

ROBOTIC SURGERY IN UROLOGY OUR EXPERIENCE AND RESULTS

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INTRODUCTION

- In 2000, the first application of robotic surgery in a case of prostate cancer in the Urological Clinic of University of Frankfurt, Germany
- Since then, robotic surgery in Urology has
 - gained massive ground
 - established as the “gold standard” technique for the majority of urological conditions, both benign and malignant
- Since 2006,
 - I came back in Greece
 - I organized the Robotic Urological Centre
 - I have successfully performed **over 7.000** robotic surgeries, involving all **malignancies** of kidney, ureter, bladder and prostate, as well as **benign** urological cases such as bladder diverticulum, benign prostate hyperplasia, ureteric strictures etc.

Robotic Radical Prostatectomy

- Since 2006, over 4.500 successful cases
- Patients having various stages of prostate cancer, from cT1 to cT3b with locally advanced disease
- Within a follow-up schedule at 6 months, 1 year and 2 yrs, functional outcomes such as erectile function and continence were comparable and in many cases better than those presented in open series.
- Especially in low and medium risk cases, were preservation of neurovascular bundles was oncologically safe, **continence** and **erectile function** rates reach almost 95%
- **Oncological outcomes** at 1,5, and 10 yrs were comparable and similar even better to open and laparoscopic series, based on large multicentral retrospective studies comparing robotic to open surgery
- Extended lymphadenectomy performed according to nomograms (mean: 29, range: 18-96 nodes)
- Multi-parametric MRI of the prostate and fusion biopsy in order to detect significant cancer sites that traditional TRUS-biopsy usually misses
- In conclusion, robotic radical prostatectomy is the “gold standard” method of surgery in many countries including USA, where over 90% of prostate cancer cases are treated robotically

Robotic Radical Cystectomy

- ▣ Successfull performance of approximately 700 robotic radical cystectomy surgeries
- ▣ All kinds of urinary diversion techniques are applied intracorporeally (ileal conduit and orhotopic Studer neobladder) depending on pre-surgical evaluation.
- ▣ Oncological results in 1 and 5 yrs follow-up are similar with open surgery series.
- ▣ Functional outcomes in cases of Studer neobladder in terms of continence and potency are superior to open surgery (more than 80% continence and over 95% potency)
- ▣ Surgical morbidity and complication rates, length of hospital stay, are significantly lower with robotic surgery

Robotic Nephro-Ureterectomy

- ▣ Nephro-Ureterectomy is the surgical treatment for urothelial tumors of kidney and ureter
- ▣ We have performed approximately 400 robotic surgeries
- ▣ Surgical morbidity, in-hospital stay, post-surgical complication rates were significantly lower compared to open and laparoscopic surgery.
- ▣ Oncological outcomes at 1 and 5 yrs follow-up are similar to open surgery series.

Robotic radical nephrectomy

- ▣ Radical nephrectomy is the treatment of choice for kidney tumors more than 7 cm in size (>T2) or tumors located near the renal hilum or for large totally endophytic tumors.
- ▣ Tumor size ranges from 2,5 (intrarenal-hilar) to 21cm
- ▣ Including cava thrombus reached just below the hepatic veins
- ▣ Patient with BMI over 40 kg/m²
- ▣ Robotic radical nephrectomy has become the “gold standard” treatment for those kidney tumors.
- ▣ Over 800 robotic radical nephrectomy surgeries
- ▣ All parameters, including hospital length stay, blood loss, post surgical complication rates, are much lower compared to open and laparoscopic surgery.

Robotic partial nephrectomy

- ▣ Partial nephrectomy is the treatment of choice for small, T1 renal tumors. Even in open surgery, partial nephrectomy is a technically challenging method.
- ▣ As it applies for radical nephrectomy, robotic partial nephrectomy has also become the “gold standard” treatment of choice.
- ▣ Performed over 700 robotic cases
- ▣ In selected cases, non-clamping method was also used
- ▣ Challenging cases with Padua score over 10 in 40% of the cases
- ▣ Intracorporeal/Robotic-Guided Ultrasound device is using
- ▣ In our series, positive surgical margin rates were lower compared to open surgery, almost 0% (one case, 1/700)
- ▣ In 5 yrs follow up, oncological results similar to open surgery series
- ▣ Although robotic partial nephrectomy presents many advantages compared with open surgery, it still remains a challenging technique even for experienced robotic surgeons

Conclusions

- ▣ Robotic surgery is the present and future in Urology
- ▣ Our clinic in Metropolitan hospital is provided with the latest two da Vinci surgical systems, Xi and Si.
- ▣ In most cases, robotic surgery is the “gold standard” technique for all malignancies and benign conditions of the genitourinary tract.
- ▣ The advantages from the use of the robotic system are various:
 - 15x magnification of the surgery field
 - Three-dimensional view
 - No hand tremor, with precise movement of the robotic arms
 - Robotic arm mimics the wrist movements, with 8 degrees of freedom
- ▣ But the most important thing is the experience!
 - Because robotic surgery is a useful tool, **at the hands of an experienced surgeon**, who is able to utilize all the advantages of the new technique, **the optimal results for the patients are guaranteed!**

Thank you
for your attention!

