Radical prostatectomy is arguably the most frequently offered treatment patients with low or intermediate risk cancer of the prostate. Its main objective is complete cancer removal without sequelae, but results are sometimes darkened by the functional impairment posed by the emergence of urinary incontinence, erectile dysfunction or other voiding and vowel problems that negatively impact patient satisfaction. With the attempt to overcome these drawbacks, radical prostatectomy has undergone a remarkable transformation in the last decades, determined by the tendency to favor minimally invasive approaches and high-volume therapeutic units because surgeon experience with the technique offers the best results.

Refinements achieved during laparoscopic prostatectomy (1) have been improved by robotics but the debate whether robot-assisted radical prostatectomy (RARP) achieves better continence results that open radical prostatectomy is not totally closed (2) and continence recovery continues to be a significant problem for our patients. Galfano and collaborators were pioneers in defining a posterior “Retzius-sparing” approach in robotic surgery (3). This revolutionary approach consisted on passing through the pouch of Douglas following a completely intrafascial plane and avoiding damage of all the Retzius structures involved in continence and potency preservation: neurovascular bundles, Aphrodite’s veil, endopelvic fascia, Santorini’s plexus and puboprostatic ligaments. There is a strong growing body of evidence to consider the Retzius-sparing approach to combine the best of retropubic and perineal approaches. The first feasibility study for “Retzius-sparing” RARP simply based on a short series of patients but Galfano et al. later established a prospective non-randomized study with consecutive patients intervened during 2 years. Results achieved in their first 100 patients were compared to those of the second hundred to evaluate the learning curve effect of the technique. Continence rate achieved within the first year of surgery was 96%. Also 40% and 71–81% of baseline potent patients aged <65 years were able to reach intercourse within first month and first year, respectively using this approach (4).

Many other surgical individual maneuvers have been promoted and tested to improve continence results in the era of robot-assisted radical prostatectomy (5). One of the best accepted is the preservation of membranous urethral length that is especially retained in the nerve-sparing technique that leads also to improved continence recovery in a meta-analysis (6). Another tip is the reconstruction of Denonvilliers’ using the Rocco technique to perform posterior musculofascial reconstruction that has been confirmed in a systematic review to favor early acquisition of continence (7). Also bladder neck suspension with an absorbable suture that fixes the vesico-urethral anastomosis
to the pubic periosteum, and bladder neck plication by a running stitch during RARP is more controversial. Even the type of suture used for vesico-urethral anastomosis could also play a role itself as non-barbed sutures may have a favourable effect on continence while barbed-sutures could induce more tissue damage (8). A careful dissection of the prostatic apex and delicate anatomical reconstruction has been recently reported to increase excellent results for early continence recovery associated to RARP, from 70% at week 1 to 98% at month 6 (9). Of course these results cannot be generalized to low-volume centers.

Now, there is a strong growing body of evidence to consider the superiority of Retzius-sparing RARP to promote early continence recovery without impact on surgical margins or biochemical failure. Surgical trauma is minimized and the combination of pubovesical complex, detrusor apron, levator ani, arcus tendinous and anterior fixation of the bladder prevents urethral hypermobility and facilitates early continence recovery. Lim et al. compared a series of patients prospectively undergoing Retzius-sparing RARP with a database of patients treated with conventional RARP (10). Shorter operative time and faster recovery of continence were demonstrated, but the limitations of the study design were undeniable. Very recently Dalela et al. have conducted the first single-center randomized controlled clinical trial to evaluate the impact of the Retzius-sparing posterior RARP on early urinary continence recovery in comparison to anterior conventional RARP, with 60 patients on each arm with low or intermediate-risk prostate cancer (11). Primary outcomes was continence recovery (none or 1 security pad/day) 1 week after catheter removal, and secondary outcomes were time to continence recovery and patient reported outcomes (PROs) such as IPSS and QoL score. One week continence was 71% for the posterior approach and 48% for the anterior one (P=0.01). Posterior approach led to an earlier recovery (median 2 vs. 8 days) and lower bother score as well (11). Desirably these solid results should be confirmed by larger multicenter studies and also in high-risk localised disease (12). Also more solid results regarding not only continence but also oncologic efficacy (positive margin rate, probability of biochemical failure) and security (complications) in the long-term will be welcome.

In summary, the body of evidence to consider the Retzius-sparing approach could favor early urinary continence recovery after RARP and better PRO measurements is definitely increasing after the publication of Dalela et al. (11) and that should lead to development of further studies comparing results of this variant of RARP and open radical prostatectomy. Maybe then robotic assistance could determine a more noticeable clinical advantage over its open counterpart. However, oncologic data must not be forgotten and thereof we can anticipate a long way before the clinical dilemma of which is the best RARP approach is solved.

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Footnote
Conflicts of Interest: The authors have no conflicts of interest to declare.

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