

## Re: Comparison of Radical Prostatectomy Techniques: Open, Laparoscopic and Robotic Assisted

Rodrigo Frota, Burak Turna, Rodrigo Barros, Inderbir S. Gill

*Section of Laparoscopic and Robotic Surgery, Glickman Urological Institute, Cleveland Clinic Foundation, Cleveland, Ohio, USA*

Int Braz J Urol. 2008; 34: 259-69

To the Editor,

This timely paper reviews the current status and respective roles of laparoscopic, robotically-assisted and open radical prostatectomy in the management of localized prostate cancer. While open radical prostatectomy remains the gold standard of treatment, a minimally-invasive approach has been available since 1997 in the form of laparoscopic radical prostatectomy. Minimally-invasive approaches to radical prostatectomy hope to duplicate the benefits of this approach seen with other procedures, including decreased patient blood loss and post-operative recovery time. The increased visualization, through digitally enhanced images that both magnify and illuminate the operative field, contributes greatly to the performance of this technically challenging procedure. However, laparoscopic surgery requires the acquisition of new anatomical perspectives, hand-eye coordination and the capacity to operate with limited tactile feedback and lack of 3-dimensional vision, all of which contributes to its undeniably steep learning curve. More recently, robotic systems have been used as an additional tool for the laparoscopic approach, with the hypothesis that they might improve the precision and accuracy of the anatomical dissection for the reasons outlined in the introduction of the current paper.

The authors concisely summarize the available contemporary literature, paying most attention to larger series from centers with established reputations in this field and with longer term follow-up. Criteria for comparison include operative, oncological and

functional outcomes, as well as a pertinent discussion of financial considerations. Advantages of the minimally-invasive approaches are seen in generally lower operative blood loss, marginally decreased complication rates and shorter duration of catheterization. Analgesia requirements appear to be comparable and length of hospital stay often depends on more than simply the operative technique involved. Data concerning functional outcomes appears to be similar across the different techniques, but the authors rightly point out the difficulties comparing like with like in these studies, in terms of definitions of continence and potency and the use of validated questionnaires. The long term oncological efficacy of RRP is well studied but as yet limited long-term follow up is available for the minimally-invasive approaches. PSA progression-free survival appears comparable in the short to medium term, and what comparative studies exist show no significant differences in positive margin rates.

Our own unit recently published a direct comparison of robotic-assisted versus pure laparoscopic radical prostatectomy (1). No significant differences were observed between the pure laparoscopic and the robotic-assisted procedure with regard to operative time, operative blood loss, length of hospital stay or bladder catheterization. A higher transfusion rate was seen in the robotic-assisted group (9.8%) compared to the pure laparoscopic group, though this finding has not been borne out in other similar studies (2,3). No significant differences were seen in the rate of major

complications between the 2 groups. The rate of margin positivity did not significantly differ between pure laparoscopy (15.8%) and the robotic-assisted procedure (19.5%). Our conclusion was that pure laparoscopic extra-peritoneal radical prostatectomy is equivalent to the robotic-assisted procedure in a centre experienced in laparoscopic techniques.

The current review is a welcome addition to the comparative literature regarding the status of minimally-invasive techniques against the well-established gold standard of open surgery. Tooher et al., in their comprehensive review of this topic, concluded that any conclusions that can be drawn from these comparisons are limited by the nature of the available data (4). Well performed, randomized, controlled trials are urgently required to provide stronger evidence when comparing these techniques. Sufficient follow-up and the use of internationally validated measures of functional outcomes are essential.

## REFERENCES

1. Rozet F, Jaffe J, Braud G, Harmon J, Cathelineau X, Barret E, et al.: A direct comparison of robotic assisted versus pure laparoscopic radical prostatectomy: a single institution experience. *J Urol.* 2007; 178: 478-82.
2. Menon M, Shrivastava A, Tewari A: Laparoscopic radical prostatectomy: conventional and robotic. *Urology.* 2005; 66 (5 Suppl): 101-4.
3. Joseph JV, Vicente I, Madeb R, Erturk E, Patel HR: Robot-assisted vs pure laparoscopic radical prostatectomy: are there any differences? *BJU Int.* 2005; 96: 39-42.
4. Tooher R, Swindle P, Woo H, Miller J, Maddern G: Laparoscopic radical prostatectomy for localized prostate cancer: a systematic review of comparative studies. *J Urol.* 2006; 175: 2011-7.

**Dr. François Rozet &  
Dr. Gordon P. Smith**

*Department of Urology, Institut Montsouris  
Université Paris Descartes  
42, Bd Jourdan, 75014  
Paris, France  
E-mail: francois.rozet@imm.fr*

## Systemic Treatment for Invasive Bladder Cancer: Neoadjuvant Chemotherapy and Laparoscopic Radical Cystectomy

To the Editor,

The standard treatment for invasive transitional cell carcinoma (TCC) is radical cystectomy (RC) with lymphadenectomy; however, defining adequate therapy in every patient with invasive TCC remains difficult, because multiple biologic behavior patterns can be found in this disease (1).

Laparoscopy has come forward in oncologic urologic surgery to reproduce traditional operations

in the endoscopic environment in order to minimize morbidity without compromising cancer outcomes. Laparoscopic radical cystectomy (LRC) was conceived as a procedure that could actually diminishes the associated morbidity of RC, while maintaining the oncological objectives.

Quality indicators in RC are well established nowadays: Mortality should not be higher than 2%

to 4%. Positive surgical margin rates should be lower than 10% overall and 15% in pT3 or pT4 and the median number of pelvic nodes retrieved in the lymphadenectomy should be 10-14 (2). Simultaneously, orthotopic neobladder has become a surgical standard that improved the quality of life of these patients (3).

The surgical technique for radical cystectomy has specific technical objectives that should be met in every case (2):

1. Complete bladder cancer resection even in locally advanced tumors.
2. Minimal blood loss with early vascular control of superior and inferior vesical arteries.
3. Complete pelvic lymph node dissection.
4. Avoidance of tumor cell spillage.

Nowadays, the best outcomes in bladder cancer therapeutics are probably obtained when there is radical cystectomy in a systemic treatment setting. Neoadjuvant treatment has shown interesting advantages in patients with bladder cancer because it offers 5% of survival and 14% decreased risk of associated disease mortality (1). One might argue that two third of the patients would be treated without any response and survival advantage may be outweighed by potential treatment morbidity, with an important number of patients receiving chemotherapy to reach the 5% benefit, however, selection of the population incorporated in the protocols should address this issue.

Adequate surgical endoscopic skill developed in the last two decades and advances accomplished in the management of pulmonary, cardiovascular and hemodynamic effects of pneumoperitoneum allows offering laparoscopy as a safe alternative for these patients and recent data (4). Furthermore, as LRC has been reported with perioperative and functional outcomes comparable with open surgery and adequate mid-term cancer control (5), combining neoadjuvant therapy and LRC, would add the benefits of each one, and perhaps offer a more effective treatment for patients with invasive bladder cancer: The objective would be oncological efficacy with less morbidity. Clinical protocols addressing results of this mentioned way of treatment would be responsible for final answers in this matter and this constitutes our proposal for laparoscopy teams and medical oncologist, to unite for a common objective.

At the beginning of our experience with LRC the main consideration for surgery in bladder carcinoma was the precarious health of this patient's population. Things have not changed much; Haber and Gill (6) have reported important percentages of smokers (65%), hypertension (59%) and cardiac disease (17%) in there series of long term follow-up for LRC. Today, we know that physiological changes incurred as a result of pneumoperitoneum have minimal adverse effects in the majority of patients undergoing laparoscopic surgery; therefore, in the setting of systemic treatment, LRC might represents the low morbidity surgical option for the patient who had neoadjuvant therapy. Minimizing operative trauma becomes even more important for these patients. To open the path, there is need for clinical protocols incorporating these therapeutical options in order to address initially the morbidity and mortality while keeping in mind the oncological safety.

### Take Home Message

The combination of two effective treatments -medical and surgical- would probably offer a great advantage to patients with invasive bladder cancer. Laparoscopic cystectomy might represent a low morbidity surgical option to patients who have previously received chemotherapy for invasive bladder carcinoma.

### Acknowledgement

The Institut Mutualiste Montsouris has started a protocol on neoadjuvant chemotherapy and laparoscopic cystectomy, funded in part by a Clinical Research Grant from Oficina de Investigacion, Confederacion Americana de Urologia, CAU.

### REFERENCES

1. Herr HW, Dotan Z, Donat SM, Bajorin DF: Defining optimal therapy for muscle invasive bladder cancer. *J Urol.* 2007; 177: 437-43.

2. Herr HW, Smith JA, Montie JE: Standardization of radical cystectomy: time to count and be counted. *BJU Int.* 2004; 94: 481-2.
3. Hautmann RE, Volkmer BG, Schumacher MC, Gschwend JE, Studer UE: Long-term results of standard procedures in urology: the ileal neobladder. *World J Urol.* 2006; 24: 305-14.
4. O'Malley C, Cunningham AJ: Physiologic changes during laparoscopy. *Anesthesiol Clin North America.* 2001; 19: 1-19.
5. Haber GP, Crouzet S, Gill IS: Laparoscopic and robotic assisted radical cystectomy for bladder cancer: a critical analysis. *Eur Urol.* 2008; 54: 54-64.
6. Haber GP, Gill IS: Laparoscopic radical cystectomy for cancer: oncological outcomes at up to 5 years. *BJU Int.* 2007; 100: 137-42.

***Dr. Eric Barret, Dr. Rafael Sanchez-Salas  
& Dr. Guy Vallancien***

*Department of Urology, Institut Montsouris  
Université Paris Descartes  
42, Bd Jourdan, 75014  
Paris, France  
E-mail: eric.barret@imm.fr*