

MINERVA OPINION EDITORIAL

A survey-based study on the spread of *en-bloc* resection of bladder tumors among IEA and ESUT members

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Transurethral resection of bladder tumor (TURBT) is the mainstay of the surgical management of patients with non-muscle invasive bladder cancer (NMIBC);^{1, 2} however, it completely neglects the radical concept of oncological surgeries as it is an “incise and scatter” procedure that may increase the risk of tumor cell dissemination and implantation. Furthermore, it may be associated with higher rates of missed detrusor muscle in the resected specimen, which may increase the risk of tumor understaging.^{1, 3}

To overcome these limitations, *en-bloc* resection of bladder tumors (ERBT) was introduced in the late 1990s allowing the surgeons to dissect even large bladder tumors in one piece improving the quality of pathological specimens without compromising the radical concepts.⁴ Currently, the European Association of Urology (EAU) guidelines consider ERBT as a non-inferior alternative to conventional TURBT in the surgical management of NMIBC.¹ Yet, ERBT represents an area of uncertainty due to

the lack of standardization in practice patterns and indications to this procedure, where after 23 years of the introduction of ERBT, there are only ten randomized controlled trials comparing it to the conventional TURBT technique.⁵ As a consequence, a recent study demonstrated that approximately 36.6% of the European urologists rarely or never use ERBT in their daily practice.⁶

In March 2020, a survey (Supplementary Digital Material 1) designed by two senior and experienced endourologists was sent to 400 Italian Endourological Association (IEA) members and 200 EAU Section of Uro-Technology (ESUT) members via email. Two months later, 118 urologists (19.6%) responded. Approximately, half of the respondents worked at an academic institute (50.9%) and aged between 30 and 49 years old (56.8%). Moreover, most of the respondents had >10 years of clinical experience in urology (69.5%) and lower urinary tract endoscopy (66%).

Interestingly, the current survey reported

high adoption rates of ERBT (81%), unlike other studies, which reported that ERBT is less commonly used by European urologists (63.4%)⁶ and to a much lesser extent among German-speaking urologists (2.6%) in their daily practice.⁷ This dramatic difference may be explained by the increasing interest and publications about ERBT, where the abovementioned studies were performed two years earlier than the current study. Since there are no robust data for making strong recommendations on the indications to ERBT,⁵ the decision to perform ERBT is still dependent on the surgeon's experience, tumor's size and location.¹ Currently, the existing evidence in the literature suggests that ERBT is not appropriate for tumors >3cm, multifocal, flat, and domal tumors; however, a recent international collaborative consensus statement on ERBT did not impose any restrictions on tumor's size, location, and number by agreeing that there are theoretically no limitations to ERBT except the suspicion of muscle invasion.⁵ This was reflected on the surgeon's perception of the ideal tumors for ERBT in the current survey. Interestingly, 60% of the respondents reported that ERBT can be used also for flat tumors. As regards the tumor size, 41%

of the studied sample considered three centimeters as the maximum lesion size suitable for ERBT, while 19% considered it feasible also for lesions >3cm. The major critical issue which currently limits the maximum tumor size suitable for ERBT is the difficulty in retrieving large bladder tumors in one piece. In our survey, this represents the main reason why urologists do not perform ERBT even if it is feasible (36.4%) (Figure 1C). Most commonly, tumors are extracted as a whole up to 3cm by flushing (73.4%) or with the help of a grasper (43%) (Figure 1B). Currently, most research groups excluded big tumors from ERBT analysis, and only very limited data on large tumors retrieval are available.

ERBT is a flexible technique that allows the use of different energy sources. The current survey has supported this variety of energy sources (Figure 1A); however, bipolar energy remains the most used energy source (87%). Of note, bipolar energy appears to be the most superior modality due to equipment availability, ease, and precision of resection, as well as the possibility of instant conversion to piecemeal resection.⁵

Regarding the perceived advantages of ERBT, most of the respondents cited a higher rate of

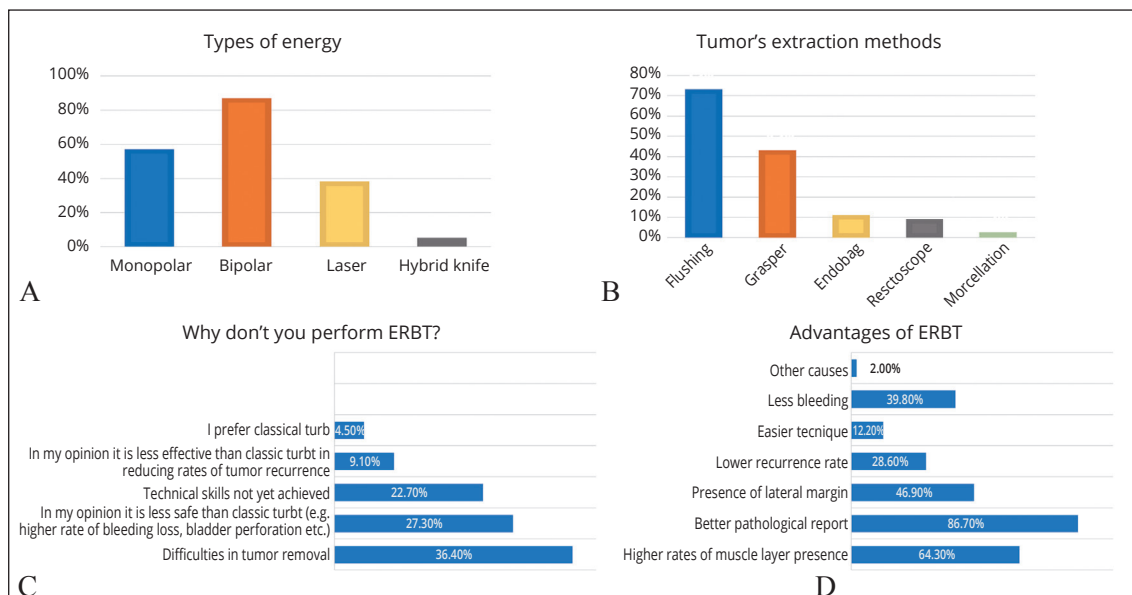


Figure 1.—A) A chart of the different types of energy used for ERBT; B) different techniques of tumor extraction; C) reasons for not performing ERBT; and D) advantages of ERBT according to surgeons.

muscle layer presence and the possibility to have a more exhaustive pathological report as a benefit, which permits a correct assignment of the T stage (Figure 1D). Eissa *et al.*³ demonstrated that lateral margin assessment might play a role in providing better pathological staging of bladder tumors. Even if it was not statistically significant, there was a trend toward an increased recurrence rate in patients with dysplasia or malignancy in their lateral margins. In this setting, we wanted to investigate how much this practice was in use between ESUT and IEA members. Overall, 47% of the respondents considered the presence of lateral margins as one of the main advantages of ERBT; however, in 39% of the cases, the pathologist does not provide data on lateral mucosa status. The assessment of lateral margins is not well-established; in fact, only 10% of respondents confirmed to obtain this information in $\geq 75\%$ of the histopathological examinations.

On the other hand, 19% of the respondents reported that they do not perform ERBT in their daily practice. The main reasons for this finding are the difficulties in specimen extraction (36.4%), lack of technical skills (22.7%), and personal preference (4.5%). Furthermore, 27.3% of the urologists considered ERBT a less safe technique than conventional TURBT, and 9.10% of the urologists considered it a less effective technique to reduce tumor recurrence rates (Figure 1C). This result is in dissonance with literature where in several studies ERBT has been clearly proven to be a noninferior alternative and safer compared to TURBT in terms of complications such as bladder perforation and major bleeding loss.^{1, 8} Interestingly, in the current survey, those who considered ERBT less safe than TURBT are the same ones who declared not to have achieved the necessary technical skills to perform the procedure. Noteworthy, among those who perform ERBT, <50% (46/98) choose *en-bloc* rather than conventional TURBT when feasible. Interestingly, the number of surgeons not performing ERBT increased as the experience in TURBT decrease. These findings reflect the importance of proper surgical training of such a technique. Modular training based on approved methodologies, which has already

shown encouraging results in other areas, seems to be the way to go.^{9, 10}

In conclusion, ERBT is well proven to be a safe and feasible alternative technique for treating NMIBC. A significant portion of IEA and ESUT urologists performs ERBT in their daily practice; however, its usage is most common among high TURBT volume surgeons. Beyond experience, our survey showed that <50% of IEA and ESUT members who perform ERBT choose ERBT over conventional TURBT when feasible. The main reasons for not being preferred are challenges in tumor removal, lack of technical skills, and concerns about technique's safety, which can be overcome with appropriate training programs.

References

1. Babjuk M, Burger M, Compérat EM, Gontero P, Mostafid AH, Palou J, *et al.* European Association of Urology Guidelines on Non-muscle-invasive Bladder Cancer (TaT1 and Carcinoma In Situ) - 2019 Update. *Eur Urol* 2019;76:639–57.
2. Moschini M, Zamboni S, Mattei A, Amparore D, Fiori C, De Dominicis C, *et al.*; European Association of Urology - European Society of Resident Urologists (EAU-ESRU). Bacillus Calmette-Guérin unresponsiveness in non-muscle-invasive bladder cancer patients: what the urologists should know. *Minerva Urol Nefrol* 2019;71:17–30.
3. Eissa A, Zoeir A, Ciarlariello S, Sarchi L, Sighinolfi MC, Ghaith A, *et al.* En-bloc resection of bladder tumors for pathological staging: the value of lateral margins analysis. *Minerva Urol Nefrol* 2020;72:763–9.
4. Kawada T, Ebihara K, Suzuki T, Imai K, Yamanaka H. A new technique for transurethral resection of bladder tumors: rotational tumor resection using a new arched electrode. *J Urol* 1997;157:2225–6.
5. Teoh JY, MacLennan S, Chan VW, Miki J, Lee HY, Chiong E, *et al.* An International Collaborative Consensus Statement on En Bloc Resection of Bladder Tumour Incorporating Two Systematic Reviews, a Two-round Delphi Survey, and a Consensus Meeting. *Eur Urol* 2020;78:546–69.
6. Waldbillig F, Hein S, Grüne B, Suarez-Ibarrola R, Liatsikos E, Salomon G, *et al.* Current European Trends in Endoscopic Imaging and Transurethral Resection of Bladder Tumors. *J Endourol* 2020;34:312–21.
7. Suarez-Ibarrola R, Hein S, Farin E, Waldbillig F, Kriegmair MC, Ritter M, *et al.* Current Standards in the Endoscopic Management of Bladder Cancer: A Survey Evaluation among Urologists in German-Speaking Countries. *Urol Int* 2020;104:410–6.
8. Mori K, D'Andrea D, Enikeev DV, Egawa S, Shariat SF. En bloc resection for nonmuscle invasive bladder cancer: review of the recent literature. *Curr Opin Urol* 2020;30:41–7.
9. El Sherbiny A, Eissa A, Ghaith A, Morini E, Marzotta L, Sighinolfi MC, *et al.* Training in urological robotic surgery. Future perspectives. *Arch Esp Urol* 2018;71:97–107.
10. Puliatti S, Mazzone E, Dell'Oglio P. Training in robot-assisted surgery. *Curr Opin Urol* 2020;30:65–72.

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