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A Review Comparing Open Radical Cystectomy and Robotic Laparoscopic Radical Cystectomy: Oncological Outcomes

Shukurov Muhammad azizi
Master's degree 1st year Oncology
Tashkent Medical Academy

Abstract:

We thank this large and prominent group of robotic experts for their comments [2] on the scientific summary of the updated version of the European Association of Urology guidelines on muscle-invasive and metastatic bladder cancer [3], published in this issue of European Urology. First, as this document presents a summary of a very large underlying document, not alldetails canbe addressed.

Keywords: Urology guidelines, Association

We thank this large and prominent group of robotic experts for their comments [2] on the scientific summary of the updated version of the European Association of Urology guidelines on muscle-invasive and metastatic bladder cancer [3], published in this issue of European Urology. First, as this document presents a summary of a very large underlying document, not alldetails canbe addressed.
Current best practice is open RC."), although with a level of evidence of only 3, should have been adapted since it is not aligned with Table 12 [3], so in that respect Montorsi et al are correct. In addition, the second part of the sentence "current best practice is open radical cystectomy" (ORC) might read "current best practice is radical cystectomy", although then, rightfully, the advocates of multimodal treatment might comment on this [3].

In conclusion,the options for treatment of nonmetastatic muscle-invasive bladder cancer include ORC and RARC, as well as multimodal treatment, and therefore we would like to rephrase the last sentence of Montorsi et al [2] as follows: "the specialist's understanding of the disease process, technical skills, and overall experience should be the main deciding factors when discussing treatment options for nonmetastatic invasive bladder cancer with patients". This being said, we would like to make three comments about the equivalence of ORC and RARC. Addressing oncological outcomes, one would not expect significant differences in oncological outcomes between the two procedures, since the bladder and lymph nodes are taken out in both and the follow-up for RARC series is still shorter than for ORC series. One of the older studies with longer-term follow up, a large phase 3 trial comparing radiotherapy or cystectomy with and without neoadjuvant chemotherapy, showed

decreasing metastasis-free survival, locoregional disease–free survival, and disease-free survival far beyond 5 yr of follow-up in all four arms [4]. In their review, Satkunasivam et al [5] based their conclusion about disease recurrence equivalence on 458 participants from only three out of the five studies included. Themedian follow-upin these studies was 4.9 yr in a trial not powered for this endpoint [1], 12 mo [7], and 2-yr progression-free survival [8].

Rightfully, the authors considered "the qualityof evidence for this outcome to bemoderate". This reminds us of the hype around "total" androgen blockade for metastatic prostate cancer in the 1980s, which in the end failed to show a survival advantage. A second point of attention is the fact that not all countries and centres have access to a robot, and those that do have a robot will first have to pass their learning curve. In that sense RARC cannot universally be considered as the standard of care. A third point of concern is the costs for RARC. Although these will differ by country and situation, the price of the robot is certainly not the only factor that plays a role. Unfortunately, quality studies addressing cost-effectiveness are still lacking, but a recent paper that also investigated this aspect should shed some light on this issue [9].

In conclusion, the current literature does not show significant differences in outcomes after ORC and RARC, leaving, as Montorsi et al elegantly state, informed patients with the choice of their preferred approach, as long as thischoice is made between surgeons with similar experience in the two techniques. As a consequence, radical cystectomy, whether ORC or RARC, should be performed only in highvolume centres where, as noted, a robotic platform is commonly available and used on a daily basis. Conflicts of interest: J. Alfred Witjes is a company consultant for Spectrum, Tocagen, BioClin, Sanofi Aventis, Biocancell, and Nucleix; has received honoraria or consultation fees from Taris Biomedical, BMS, MSD Global Medical Affairs, and Roche Nederland BV; and has participated in trials run by Taris, Cepheid, Arquer, and MEL Amsterdam. Maria J. Ribal has received company speaker honoraria from Janssen Laboratories, Olympus Iberia SAU, Astellas Pharma SA, and Ipsen Pharma; and has an interest in a patent held by Fina Biotech SLU for a method for noninvasive diagnosis of bladder cancer (European Patent Office number 13382030.8-1403).

Their series is retrospective, without a randomized or nonrandomized contemporary open surgery comparison group, consists of a cohort in which approximately half of their patients had extravesical disease, and has reported follow-up of only 1.6 yr.

On the basis of their recurrence information, the authors state that their outcomes are in "conflict" with our findings and suggest that there is no reason to think that patients treated with RARC have a greater risk of local-regional recurrences. As clearly stated in our manuscript, our randomized study was not powered to definitively evaluate cancerspecific outcomes. Cancer outcomes were predefined secondary endpoints of our trial. However, the patterns of first recurrence we observed are of sufficient interest to warrant further study and discussion.

Comparing randomized trial data with median follow-up of 4.9 yr to a retrospective, nonrandomized group of patients with 1.6- yr follow-up does not provide a robust assessment that can lead to any definitive conclusions about cancer outcomes. The 26% recurrence rate in their cohort (despite nearly half with extravesical disease) highlights the immature nature of the follow-up. Multiple previous radical cystectomy series would suggest that a group of patients in which half of whom have pT3 disease would have a significantly greater risk of recurrence [1,6].

Cancer outcome data from our randomized trial and from other nonrandomized institutional studies have suggested that the frequencies of local and abdominal recurrences following RARC need to be scrutinized [10]. The fact that some studies have noted a higher rate of pelvic and abdominal recurrences while others have not reported similar findings [11] suggests that differences in technique may play a critical role. It is possible that breaks in technique have different consequences depending on the technology/technique used. This we feel is the important question that requires ongoing scrutiny.

As a surgical community we must open the discussions necessary to better understand what the optimal steps and approaches are to minimize or eliminate unanticipated pelvic or abdominal relapses. We strongly agree with Dijkstra and Wijburg that well-designed future randomized studies that

include sufficient patients with higher-stage tumors be completed to more clearly assess the patterns of recurrence after RARC. Until then, surgeons should remain aware that such data exist while we await the data required to clarify long-term cancer outcomes following RARC.

We read with great interest the paper by Bochner et al. [1] on oncologic outcomes from a randomized trial comparing open radical cystectomy (ORC) and robot-assisted laparoscopic radical cystectomy (RARC). Patients with bladder cancer (BC) stage Ta-T3/N0-3/M0 were randomized to undergo ORC or RARC and the primary endpoint was a comparison of perioperative complications between the surgical modalities [1]. However, the secondary endpoint, published in the most recent paper, was a comparison of cancer outcomes, including recurrence-free survival, overall survival, and patterns of first recurrence. The authors demonstrated similar recurrence-free and BC-specific survival between the robotic and open arms over median follow-up approaching 5 yr. The results were similar for risk estimates of all-cause mortality after surgery in both groups and the risk of recurrence was not significantly different. Interestingly, in addition to the above-mentioned results, the authors describe a different pattern of first recurrence between ORC and RARC.

Although they reported that the study was not designed to evaluate patterns of first recurrence and that this evaluation was unplanned, they suggest that patients undergoing RARC are potentially prone to more local/regional (abdominal/pelvic) recurrences. These differences, however, did not reach statistical significance. When the pelvic and abdominal recurrences were combined into a single group representing local/ regional recurrence, the ORC group showed significantly less local/regional recurrence compared to the RARC group. The rationale behind this suggested difference in patterns of first recurrence is still unclear.

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