

Nerve Sparing, Robot-Assisted Radical Cystectomy with Intracorporeal Bladder Substitution in the Male

Anastasios D. Asimakopoulos,* Adriano Campagna, Georgios Gakis, Victor Enrique Corona Montes, Thierry Piechaud, Jean-Luc Hoepffner, Camille Mugnier and Richard Gaston

From the Department of Urology, Clinique Saint-Augustin, Bordeaux, France

Purpose: We provide a step-by-step description of our technique of nerve and seminal vesicle sparing robot-assisted radical cystectomy with AN orthotopic neobladder. We also present preliminary oncologic and functional outcomes.

Materials and Methods: Nerve and seminal vesicle sparing robot-assisted radical cystectomy with a modified Y-shaped orthotopic neobladder was performed by the same surgeon in 40 men with clinically localized bladder cancer from January 2011 to September 2014. Operative, perioperative and pathological data as well as continence and erectile function outcomes are presented.

Results: Median followup was 26.5 months (range 8 to 52). A soft tissue positive surgical margin was found in a patient with pT3a disease. A global rate of 30% early and 32.5% late complications was observed. However, the grade III or higher complication rate was low in both settings at 2.5% and 5%, respectively. There was 1 cancer related death 23 months after surgery. Of the 40 patients 30 (75%) gained daytime continence (0 pad) within 1 month postoperatively. The 12-month nocturnal continence rate was 72.5% (29 of 40 patients). Mean preoperative IIEF-6 (International Index of Erectile Function-6) score was 24.4. Erectile function returned to normal, defined as a IIEF-6 score greater than 17, in 31 of 40 patients (77.5%) within 3 months while 29 of 40 patients (72.5%) returned to the preoperative IIEF-6 score within 12 months.

Conclusions: In the hands of an experienced surgeon nerve and seminal vesicle sparing robot-assisted radical cystectomy with intracorporeal reconstruction of the neobladder seems feasible and safe. It provides short-term oncologic efficacy and promising functional outcomes. Yet comparative, long-term followup studies with standard open cystectomy are required.

Key Words: urinary bladder, urinary diversion, cystectomy, robotics, penile erection

OPEN radical cystectomy with extended pelvic lymph node dissection is the mainstay surgical approach in patients with muscle invasive bladder cancer or noninvasive tumors at high risk for progression.¹ RARC is increasingly used as a minimally invasive alternative to

ORC. Cumulative data to date have demonstrated that its safety and early oncologic results were at least not inferior to those of ORC in a select group of patients.²

Despite the ongoing evolution of nerve sparing techniques erectile dysfunction remains a health related

Abbreviations and Acronyms

DF = Denonvilliers' fascia	75
EBL = estimated blood loss	76
EF = erectile function	78
EFR = EF recovery rate	79
nsRARC = nerve sparing RARC	80
NVT = neurovascular tissue	81
ORC = open radical cystectomy	82
PDE5-I = phosphodiesterase 5-inhibitor	84
PSM = positive surgical margin	85
RARC = robot-assisted radical cystectomy	87
SV = seminal vesicle	89
VD = vas deferens	90

Accepted for publication April 26, 2016.

No direct or indirect commercial incentive associated with publishing this article.

The corresponding author certifies that, when applicable, a statement(s) has been included in the manuscript documenting institutional review board, ethics committee or ethical review board study approval; principles of Helsinki Declaration were followed in lieu of formal ethics committee approval; institutional animal care and use committee approval; all human subjects provided written informed consent with guarantees of confidentiality; IRB approved protocol number; animal approved project number.

* Correspondence: Department of Experimental Medicine and Surgery, UOC of Urology, University of Rome Tor Vergata, Viale Oxford 81, 00133 Rome, Italy (telephone: 0039 3406054387; FAX: 0039 0623188266; e-mail: taspao2003@yahoo.com).

quality of life domain that is commonly impaired after radical cystectomy.³ Furthermore, the technique of nsRARC is not yet standardized while its effects on sexual function have still scarcely been investigated.^{4,5}

We describe our technique of nerve and SV sparing RARC with orthotopic bladder substitution and present the perioperative, oncologic and functional outcomes.

MATERIALS AND METHODS

From January 2011 to September 2014 nsRARC was performed in 40 men with clinically localized bladder cancer. These patients represented a highly selected subgroup of 400 who underwent laparoscopic or robot-assisted radical cystectomy as performed by the same surgeon (RG). The study was performed in accordance with Good Clinical Practice rules and the ethical principles of the 1989 Declaration of Helsinki, 3rd (Hong Kong) amendment. Each patient provided written informed consent.

Main Outcome Measures

Major comorbidities, operative time, EBL, inpatient and outpatient complications, hospital stay, oncologic outcomes (pathological stage and soft tissue and prostate PSMs), continence and EF data were prospectively registered in a customized, ethics approved database and retrospectively evaluated in May 2015.

Preoperative and postoperative daytime and nighttime continence, defined as zero pads per day and night, respectively, was evaluated at the time of catheter removal, and 1, 3 and 12 months after surgery. A voiding chart was completed by every patient for 2 consecutive days 1, 3 and 12 months postoperatively, and annually thereafter.

EF was evaluated with questions 1 to 5 and 15 of the IIEF-6 erectile function domain score questionnaire 3, 6 and 12 months after surgery or until complete return to baseline. Potency was defined as a IIEF-6 score greater than 17 with or without PDE5-Is according to other studies.^{4,6} Complications were graded according to the modified Clavien system.⁷

A fellow not involved in direct patient care collected and reported data to the database during inpatient stay. Following discharge home data on regional patients were entered in the database during the planned in-hospital followup visits. Data on patients from other geographic areas were assessed via telephone interview for complications and continence status. IIEF-6 questionnaire results were collected via mail.

Supplementary Appendix 1 (<http://jurology.com/>) lists the indications for nsRARC. A rectal enema was applied preoperatively. Low molecular weight heparin for up to 4 weeks postoperatively and a single course of a second-generation cephalosporin given intravenously less than 1 hour before skin incision and continued for 24 hours after surgery were used for thrombus and antibacterial prophylaxis, respectively. The preoperative urinalysis was sterile.

Patients with locally advanced or node positive disease with no evidence of any microscopic residual disease were not offered adjuvant chemotherapy.

Surgical Technique

Port placement is identical to what we previously described for prostatectomy⁸ with the difference that all trocars are shifted cranially by 2 cm. The patient is placed in a steep Trendelenburg position and the robotic system is docked.

The technique starts with extended pelvic lymph node dissection to expose the bladder pedicles and prepare for subsequent resection of the bladder. The nodes medial to the ureter (ie around the proximal half of the common iliac artery/aortic bifurcation) are spared to avoid injury to the hypogastric nerves.⁹ All removed lymph nodes are placed in an EndobagTM.

The ventral aspect of the anterior division of the internal iliac artery is progressively dissected free of lymphatic tissue. This is done to identify the bladder pedicles, which are clip transected in close proximity to the bladder. Dissection is then extended along the lateral surfaces of the bladder, keeping the dissection plane medial to the sagittal plane of the medial umbilical ligament, up to the reflection of the endopelvic fascia on the lateral surface of the prostate. The distal ureter is clip transected.

The peritoneum overlying the rectovesical pouch is transversely incised, and the VD and the SVs are exposed.¹⁰ Dissection proceeds along the ventral aspect of the DF fascia and is maintained in the V-shaped area formed between the ampullae of the 2 VDs. The medial and ventral surfaces of the SV base is freed while no dissection is performed at the level of the tip and the middle part of the SV, which is encaged by parasympathetic nerve fibers.^{11,12}

Attention is then focused on the lateral prostate-vesicular angle. The proximal prostatic pedicle is severed progressively along the capsule of the prostate. Dissection proceeds in a dorsal direction along the base of the prostate and the bladder neck as previously described¹³ to reach the DF behind the lateral prostate-vesicular angle (fig. 1).

With the NVT detached from the lateral prostate-vesicular angle we transect the SVs at the base, preserving the middle part and tip. This allows for complete preservation of the proximal neuronal network (fig. 2).

Inverse U peritoneotomy is performed between the 2 internal inguinal rings to gain access to the Retzius space. Nerve sparing proceeds to the apex of the prostate according to the principles of intrafascial, tension and energy-free radical prostatectomy with high anterior release of the periprostatic nerves.^{6,8} Small penetrating arteries are secured with titanium clips. The posterior aspect of the prostate is dissected by a completely lateral approach, leaving the DF in place.

At the level of the apex the NVT extends posterolaterally and laterally to the urethra up to the 2 and 10 o'clock positions. It must be carefully mobilized to prevent damaging it, leading to urethral denervation, when severing the urethra or during the neobladder-urethral anastomosis. Accessory pudendal arteries must be spared to preserve EF.

Download English Version:

<https://daneshyari.com/en/article/5687763>

Download Persian Version:

<https://daneshyari.com/article/5687763>

[Daneshyari.com](https://daneshyari.com)