Editorial

# Anastomotic leaks and catheter time after salvage robot-assisted radical prostatectomy

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*Comment on:* Ogaya-Pinies G, Kadakia Y, Palayapalayam-Ganapathi H, *et al.* Use of Scaffolding Tissue Biografts To Bolster Vesicourethral Anastomosis During Salvage Robot-assisted Prostatectomy Reduces Leak Rates and Catheter Times. Eur Urol 2016.

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Since Mador *et al.* (1) published the first series of salvage radical prostatectomy (SRP), this procedure has been increasingly used in patients with radio-recurrent prostate cancer (PCa) (2). Nonetheless, radiotherapy-induced fibrosis and changes in periprostatic tissues associated with the delivery of a primary treatment make SRP a challenging procedure even in the hands of experienced surgeons. As such, SRP is frequently associated with detrimental perioperative outcomes as compared to primary open or minimally invasive prostatectomies (3). Recent studies suggest that the advantages associated with the robotic approach might play a major role in the context of SRP, where optical magnification and reduced bleeding would facilitate tissue manipulation and the ability to perform a watertight vesicourethral anastomosis (VUA) (4). Nevertheless, the rate of perioperative complications for this surgical procedure remains high even in men treated with minimally invasive surgery and more than one out of four of patients experience anastomotic leaks (5).

In a recent study, Ogaya-Pinies *et al.* (6) reported an innovative procedure for salvage robot-assisted radical prostatectomy (sRARP) using a scaffold tissue biografts to reinforce the VUA. Their hypothesis was that the use of a scaffold might facilitate the consolidation of the anastomosis by accelerating the epithelialization and tissue repair, finally resulting into a lower rate of urethral leaks and a shorter catheterization time. The investigators evaluated 15 patients who underwent sRARP with the scaffolding graft tissue incorporated in the VUA. Of these, 12 (80%) were treated with radiation therapy before surgery, 2 (13.33%) were treated with cryotherapy and 1 (6.66%) patient with high-intensity focused ultrasound (HIFU). To evaluate the efficacy of the use of the scaffolding tissue graft, this cohort of patients was matched with another cohort of 45 patients underwent sRARP without the use of such technique (i.e., control group). These two cohorts were further compared with 45 patients underwent primary RARP without the use of the scaffold. Of note, the authors reported that the adoption of a scaffolding tissue graft reduced the catheterization time of approximately 6 days. Moreover, only 1 (6.6%) patient included in the treatment group had a significant anastomotic leak as compared to 16 (35.5%) patients receiving a salvage procedure included in the control arm of the study. Therefore, the biological proprieties of the scaffolding tissue graft might have accelerated the healing process, eventually improving the postsurgical outcomes of patients undergoing sRARP. In addition, this procedure was safe and the authors did not report increased operative time or higher rates of significant complications. Finally, the scaffold did not induce bladder neck contracture or urethral stenosis at long-term follow-up.

Although the authors should be commended for performing such an innovative and well-designed study, some points warrant further attention. First, the generalizability of the findings by Ogaya-Pinies and

colleagues is limited by the inclusion of a relatively small group of patients who received heterogeneous primary therapies. Specifically, although the majority of patients were treated with different forms of radiotherapy, 20% of the patients included received brachytherapy and 20% were treated with focal therapy. As highlighted by the higher rate of anastomosis disruption observed among patients who received primary proton beam therapy included in the control group of this study, different types of primary treatments might be associated with a different level of surgical complexity during the subsequent robotic procedure and, therefore, future trials assessing the efficacy of a scaffold in reducing leak rates and catheterization time should be focused on a more homogeneous cohort.

Second, the rate of complications reported by Ogaya-Pinies *et al.* is relatively high as compared to what observed in other series that evaluated patients with radio-recurrent PCa undergoing minimally invasive surgery. For example, in the Vanderbilt University cohort that included 34 men who underwent sRARP without the use of the scaffold the rate of anastomotic leak was lower than 15% (7). Similarly, Yuh *et al.* (8) and Zugor *et al.* (9) reported that the proportion of men who experienced anastomotic leaks after sRARP without the use of a scaffolding tissue graft for radio-recurrent PCa did not exceed 20%. This is substantially lower as compared to what reported by Ogaya-Pinies and colleagues in their control group, where more than one out of three patients experienced anastomotic leak after surgery. Similarly, the catheterization time in the series by Ogaya-Pinies *et al.* was longer as compared to what observed by other authors (7-9). The worse perioperative outcomes reported in the control group of this cohort might be related to preoperative patient characteristics as well as to the learning curve phenomenon typical of the introduction of a novel surgical approach. In particular, it might be hypothesized that individuals included in the control group represented patients treated in the early adoption phase of RARP in the radio-recurrent setting and, therefore, they might be more likely to experience postoperative complications. Under this light, Ogaya-Pinies *et al.* should adjust their analyses for surgical experience and evaluate if the potential benefits of the use of a scaffolding graft tissue would change according to the experience of the operating surgeon.

Finally, the evaluation of the cost is mandatory when two different surgical techniques are compared. Despite the authors provide that the cost of the scaffold was restrained, the cost-effectiveness of the distribution and utilization of this advance material should be evaluated and the potential benefits in terms of improved postoperative outcomes should be balanced with the increased expenditures associated with the adoption of this technique.

In conclusion, despite advances in the technique, sRARP still represents a challenging procedure with a relatively high morbidity. The use of a urinary bladder extracellular matrix scaffold could be of paramount importance to decrease post-operative complications such as anastomotic leaks and prolonged catheterization time that are currently associated with salvage procedures in radio-recurrent PCa. Nonetheless, further larger studies are needed to better address the role of a scaffolding tissue graft in improving sRARP outcomes.

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## Footnote

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

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