ROBOT-ASSISTED SURGERY IN UROONCOLOGY: INITIAL APPLICATION AT BINH DAN HOSPITAL

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INTRODUCTION

Robotic surgery is *the most advanced surgical technique in MIS* which is now performed quite extensively in high volume centres in developed countries

Since late 2016, for the first time, robotic surgery was performed in adults patients in Viet Nam

We report our initial series of 35 cases of robot-assisted urooncological procedures initially performed for adults patients at the Dept Urology of Binh Dan hospital, Viet Nam

The da Vinci Si™ robot surgical system was used

PATIENTS AND METHODS

Patients

Urooncological adults patients treated at the dept Urology of Binh Dan hospital, operated upon using the da Vinci Si™ robot surgical system, from November 30th 2016 to April 15th 2017

PATIENTS AND METHODS

Instrumentation: the da Vinci Si™ surgical system, with 4th arm

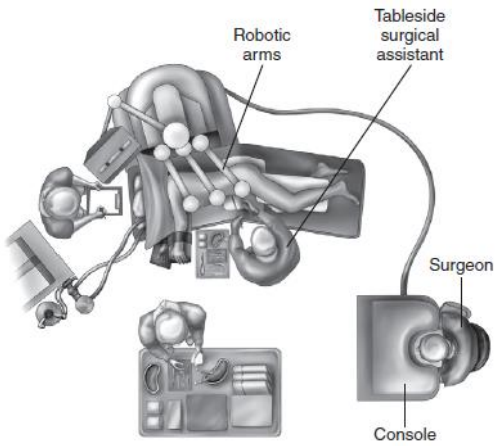
PATIENTS AND METHODS

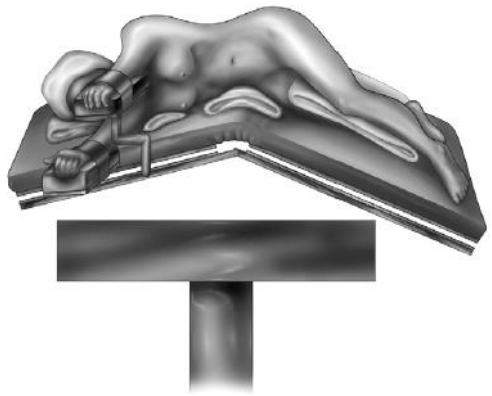
Instrumentation:

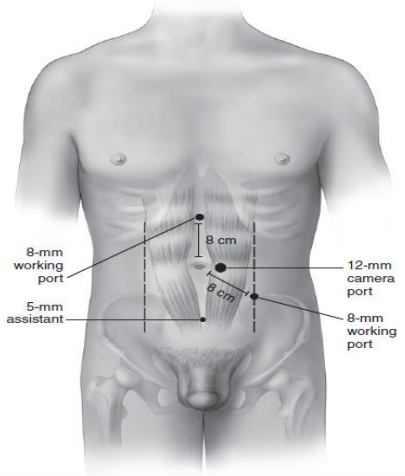
PATIENTS AND METHODS

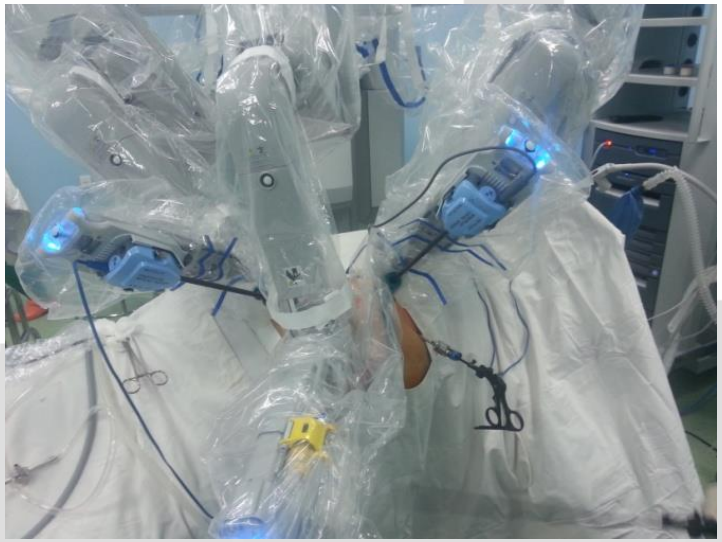
Patient positioning and ports placement

Patients with Upper tracts surgery: modified lateral decubitus position









PATIENTS AND METHODS

Patient positioning and ports placement

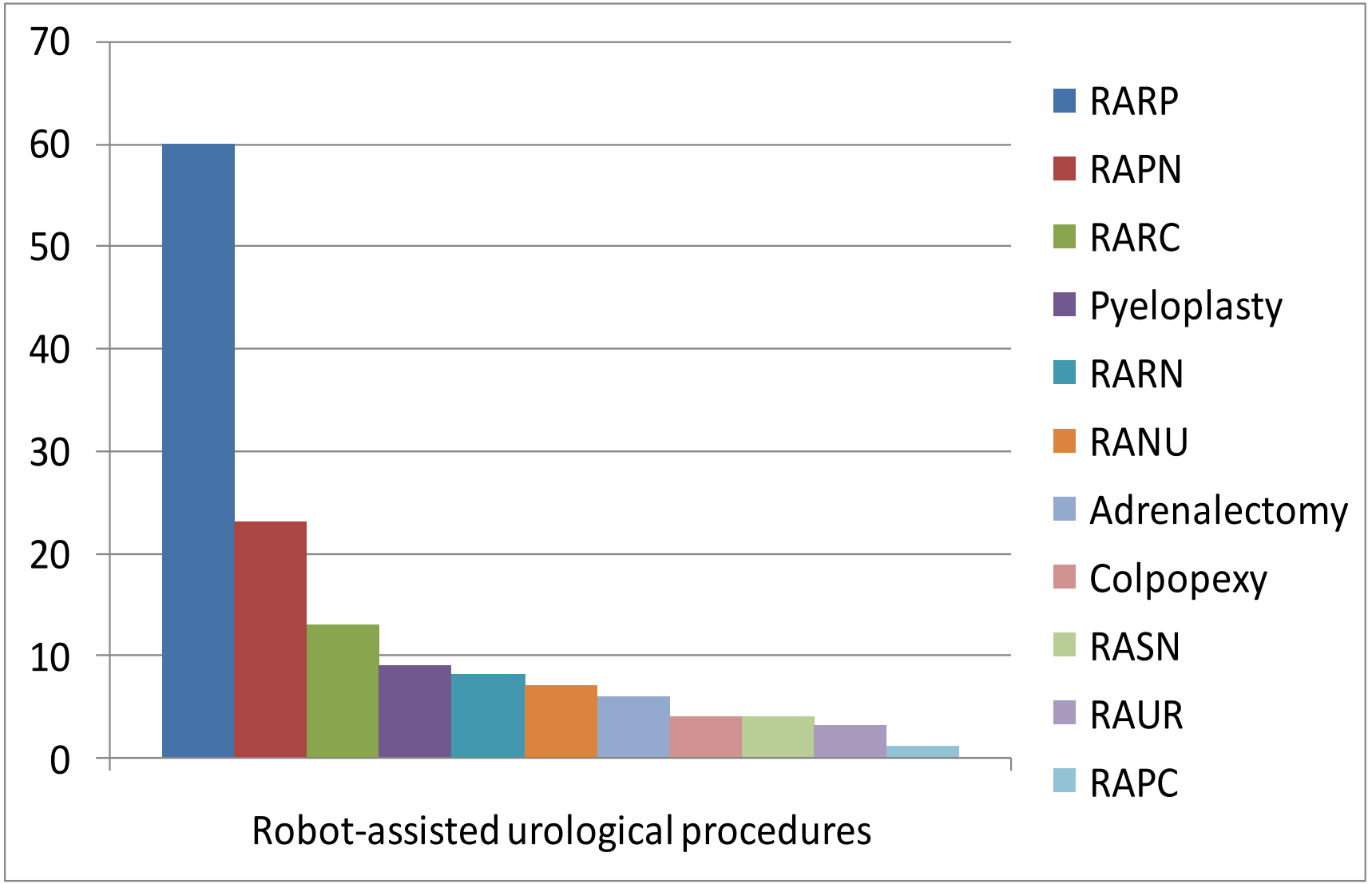
Patients with Lower tracts and distal ureter surgery: supine, steep Trendelenburg

RESULTS

From Nov 30th 2016 to Oct 20th 2017: **138 Pts**

- 60 robot-assisted radical prostatectomies
- 23 robot-assisted patial nephrectomies for small renal masses
- 13 robot-assisted radical cystectomy and orthotopic neo-bladder
- 9 robot-assisted pyeloplasties
- 8 robot-assisted radical nephrectomy (3 conversions)
- 7 robot-assisted nephroureterectomy for UTTCC
- 6 robot-assisted adrenalectomies
- 4 robot-assisted sacral colpopexies
- 4 robot-assisted simple nephrectomies
- 3 robot-assisted ureteral reimplantations
- 1 robot-assisted partial cystectomy

RESULTS


70
60
50
40
30
20
10
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RARP
RAPN
RARC
Pyeloplasty
RARN
RANU
Adrenalectomy
Colpopexy
RASN
RAUR
RAPC
Robot-assisted urological procedures

RESULTS

From Nov 30th 2016 to April 15th 2017: **35 UroOnco Pts**

- 22 robot-assisted radical prostatectomies
- 6 robot-assisted patial nephrectomies for small renal masses
- 1 robot-assisted radical cystectomy and extracorporeal orthotopic neo-bladder
- 2 robot-assisted adrenalectomies
- 1 robot-assisted radical nephrectomy (conversion)
- 3 robot-assisted nephroureterectomy for UTTCC

RESULTS

22 robot-assisted radical prostatectomies

Mean age : 66.9 (49 – 75)
ASA 2: 19 cases ASA 3: 3 case
Co-morbidities: Hypertension + Diabete: 3 cases ; Hypertension: 4 cases
Mean serum PSA : 32.15 ng/mL (8.76 – 93)
Prostate volume (MSCT/MRI): 39.46 mL (31-60)
Preop Gleason score (TRUS): 6.4 (4 - 8)
Preop Staging of tumor: T1bNoMo: 2 cases;
T2aNoMo: 7 cases ;
T2bNoMo: 9 cases ;
T3aNoMo: 2 cases ;
T3bNoMo: 2 cases.

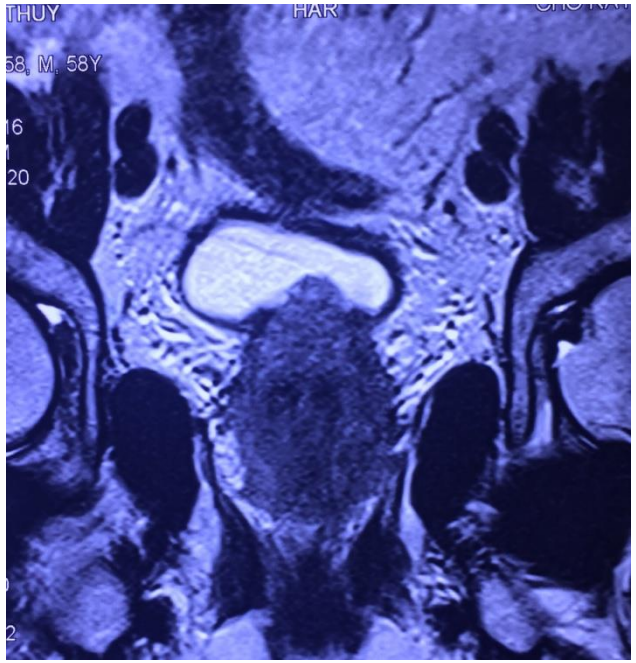
RESULTS

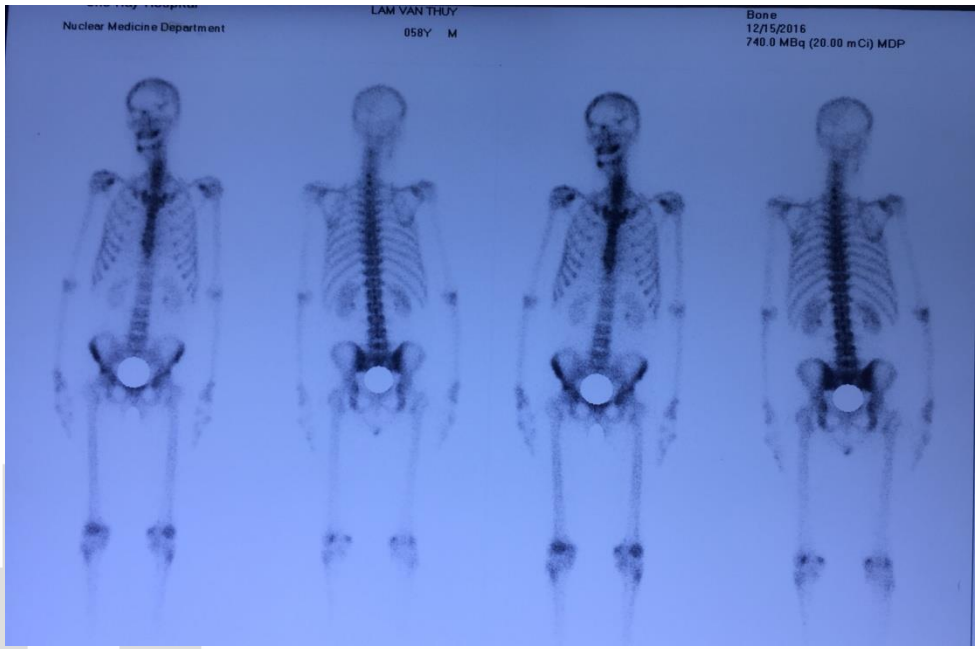
22 robot-assisted radical prostatectomies

Surgical technique: intraperitoneal (Montsouris technique)
Port: 5 ports: 9 cases ; 6 ports: cases
Mean O.T: 297 mins (105-480)
EBL: 355 mL (100 – 1000)
Pelvic LPN: 8 / 22 cases
Nerve sparing: 4 / 22 cases
Rocco’stitch : 7 / 22 cases
Postop drain removal : 5.2 days (1 – 10)
Postop hospital stay: 6.3 days (2 – 11)
Postop complications: pelvic fluid collections : 2/ 22 cases

RESULTS

22 robot-assisted radical prostatectomies





58 Y.O Male, PCa, cT3bNoMo

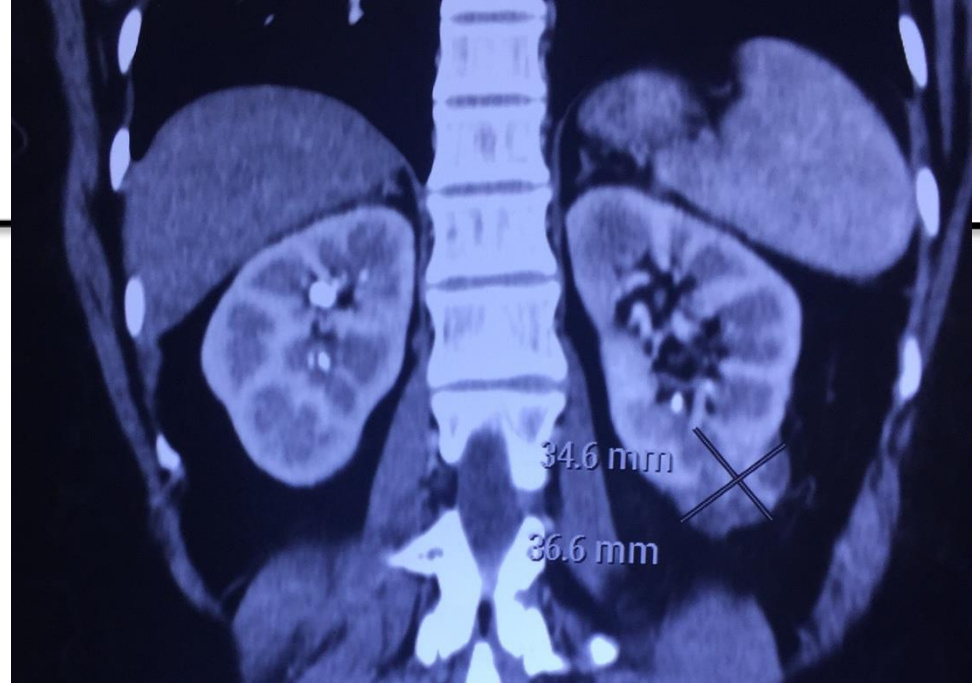
RESULTS

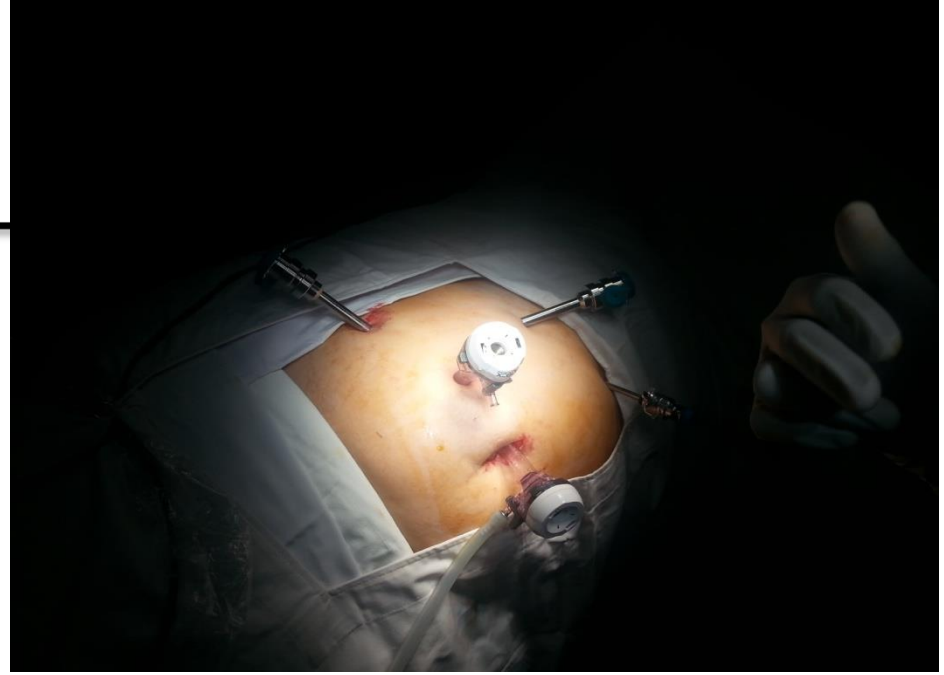
6 robot-assisted partial nephrectomies for small renal masses

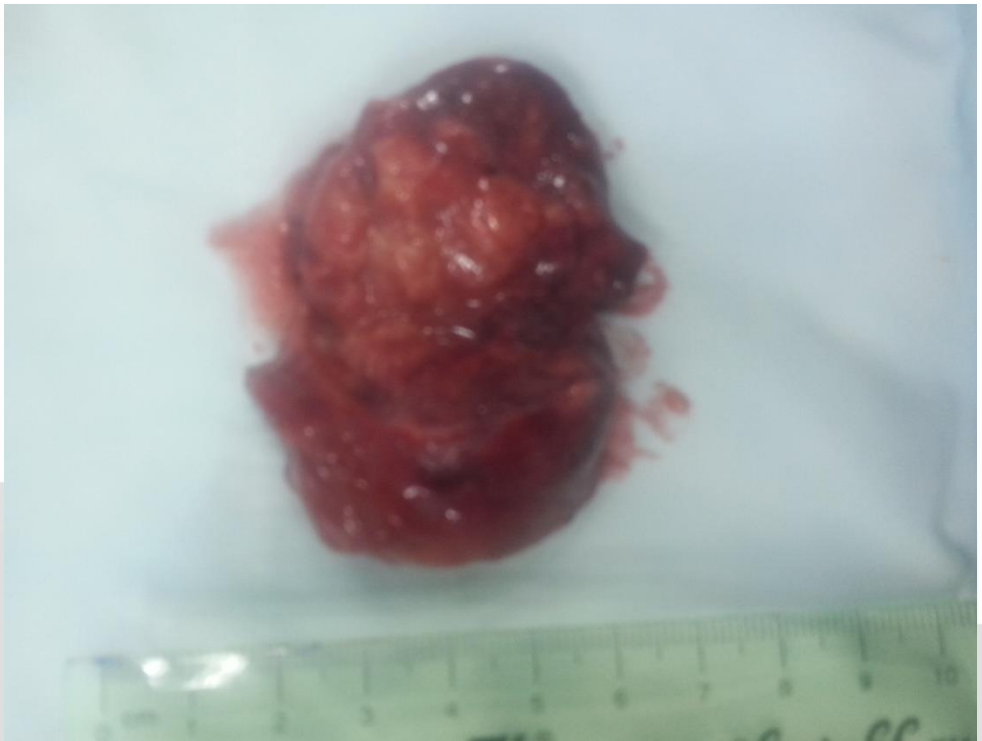
Mean age : 34 (32-36) ASA2: 6 cases
Mean tumor size: 34 mm (31-37)
R side tumor: 3 cases ; L side tumor : 3 cases
Usage of 4th arm: 4/6 cases
Mean O.T: 210 mins (165-255)
Renal parenchymal suturing in 2 layers: V-loc™ 3-0 (inner), and vicryl 1-0 (outer)
Mean WIT : 15 mins (10-20)
Renal pedicle clamping: Vessel loop: 2 cases ; Bulldog : 4 cases
Mean EBL: 50 mL
Mean postop hospital stay: 5.5 days (5-6)
Histology of tumor: AML and CC-RCC

RESULTS

6 robot assisted partial nephrectomies for small renal masses





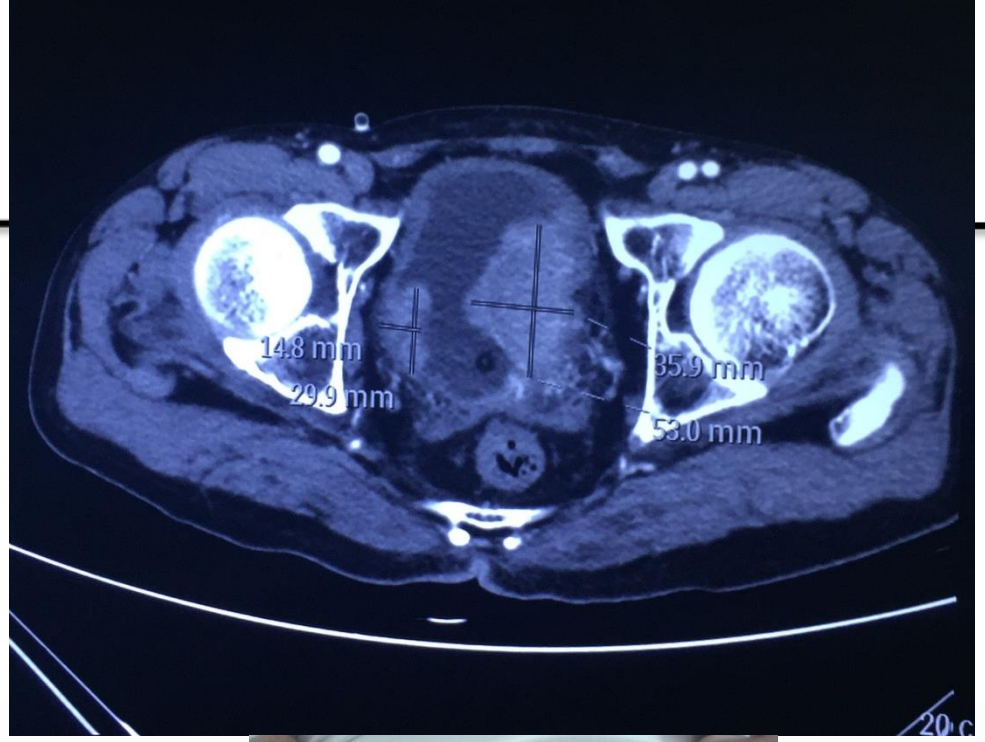


RESULTS

1 robot-assisted radical cystectomy and extracorporeal orthotopic ileal neo-bladder

Age : 45
ASA: 2
Surgical technique: radical prostatocystectomy, extracorporeal orthotopic ileal neo-bladder (Hautmann)
6 ports
O.T: 660 mins
EBL: 500 mL
Postop.hospital stay: 15 days
Histology of tumor: muscle invasive TCC of bladder

RESULTS



Robot-assisted radical prostatocystectomy and extracorporeal orthotopic ileal neo-bladder

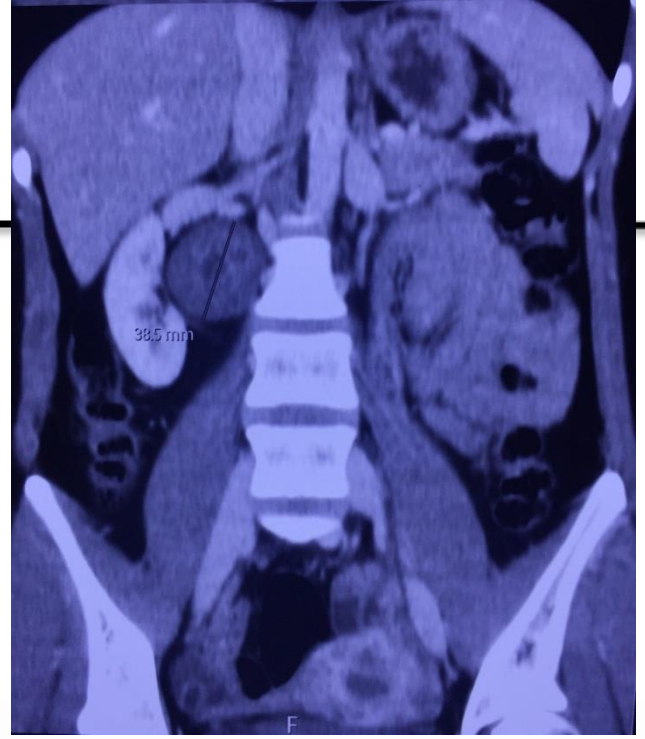
RESULTS

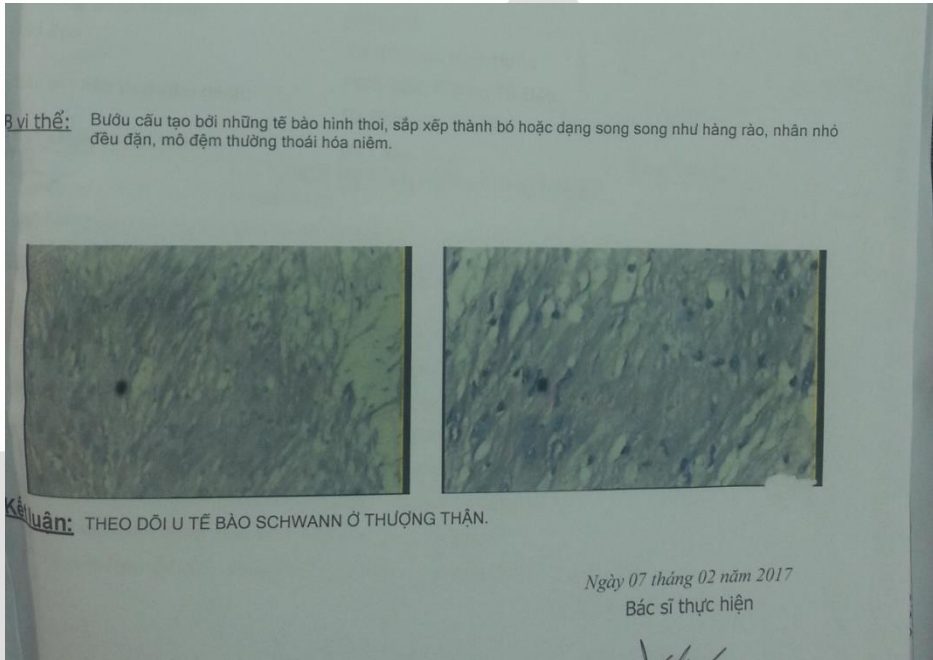
2 robot-assisted adrenalectomies

Mean age : 37.5 (26-49)
ASA 2: 2 cases
Mean tumoe size: 34.5 mm (30 - 39)
Mean O.T: 97.5 mins (45 - 150)
Mean EBL: 75 mL (50 - 100)
Postop. hospital stay: 8 days (4 - 12)
Histology of tumors: Myelolipoma and Schwannoma

RESULTS

Robot-assisted adrenalectomy: R side tumor





...vị thể: Bướu cấu tạo bởi những tế bào hình thoi, sắp xếp thành bó hoặc dạng song song như hàng rào, nhân nhỏ đều đặn, mô đệm thường thoái hóa niêm.

...luận: THEO DÕI U TẾ BÀO SCHWANN Ở THƯỢNG THẬN.

Ngày 07 tháng 02 năm 2017

Bác sĩ thực hiện

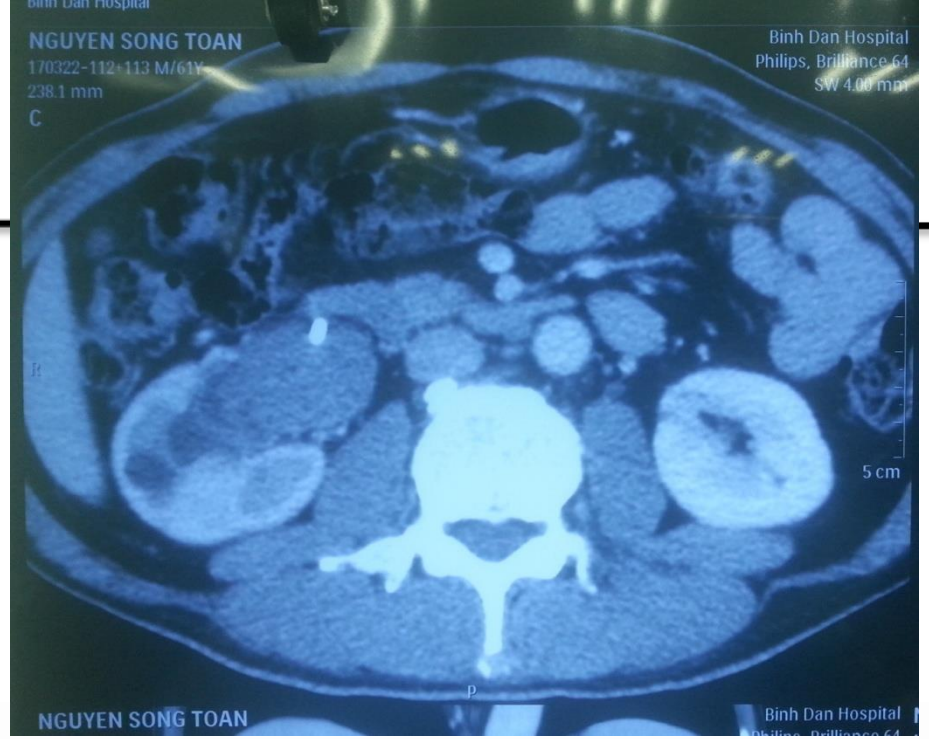
RESULTS

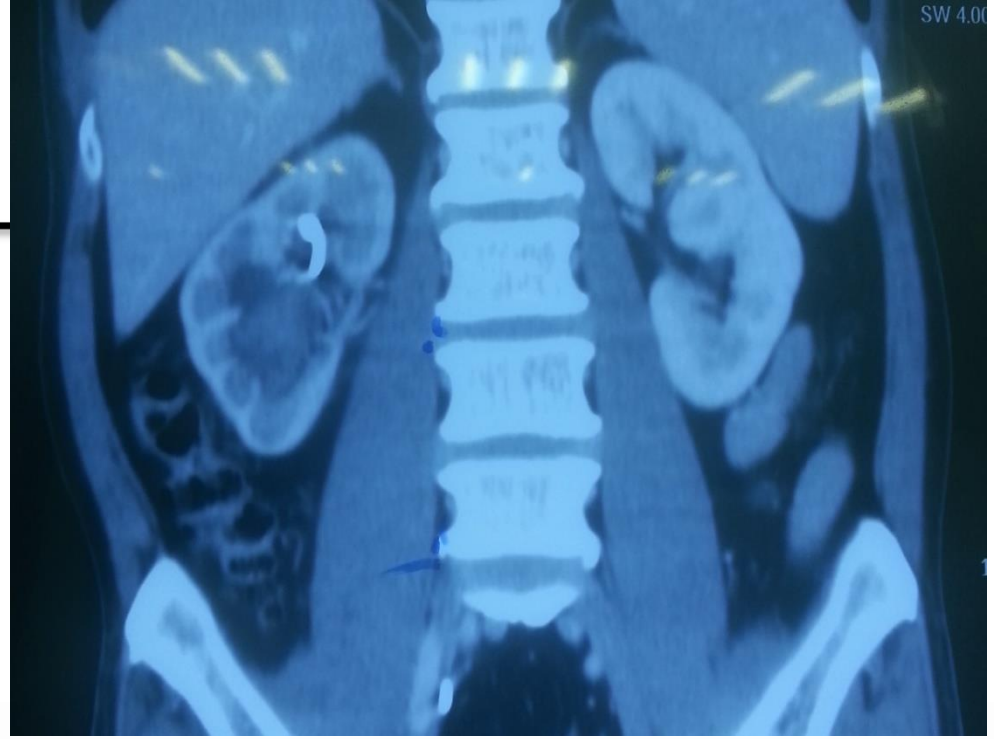
3 robot-assisted nephroureterectomies for UT TCC

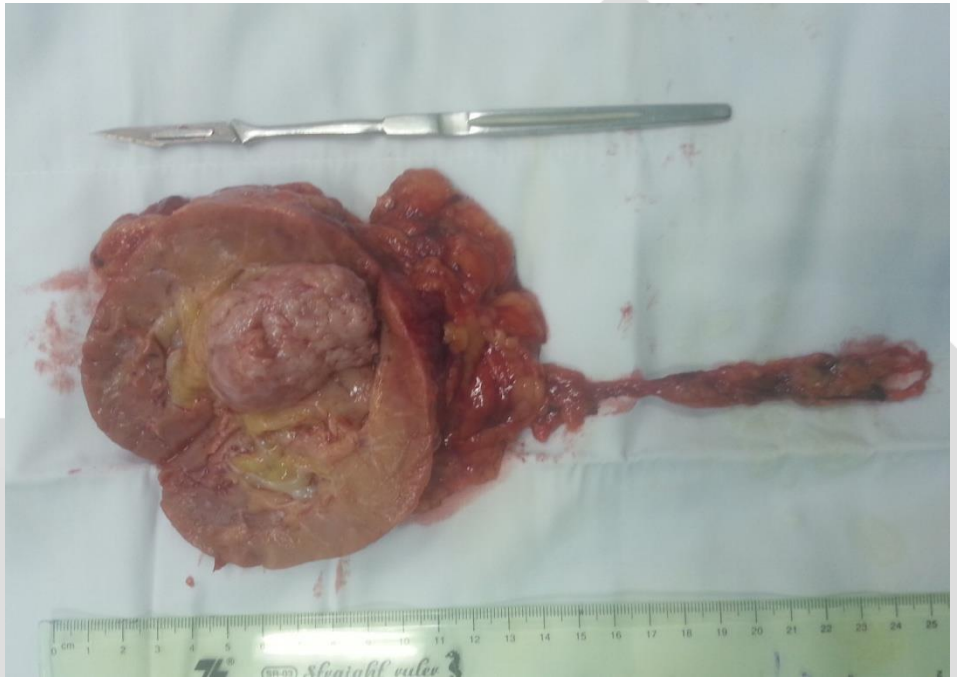
Gender: Male: 2 cases, Female: 1 case
Mean age: 54 (47 – 55) ; ASA2: 3 cases
R side : 2 cases, L side : 1 case
Mean O.T : 240 mins (210 – 270)
Mean EBL : 800 mL (400 - 900)
Postop. hospital stay: 6 days (5 - 7)
Histology of tumors: UT TTC : 3 cases

RESULTS

Robot-assisted nephro-ureterectomies







DISCUSSION

The advantages of the da Vinci™ robot system

Surgeon's side

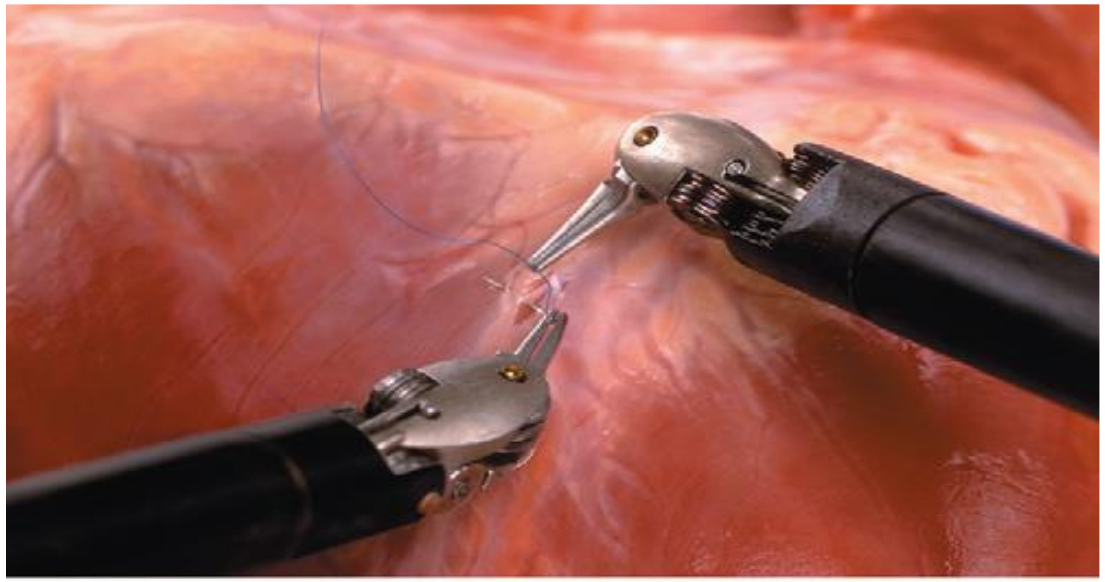
Enhanced dexterity, greater surgical precision, increased range of motion, tremor reduction, motion scaling, improved ergonomics and comfort.

The magnified, 3D view that is controlled by the surgeon. The surgeon manipulates both the camera and 2 to 3 instrumented arms

The Endowrist technology has 7 degrees of freedom with which to operate the instruments

The instruments' movements are directed by the surgeon's fingers and wrists, making it feel far closer to open rather than standard laparoscopy

DISCUSSION



DISCUSSION

Patients' side :

Reduction in blood loss, transfusion rate, hospitalization time, catheterization time, and perioperative complications and the potential for improved oncologic outcomes, continence rates, and potency.

Smaller incisions, less pain, less hospital stay, shorter convalescence

Reduction in blood loss and transfusion rate has been shown consistently in RALP

DISCUSSION

Surgical procedures performed with robotic assistance

Prostatectomy
Pyeloplasty
Cystectomy
Nephrectomy
Sacrocolpopexy
Vasovasostomy
Pediatric urologic procedures (nephrectomy, partial nephrectomy, pyeloplasty, antirefl ux)
Adrenalectomy
Ureterolysis, ureteroureterostomy

DISCUSSION

The lower tracts procedures such as RALP, RALC,… reveals the consistent benefits of MIS, while those of upper tracts procedures remains more or less controversial

The ports placement in upper tracts procedures (e.g. RALP) is more constant in comparison to those of upper tracts procedures (e.g. RAPN)

Robot helps to perform the specific techniques in sophisticated procedures: in RARP to do the vesicourethral anastomosis, Rocco's stitch, division of the DVC

DISCUSSION

Remarks on this initial series

The two most common procedures in this series are RALP and RAPN

In RALP, 4 cases of capsule invasive tumors and seminal vesicals invasive tumors were successfully performed robotically without conversion to open surgery

Robot facilitates the lymphadenectomy, decreaes the rate of conversion to open surgery

DISCUSSION

Patients recruitment

Counsel the patients the benefits of robotic surgery over standard laparoscopy /open surgery

Combination of (1) Media's health education (2) The surgeon reputation (3) The dedication of the counsellor

Recruit the patients wishing and capable to afford robotic surgery or recruit only the patients with procedures recommended for robotic surgery ?

CONCLUSIONS

Robot-assisted surgery, with many advantages over standard laparoscopic / open surgery thanks to technological innovations has helped the urologists to perform the sophisticated procedures with shorter learning curves.

Our initial series of 35 robot-assisted urooncological procedures has achieved encouraging outcomes.

More cases are to be performed in the future.

THANK YOU FOR YOUR ATTENTION