



***Incidents and complications
in our first 200 daVinci
radical prostatectomies***

***II International Symposium
Robotic Surgery and New technologies in Urology.
Bilbao 5-6 March, 2009***

PATIENTS AND METHODS

• *Period:* January 06 – March 09

• *Nº Patients:* **231**

- ROBOTIC RADICAL PROSTATECTOMY: **224**
- ROBOTIC RADICAL NEPHROURETERECTOMY: **2**
- ROBOTIC RADICAL NEPHRECTOMY: **1**
- ROBOTIC PARCIAL NEPHRECTOMY: **2**
- ROBOTIC PYELOLITHECTOMY: **1**
- ROBOTIC SUPRARRENALECTOMY: **1**

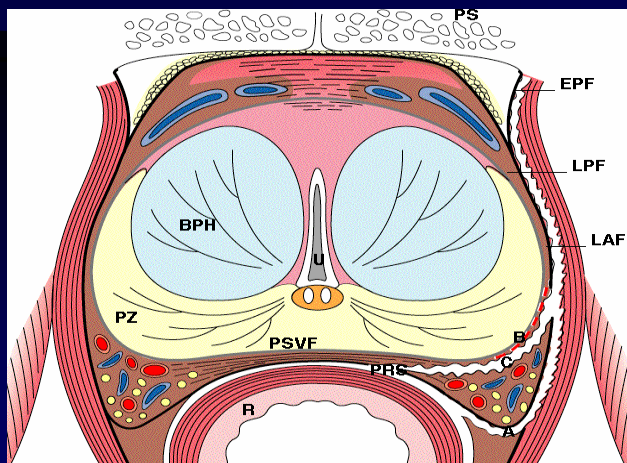
PATIENTS AND METHODS

- Period: January 06-March 09
- N° Patients: 224
- Mean age at diagnosis: 61,15 years (47 to 74 years)
- Previous abdominal surgery: 28,12 %
 - 19 apendicectomies
 - 6 Hiatus hernia repair
 - 27 Inguinal hernia repair
 - 10 cholecystectomies, 1 cholectomy
- Prostatic surgery: 12 TUP-R, 2 Cryotherapy.



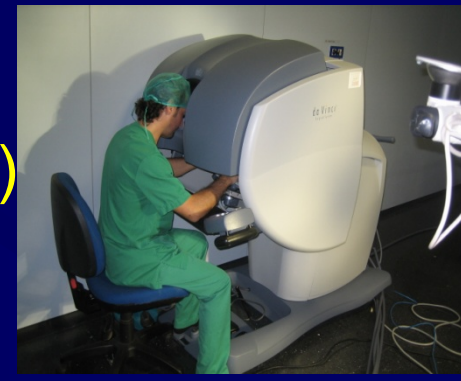
PATIENTS AND METHODS

- **Median pretreatment PSA level: 8,18 ng/ml (2,6 – 38 ng/ml)**
- **Median Gleason sum 6,8 (range 2 to 8)**
- **Median prostate volumen: 34,99 cc (range 10-120 cc)**
- **DA VINCI four arms, Intra-interfascial technique (when is possible).**



RESULTS

- Mean set-up time: **12,9 min** (8-47 min)
- Mean console time: **132 min** (97-315 min)
- Blodd loss average: **215 cc** (50-1100 ml)
- Transfusion rate: 9/224 (4,01 %)
- *No Conversion*
- *4 reoperation (1,78%)*
- Hospital stay: **4,6 days** (4-35 days)
- Bladder catheterization: **11 days** (5-28 days)



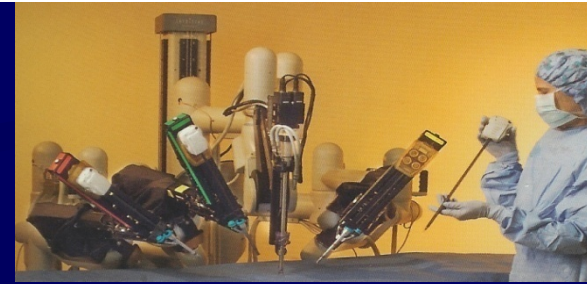
RRP major complications

• SURGICAL COMPLICATIONS (2,2%)

<u>Nº CASE</u>	<u>COMPLICATION</u>	<u>SOLUTION</u>	<u>HOSPITAL STAY</u>	<u>PSA</u>	<u>ERECTILE FUNCTION</u>	<u>CONTINENCE</u>
12	Late bleeding at 12 hours Epigastric artery injury	Laparotomy and suturing	11 days	0,01	Partial erection	Total
23	Peritonitis Cecal thermal injury (previous appendectomy)	Laparotomy and Cecostomy	28 days	0,00	Erections OK	Total
60	Retrovesical haematoma	Perineal percutaneous drainage	7 days	0,01	Erections OK	Total
78	Urinoma after spontaneous urinary catheter dislodgement	Laparotomy, drain and urinary catheter relocation	16 days	0,01	Erections with PDE5I	Total
189	Late persistent hematuria. Haemophilia A	Selective embolization	15 days	0,01	Parcial erections	1 Pad/day

RRP major complications

- MEDICAL COMPLICATIONS



<u>Nº CASE</u>	<u>COMPLICATION</u>	<u>SOLUTION</u>	<u>HOSPITAL STAY</u>	<u>PSA</u>	<u>ERECTILE FUNCTION</u>	<u>CONTINENCE</u>
1	Late Haematuria and urinary retention	Bladder catheter and perfussion	24 hours	0,006	Erection OK	Total
31	TTP and Acute renal Failure	Intensive care Haemodialysis	28 days	0,12	Erections with PDE5I	Total
51	Pulmonar Embolia	Anticoagulation	36 hours	0,006	Parcial Erections PDE5I	Total
55	Pulmonar Embolia	Anticoagulation	48 hours	0,01	NO Erections	< 1 pad/day

RRP minor complications



Urological (4,9%)

- BLADDER INJURY: 2 (0,8%) **intraoperative repair (0,4%)** .
- URINARY LEAKAGE: 2 (0,8%) **1 open drain, 1 conservative management with bladder catheter (1-7,5%)**.
- URINARY RETENTION: 3 (1,2%) **bladder catheter (4%)**.
- BLADDER NECK CONTRACTURE: 1 (0,4%) **TU incision (0,6-3%)**.
- MEATAL STRICTURE : 2 (0,8%) **meatotomy and dilation (0,3-3%)**
- BLADDER clip and Hem-o-lok EROSION: 1(0,4%) **TU remove**.
- **NO URETERAL INJURY (0,3%)**

RRP minor complications

Intestinal (2,6%)

- **INTESTINAL INJURY: 1 (0,4%) unrecognized cecal injury secondary to thermal lesion after extensive lysis of adhesions. Laparotomy, cecostomy and drainage (0,6%) .**
- **PERSISTENT ILEUS: 5 (2,2%) bedside nasogastric tube. 1 due to retrovesical haematoma, 2 to urinary leak (1 open drain), 1 cecal injury and 1 delayed bowel function. (0,7-2,4%).**
- **NO RECTAL INJURY (0,9%).**
- **NO RECTOURETHRAL FISTULA (0,1%).**



RRP minor complications

Vascular (4,46%)

- EPYGASTRIC ARTERY LESION: 1 (0,4%) unrecognized left EA injury during surgery , post 12 hours bleeding, laparotomy and haemostasis (0,8%) .
- PULMONARY EMBOLIA: 2 (0,8%). Rehospitalization during 48 hours with anticoagulant therapy (0,6%).
- PELVIC HEMATOMA: 2 (0,8%). 1 rectovesical haematoma (percutaneous perineal ecoguided drainage) and 1 expectant management.
- PORT SITE HEMATOMA: 5 (2,23%) . Assistant 12 mm port. Conservative management

TRANSFUSION RATE: 9 (4,01%) (0-1,2%)

RRP complications

Infectious

- *UTI: 5 (2,23 %) (0,3%)*
- *Bacterial peritonitis: 1 (0,4%) (0,1%)*
- *Wound infection: 0% (0,6%)*
- *Celulitits: 0% (0,9%)*
- *Neumonia: 0% (0,1%)*



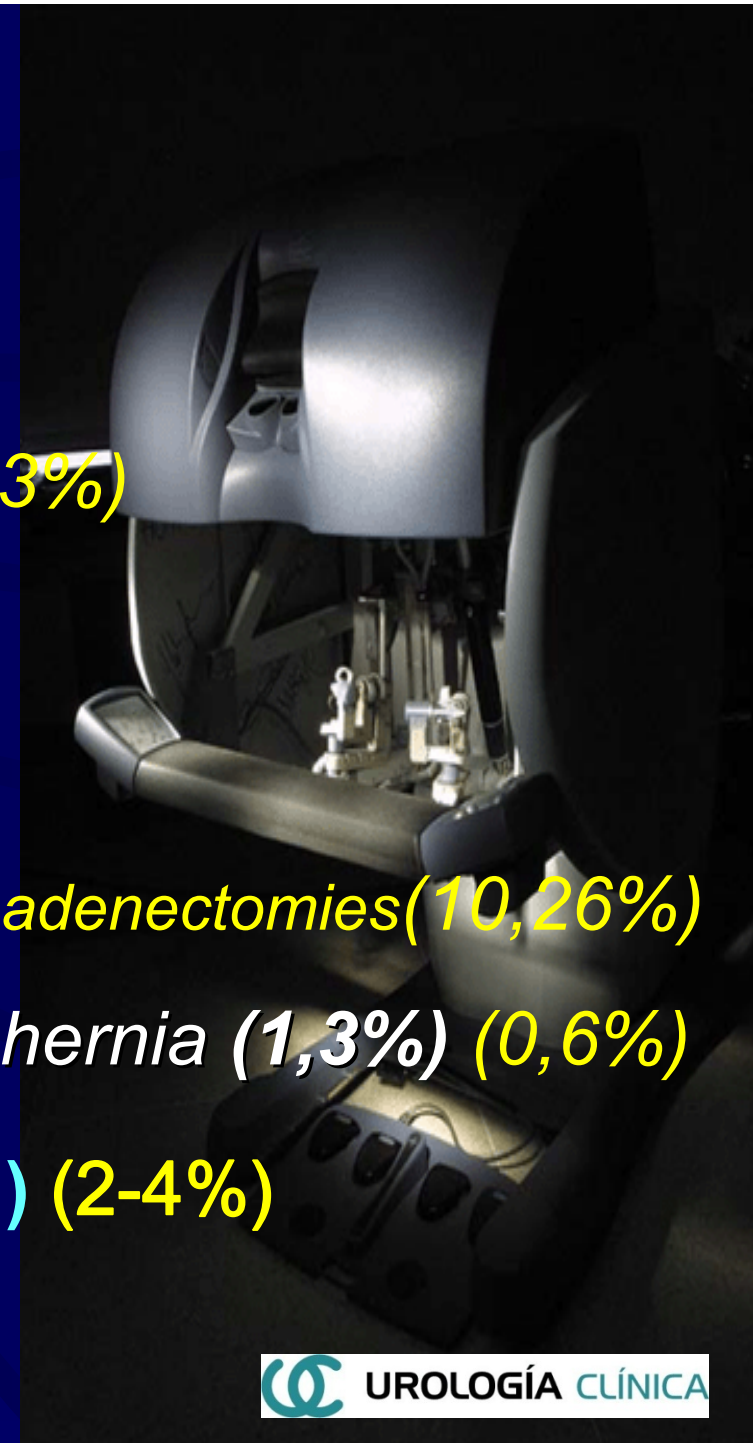
RRP complications

Neurological

- *Obturator nerve injury: 0% (0,3%)*
- *Neuroapraxia: 0% (0,01%)*

Others.

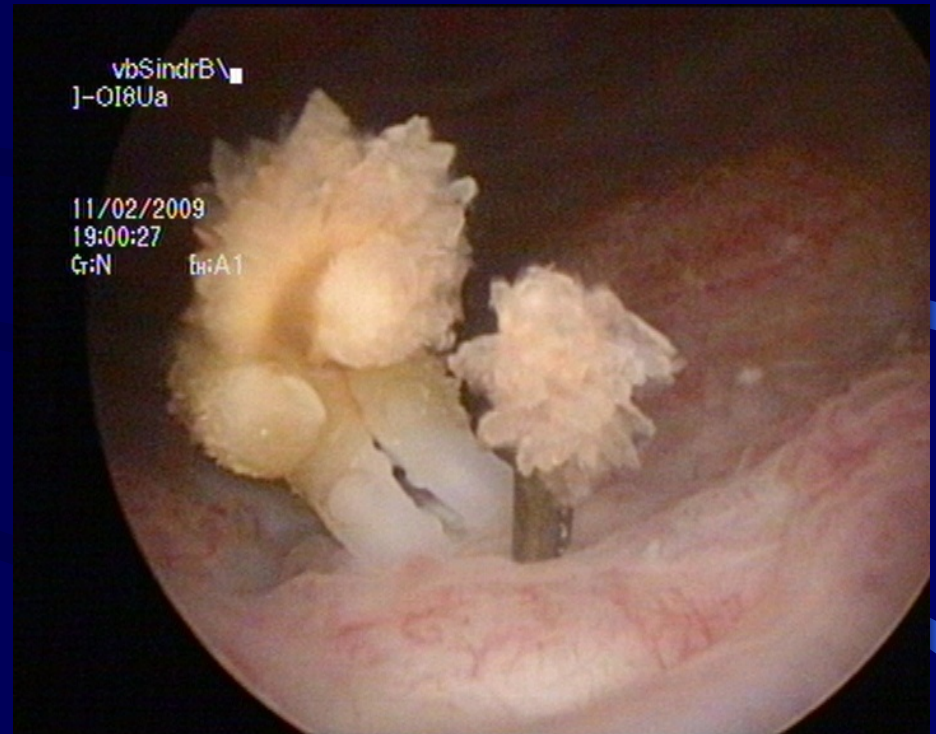
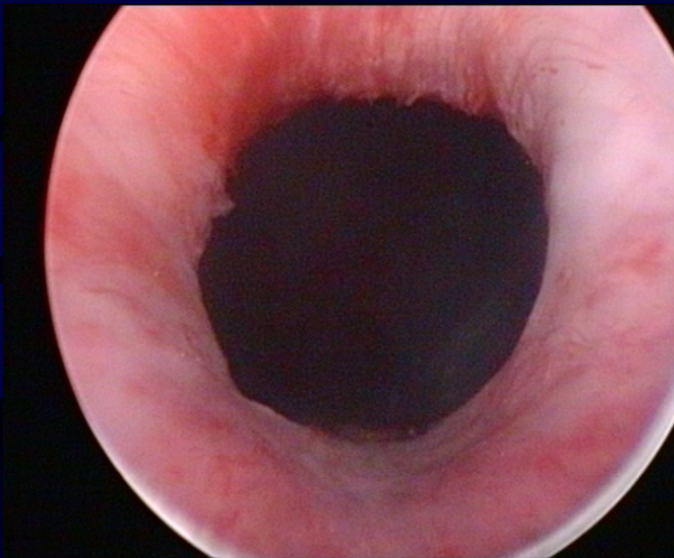
- *Lymphocele: 0% (0,6%) lymphadenectomies(10,26%)*
- *Incisional hernia: 3 umbilical hernia (1,3%) (0,6%)*
- Robot malfunction 4 (1,7%) (2-4%)



BLADDER CLIP AND HEM-O-LOK EROSION

Bladder neck contracture 0,6-3%

Inflammatory reaction , clips migration o dislogement,
Calcification and lithiasis.

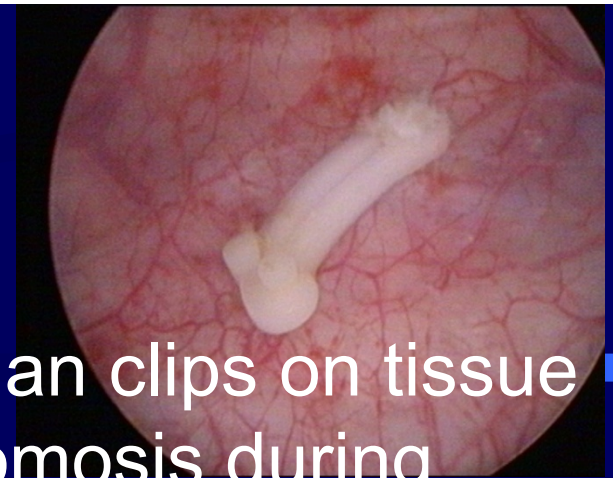


Blumenthal KB: Bladder neck contractures related to the use of Hem-O-Lok clips in Robot-assisted laparoscopic radical prostatectomy. Urology 2008; 72:158-161.

Long B. Vesicourethral anastomotic stricture after radical prostatectomy secondary to migration of a metal clip. Prog Urol 2006; 16:384-385.

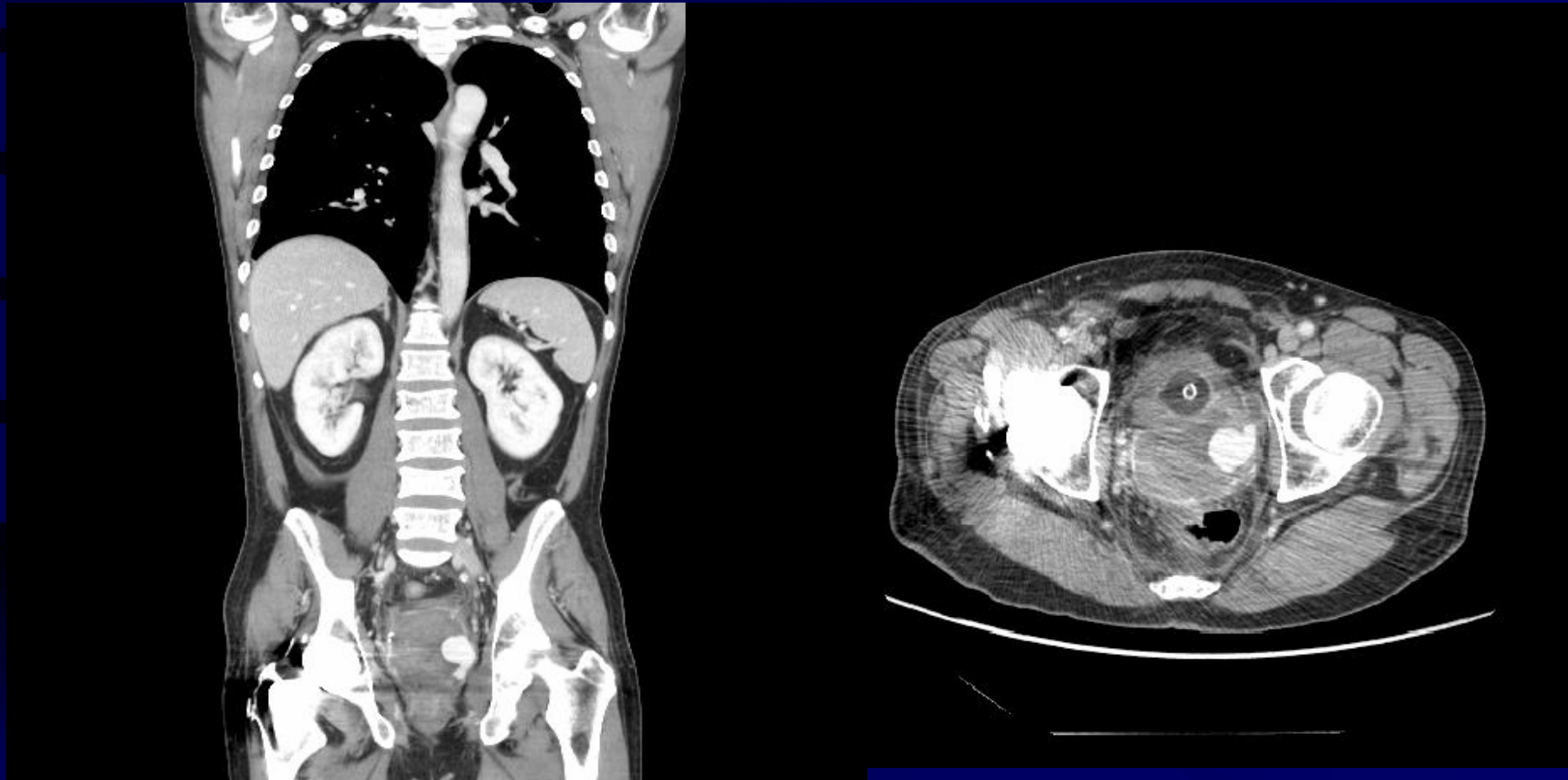
RECOMMENDATIONS

1. Minimize the use of Hem-O-lok and clips on tissue immediately adjacent to the anastomosis during RALP.
2. Reduce clips specifically in the vasa and seminal vesicles.
3. Make efforts to retrieve any loose clips after the procedure.
4. Attention to voiding symptoms in late postoperative



Blumenthal KB: Bladder neck contractures related to the use of Hem-O-Lok clips in Robot-assisted laparoscopic radical prostatectomy. Urology 2008; 72:158-161.

Late hematuria due to vesical artery bleeding: Supraselective embolization



Haemophilia A patient with persistent haematuria after a week postRARP

(Cortesy Dr. Díez Razquin)

Late hematuria due to vesical artery bleeding: Supraselective embolization



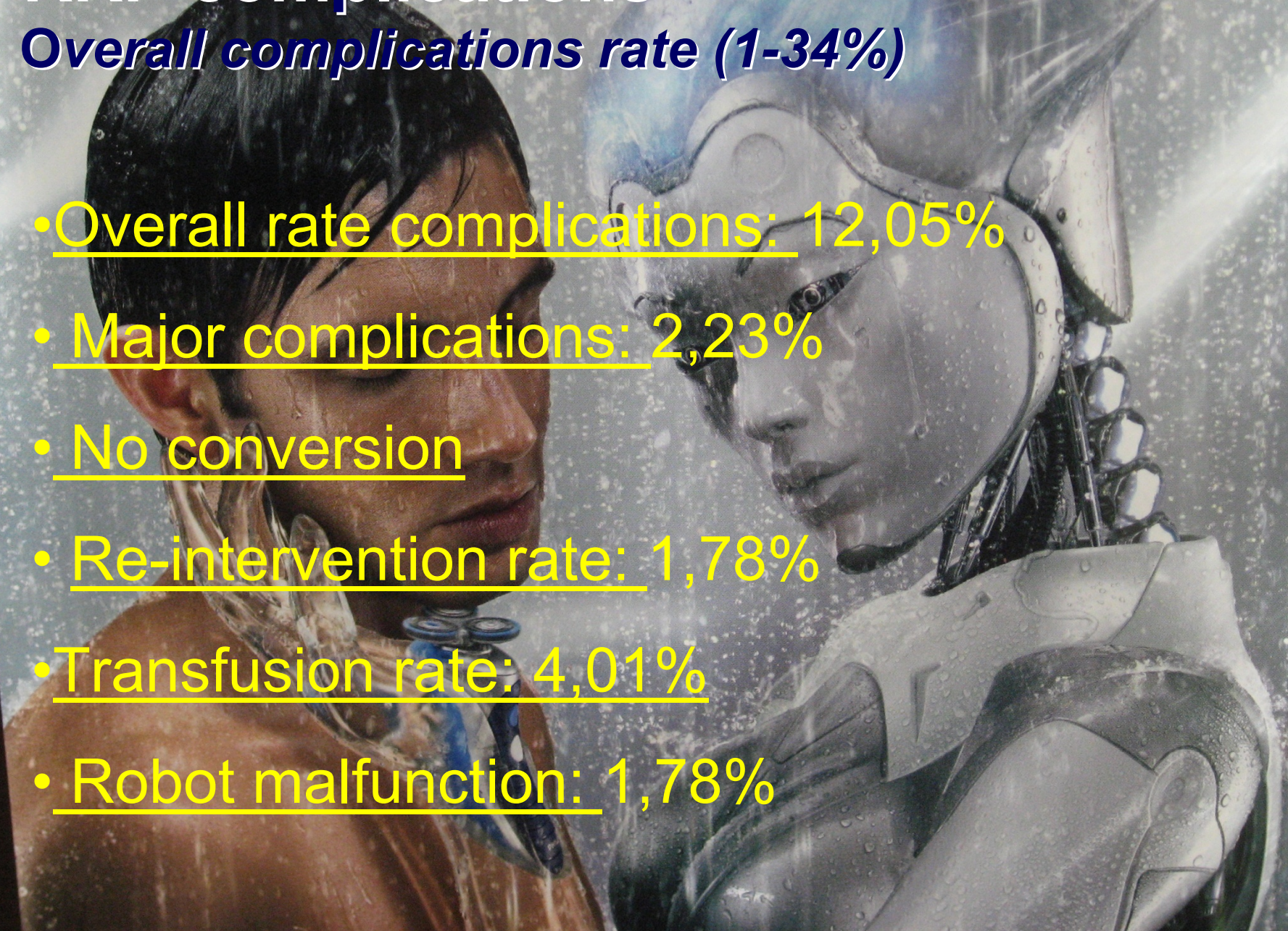
Beckley I. Delayed hemorrhage from an accessory internal pudendal artery pseudoaneurysm after RRP: successful management with angiography and embolization J Endourol 2007; 21:923-925.

(Cortesy Dr. Díez Razquin)

RRP complications

Overall complications rate (1-34%)

- Overall rate complications: 12,05%
- Major complications: 2,23%
- No conversion
- Re-intervention rate: 1,78%
- Transfusion rate: 4,01%
- Robot malfunction: 1,78%



Are really advantages in performing Robotic-Assisted Laparoscopic Prostatectomy ?

Operative parameters for conventional(RRP), laparoscopic (LRP), and robotic (RAP) radical prostatectomy

Technique	RRP	LRP	RAP
Operating Time (min)	131-217 min	214-278 min	160 min
EBL(mL)	820-1395 ml	171-1230 ml	153 ml
Duration of Catheterization	7 –14 days	6-9 days	7 days
Complication Rates (%)	6,6-10%	11-31%	5%
Positive Margins (%)	17-21 %	15-18%	6%

Menon M. Laparoscopic radical prostatectomy: conventional and robotic. Urology 66:101-104, 2005

Menon M: Prospective comparison of RRP and RAP: The Vattikuti urology institute experience: Urology 2002;60:864.

Are really advantages in performing Robotic-Assisted Laparoscopic Prostatectomy ?

Perioperative complications of laparoscopic (LRP), and robotic (RAP) radical prostatectomy

Technique

Operating Time (min)

EBL(mL)

Transfusion

Complications

Urine leak (%)

Ileus (%)

LRP(n 358)

RAP(n 322)

4,1 hours

3,1 hours

250 ml

200 ml

2,2 %

1,6 %

5,9 %

0,3 %

13,4 %

6,8 %

5,3 %

2,8 %

HU J. : Perioperative complications of LRP and RAP. J Urol 2006; 175:541-546.

CONCLUSIONS I

The background of the slide features several detailed anatomical sketches in a dark, ink-like color. The most prominent is a large, central drawing of a human heart, showing its four chambers (right and left atria and ventricles) and the major blood vessels (superior and inferior vena cava, aorta, and pulmonary artery/vein). To the right of the heart, there are sketches of the lungs, showing their lobes and branching bronchial structures. The sketches are rendered with fine lines and shading, giving them a scientific and historical appearance, similar to the anatomical drawings of Leonardo da Vinci.

- 94,6 % Patients had and adequate postoperative course with 4,6 days mean hospital stay and 11 days mean time urinary catheter removal.
- Overall complication rates 12,05%, with only 2,23% of major complications and 1,78% re-intervention rate.
- Complications decrease with learning curve (most in first 100 cases).

CONCLUSIONS II

- **No conversions** to open or laparoscopic procedures were needed during 224 RRP, transfusion rate of **4,01%** in athermal technique and **1,78%** robot malfunction with no implications and surgical performance.
- RRP complications incidence is comparable and even favourable to those published reports of open an laparoscopic RP, and establish as a **safe and reproducible** technique.

210.

“...even robotic surgery seems to be easy to learn, is **difficult to master**.... and probably learning curve is endless “

*Robotic improves precision, but **surgical team experience** continues to be the most important key point for better results.*



HERRMANN TR. Oncological and functional results of open, robot-assisted and laparoscopic radical prostatectomy: does surgical approach and surgical experience matter?. World J Urol 2007;25:149-160