diagnostic and therapeutic shift over

the last decade with the advent of multiparametric magnetic resonance imaging (MRI). In addition to guiding targeted biopsies of the prostate, MRI can hold tremendous utility in surgical planning by predicting adverse pathological features such as extracapsular extension or seminal vesical invasion (5) and by delineating anatomic features such as a sizable intravesical prostatic lobe. In addition to predicting pathology, MRI may hold additional value in predicting functional outcomes in patients. Many groups have investigated various MRI anatomic parameters and reported that a shorter membranous urethral length (MUL) and longer pubic symphysis-prostate apex length (PAL) on preoperative MRI may be associated with higher rates of PPI (6-9). Minimal residual membranous urethral length (mRUL) was also recently introduced as a parameter representing the minimal intact portion of the membranous urethra during RARP by capturing the distance between the lower margins of the puboperinealis and bulbospongiosus muscles (10). As with MUL, longer mRUL was found to be significantly associated with improved rates of post-surgical continence.

The novelty of the current work by Li *et al.* lies in its assessment of preoperative MRI features in predicting early continence recovery specifically in the setting of RS-RARP (11). Although limited by a retrospective, single-institution, single-surgeon approach, the authors evaluated several preoperative MRI parameters including mRUL, periurethral sphincter complex thickness, urethral wall thickness, levator ani muscle thickness, and obturator internus muscle thickness. They were able to identify a subset of RS-RARP patients that experienced early PPI and found that, consistent with conventional RARP, longer mRUL was associated with

early return of continence after RS-RARP, while none of the other MRI measurements were significantly correlated with continence outcomes. This study mirrors another recently published by the same group, in which the authors reported on significant clinical predictors for early return of continence after RS-RARP, which included prostate volume and preoperative lower urinary tract symptoms (12).

Whether the learning curve for RS-RARP or other unmeasured confounders played an influential role in the continence outcomes and whether long-term continence outcomes are significantly affected by these parameters remain unknown. Furthermore, appropriate patient selection for undergoing the RS-RARP technique may also warrant further investigation. Nonetheless, the work by Li *et al.* is an important contribution to an evolving body of literature and will undoubtedly hold value in counseling patients regarding their functional outcomes after RARP.

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### Footnote

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