

UMANIZZAZIONE DELLE CURE ED EQUIPE MULTIPROFESSIONALI: *aspetti cruciali per un'assistenza sanitaria di alta qualità centrata sulla persona*

Chirurgia robotica: medicina lontano dal paziente?

Nazareno Suardi

Università di Brescia

S.C. Urologia, ASST Spedali Civili di Brescia

Sistema Socio Sanitario



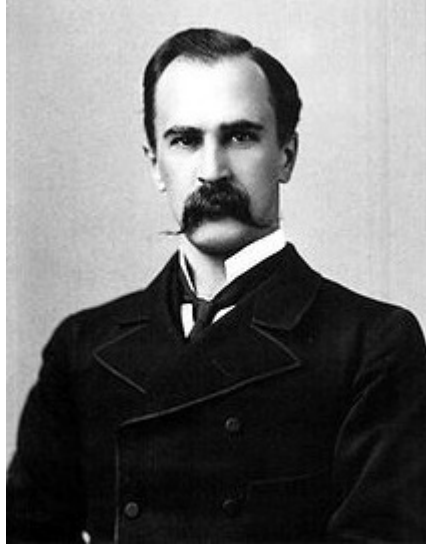
Regione
Lombardia

ASST Spedali Civili



UNIVERSITÀ
DEGLI STUDI
DI BRESCIA

Introduction



“Diseases that harm require treatments that harm less”

William Osler

In pursuit of this noble goal the urologists of the 20th century brought us great achievements in our field, but it has been **over the past 25 years**, in particular, that **the specialty of minimally invasive urology has become predominant**

...it started from here.

BJU International (2001), 87, 408–410

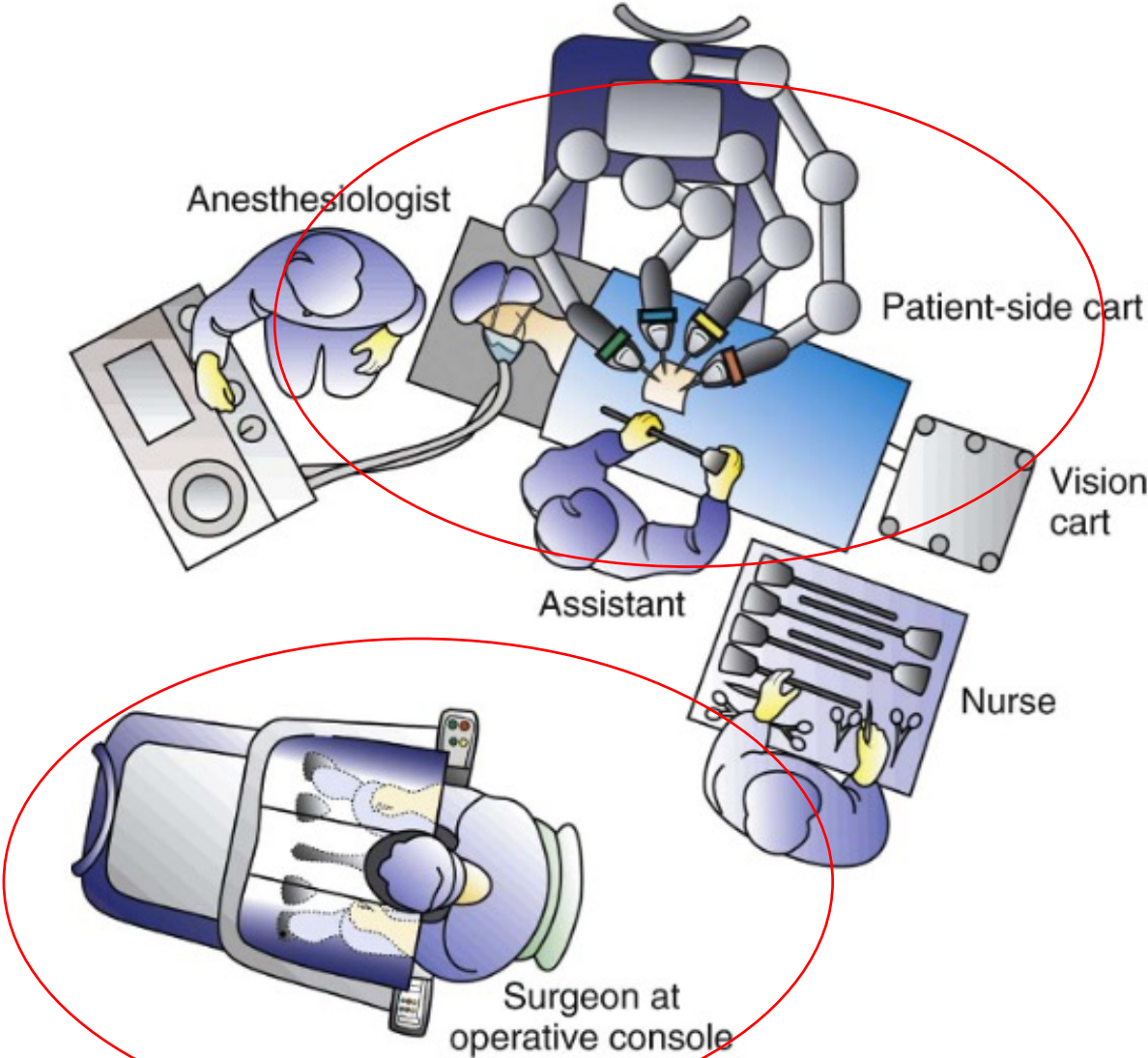
POINT OF TECHNIQUE

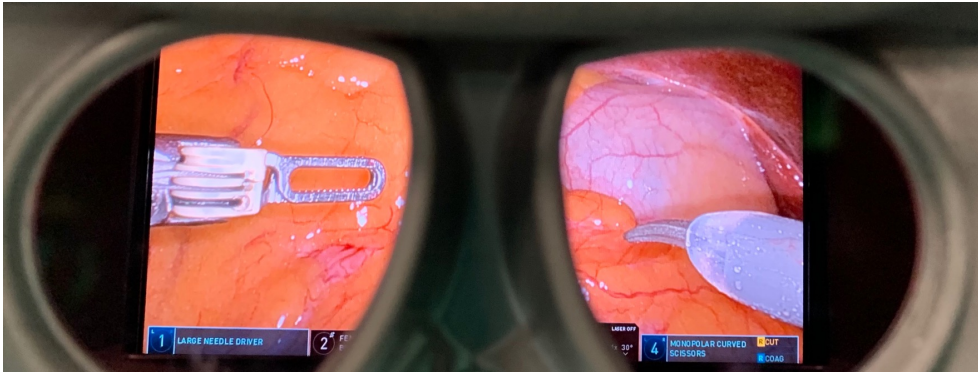
Robotically-assisted laparoscopic radical prostatectomy

J. BINDER and W. KRAMER

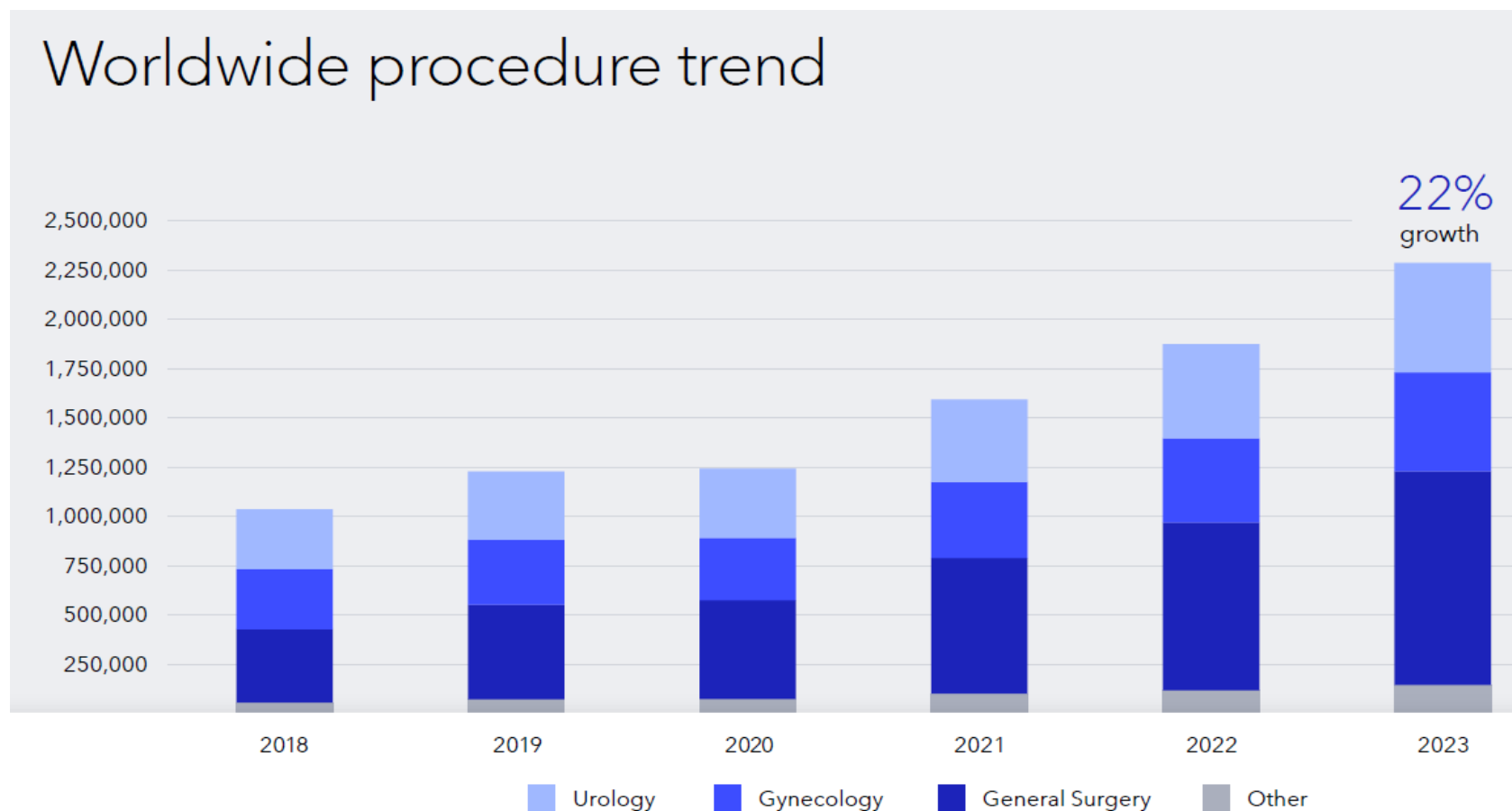
Department of Urology and Paediatric Urology, University Hospital, Johann-Wolfgang-Goethe University, Frankfurt am Main, Germany

Placement of the Operative Team for Robotic Procedures





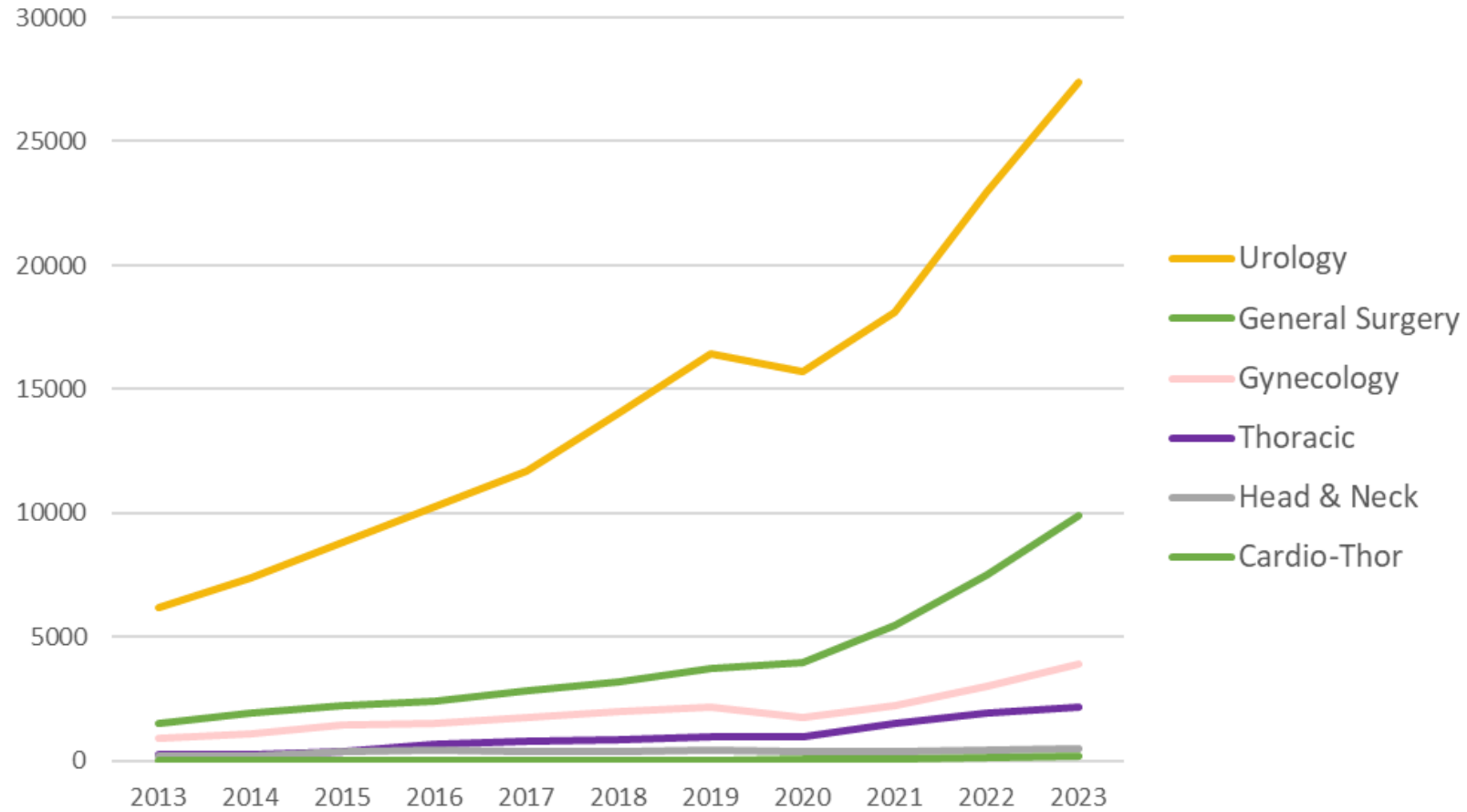
Il sistema robotico da Vinci - Procedure robotiche da Vinci nel mondo*



a partire dall'anno 1999, nel mondo sono state eseguite oltre 14.200.000 di procedure da Vinci di cui oltre 2.200.000 nel 2023

Source: Intuitive 2023 earnings estimate.

Robotic procedures in Italy from 2013 to 2023



ASST Spedali Civili di Brescia

Urologia

Ginecologia

Chirurgia
Generale

Chirurgia
toracica

Chirurgia
pediatrica

Cardiochirurgia

Potential advantages for the surgeon: 3-D Vision

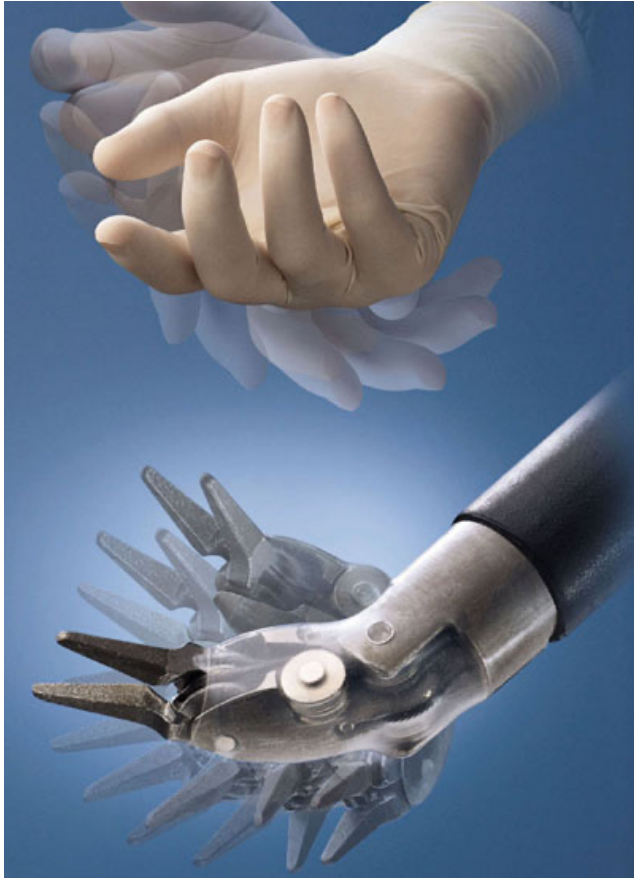


Twin optical paths, fused to give 3-D image



taking **surgical precision** and technique
beyond the limits of the **human hand**™

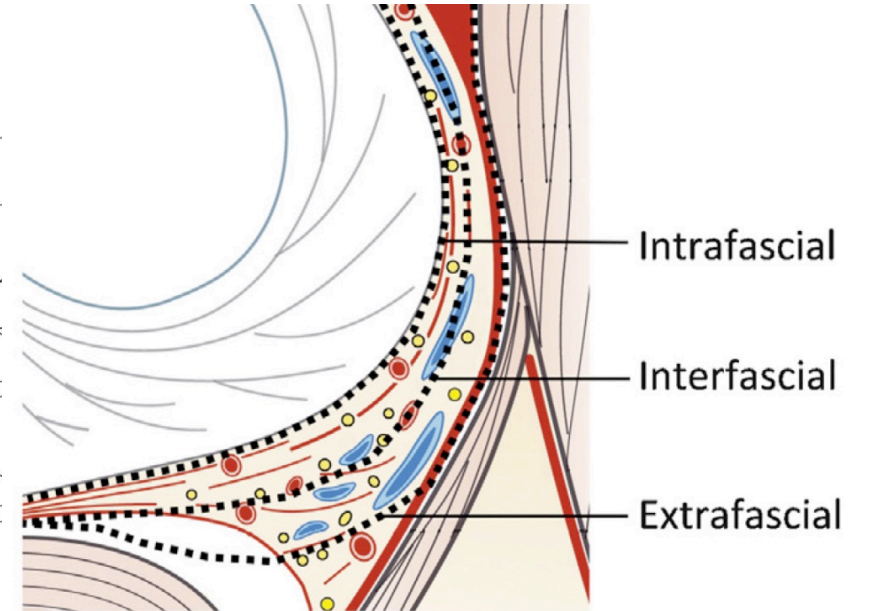
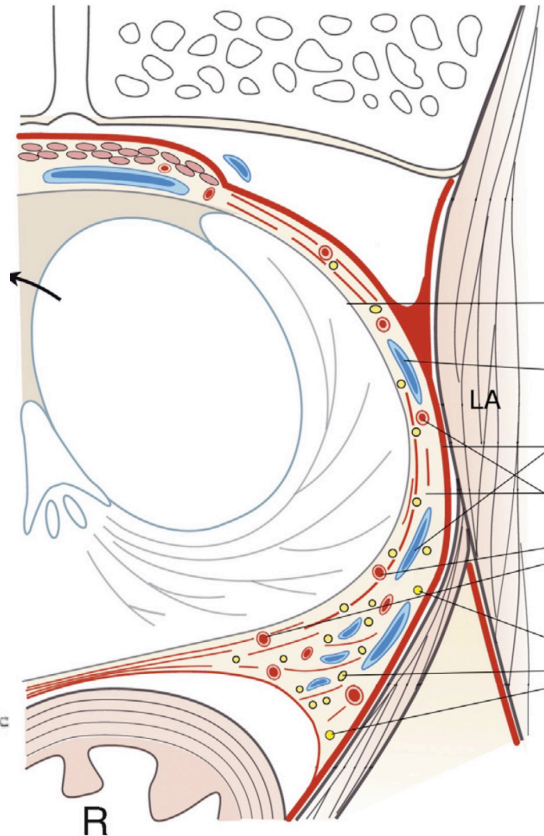
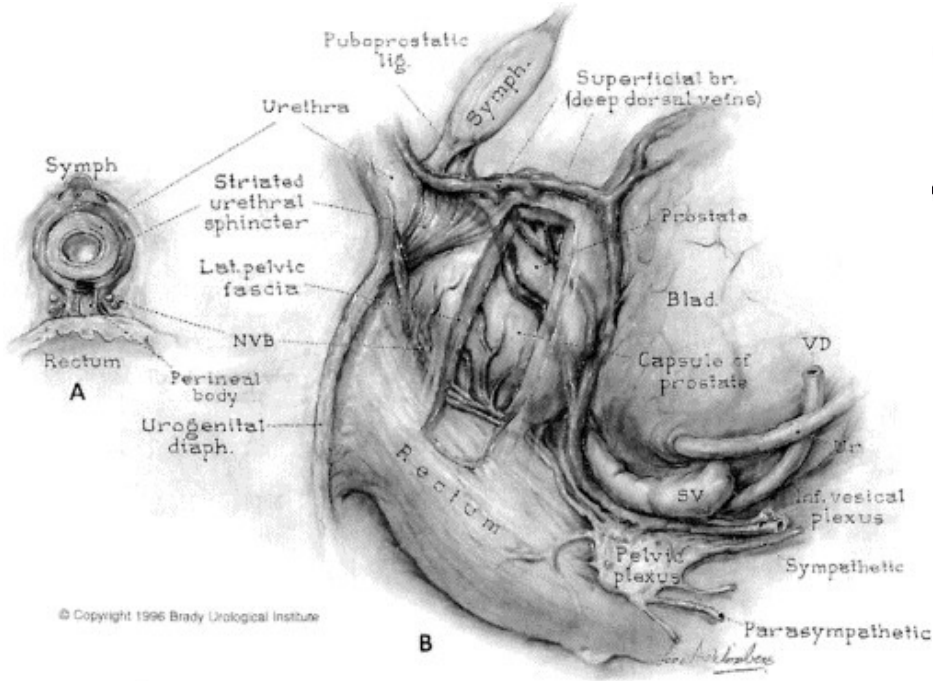
Potential advantages for the surgeon: laparoscopic instruments with 7 degrees of freedom



Endowrist Instrument



The Introduction of Novel Technologies Resulted into a Better Understanding of the Surgical Anatomy



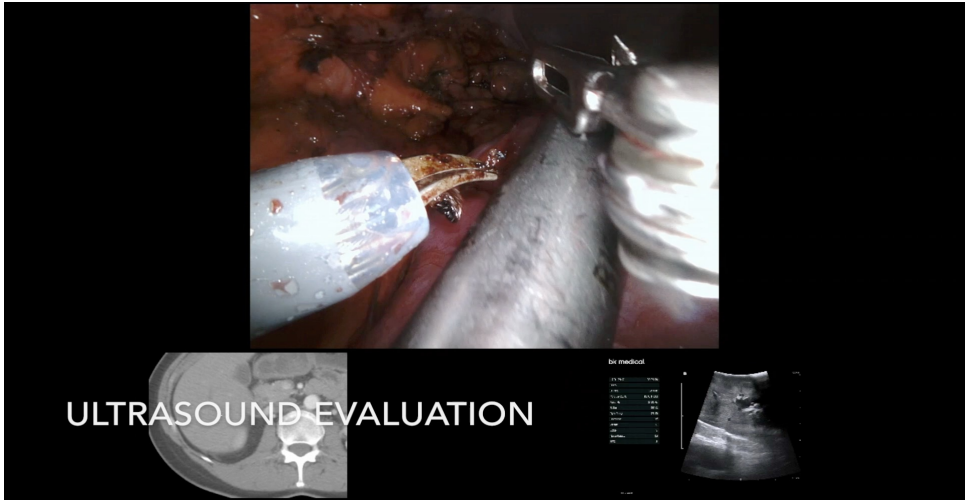
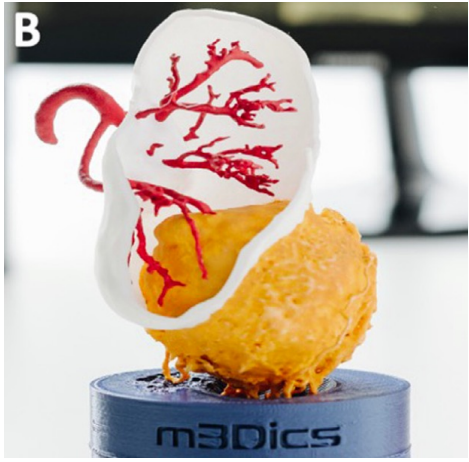


Image-guided surgery

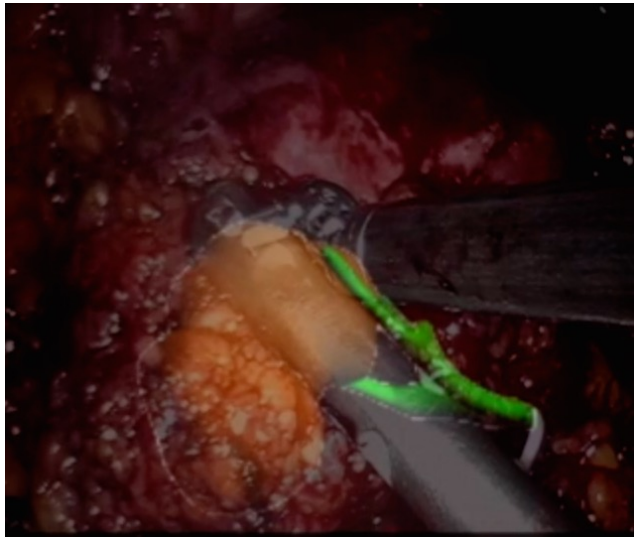
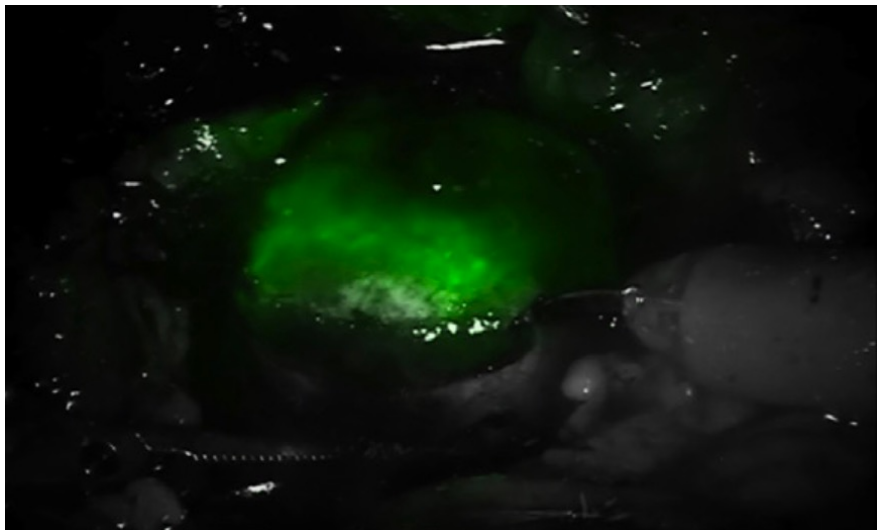
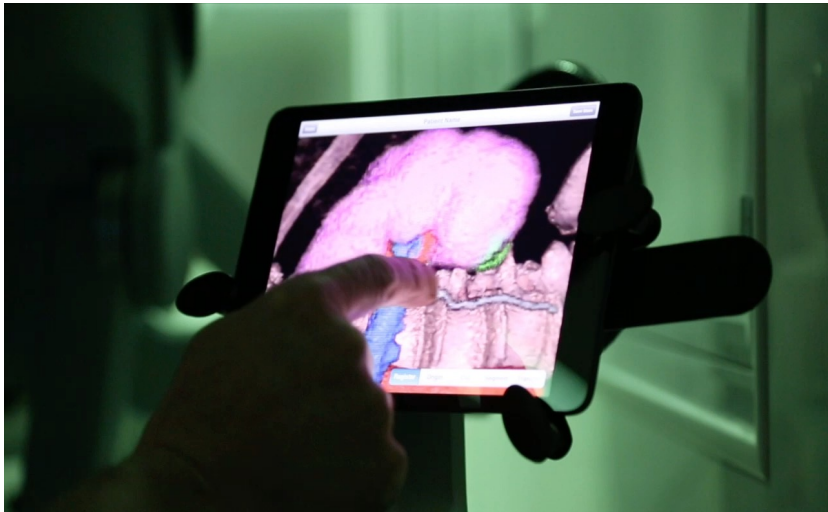
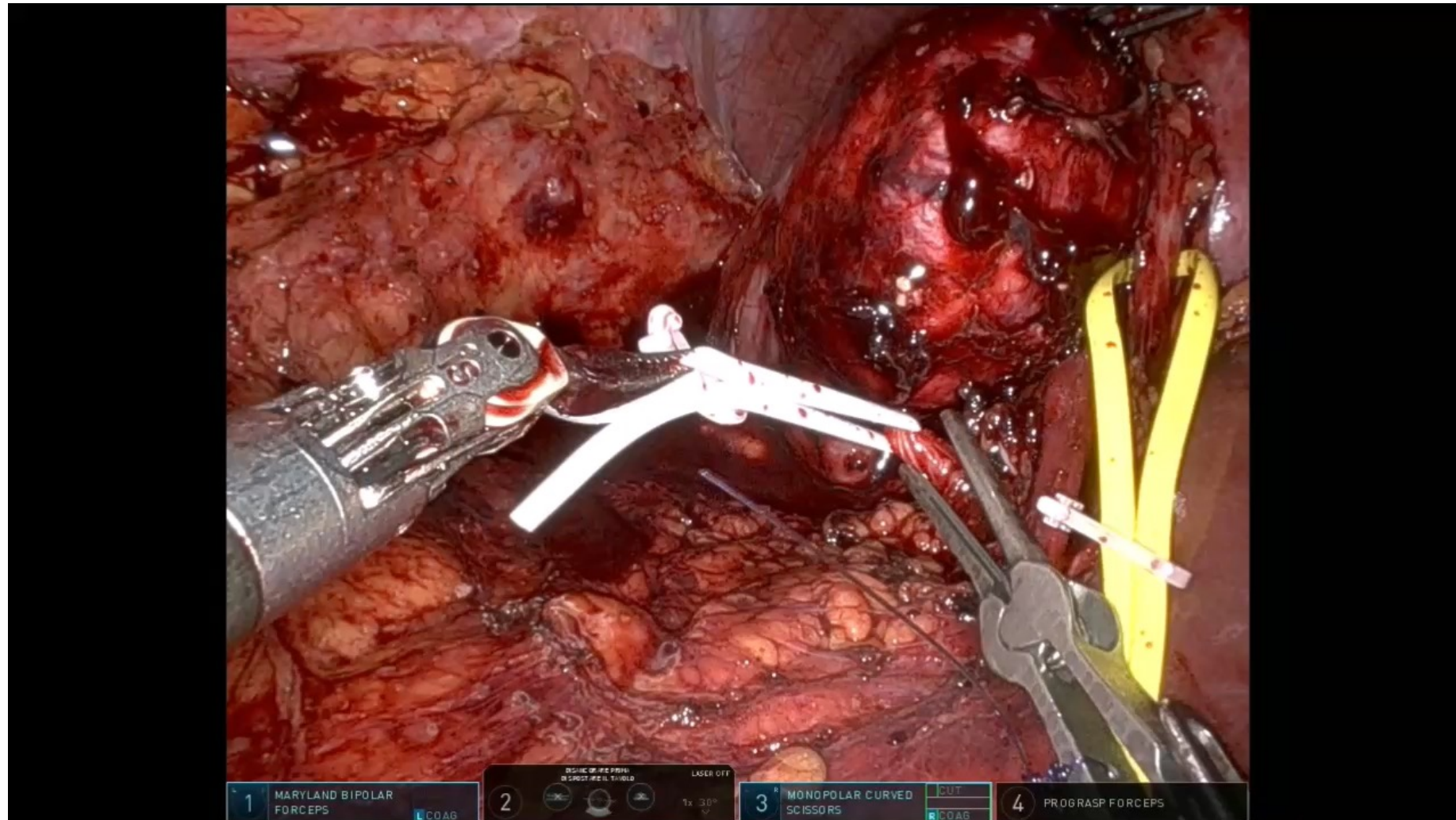
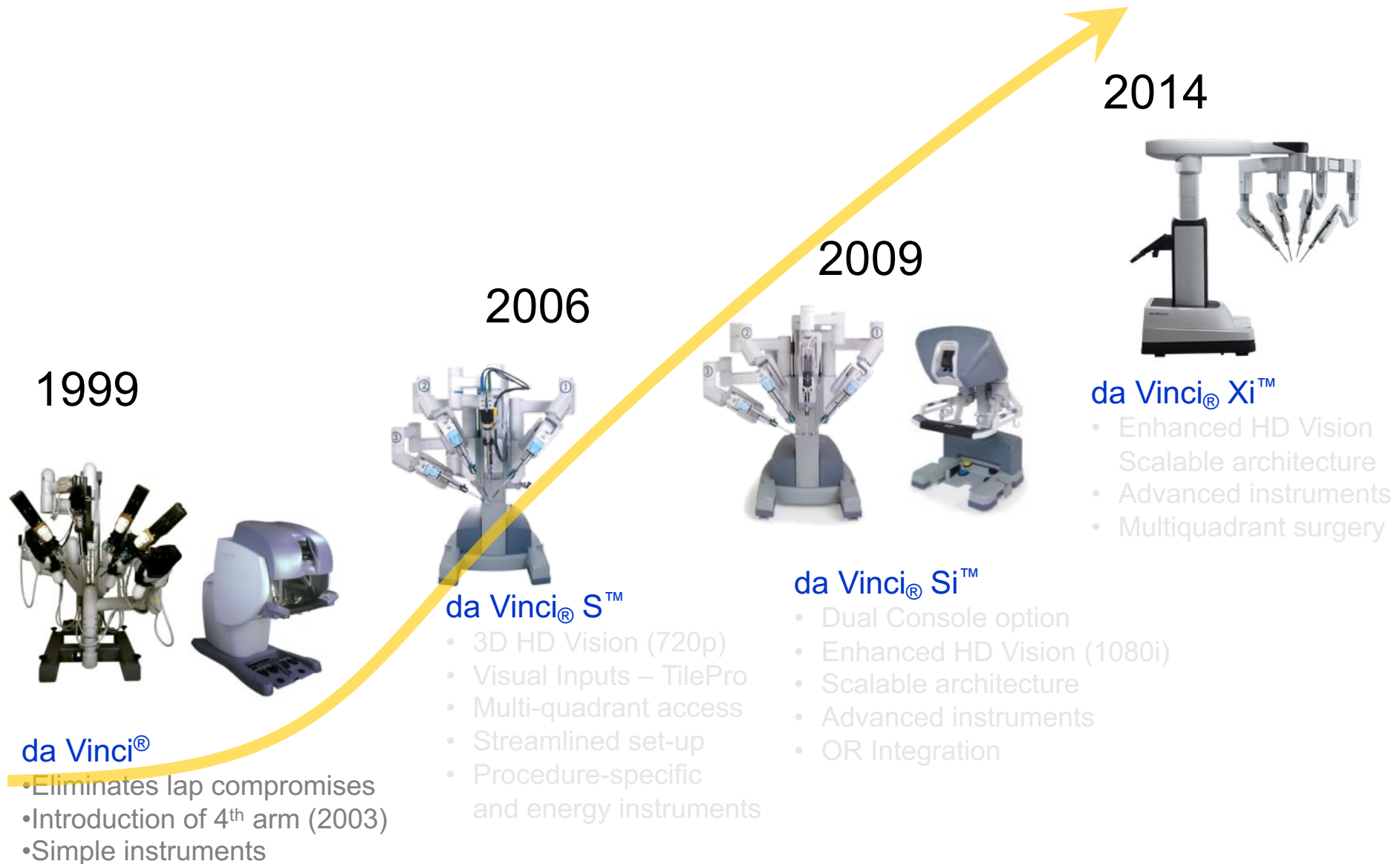


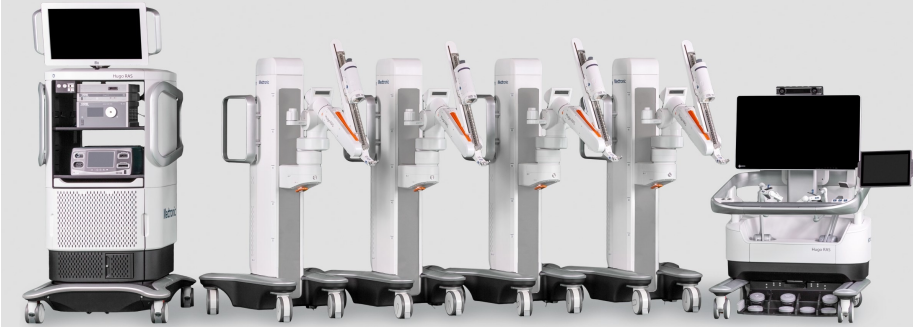
Image-guided surgery:



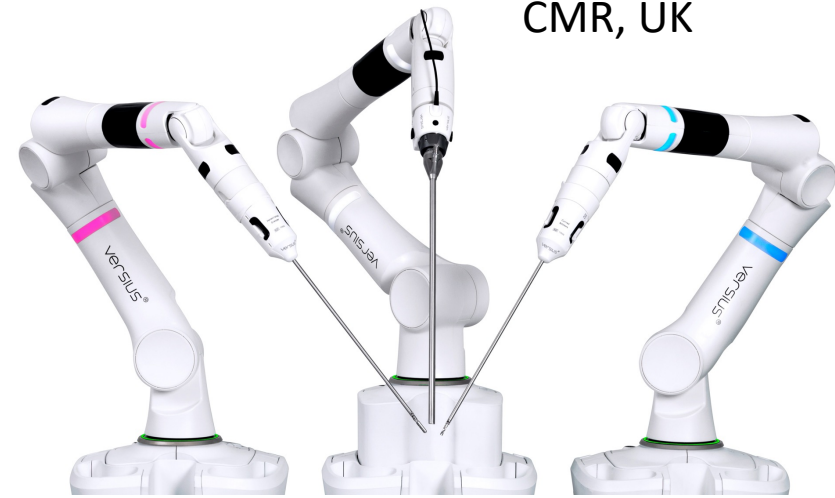
Evolution of the Robotic Technology



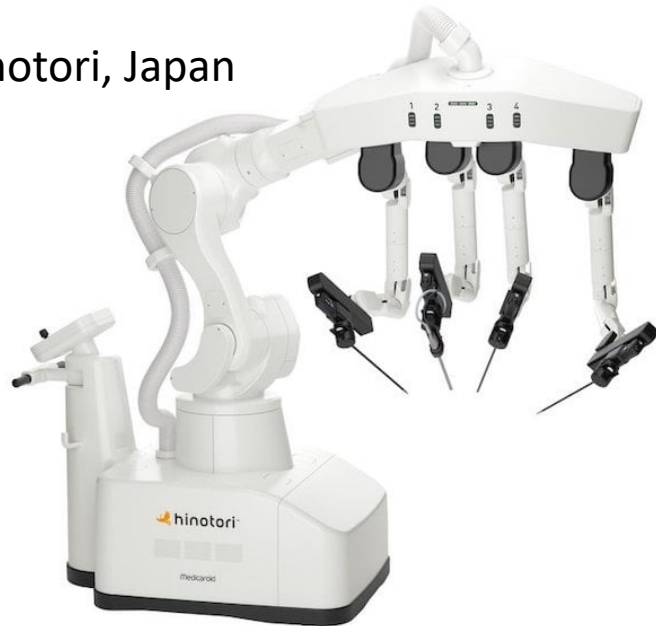
Medtronic, USA



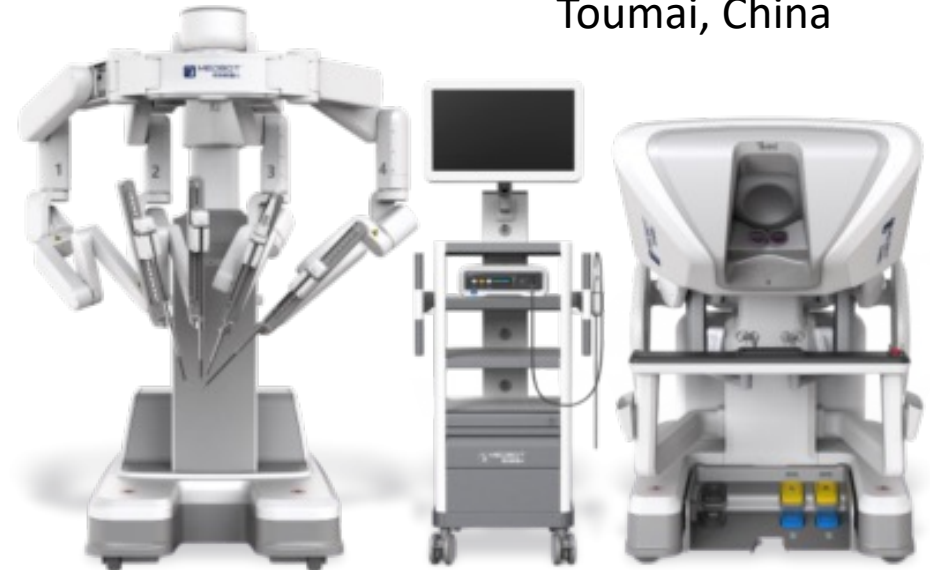
CMR, UK



Hinotori, Japan

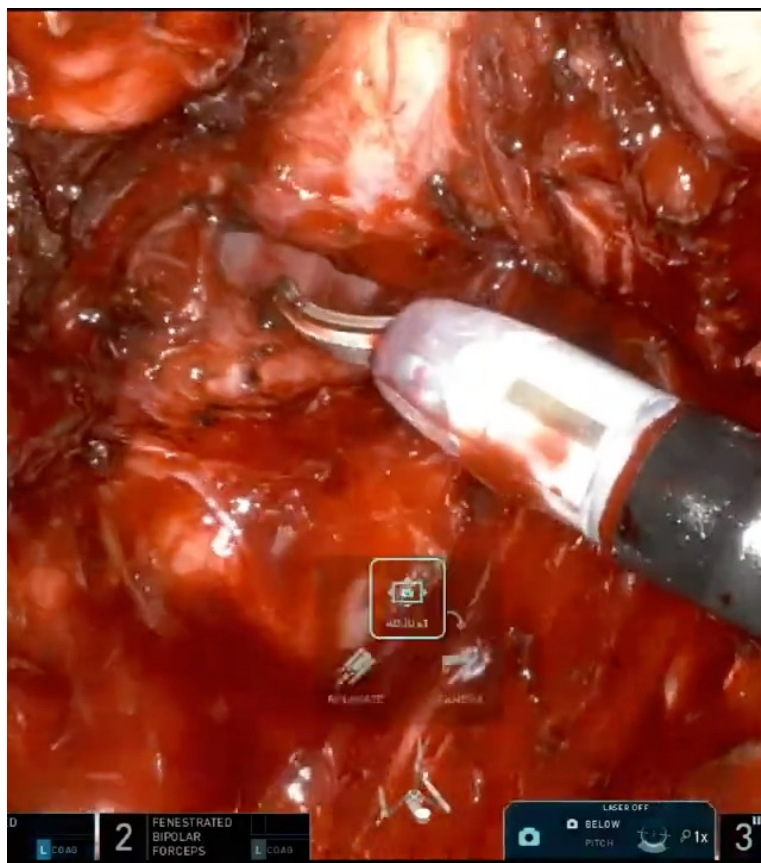


Toumai, China

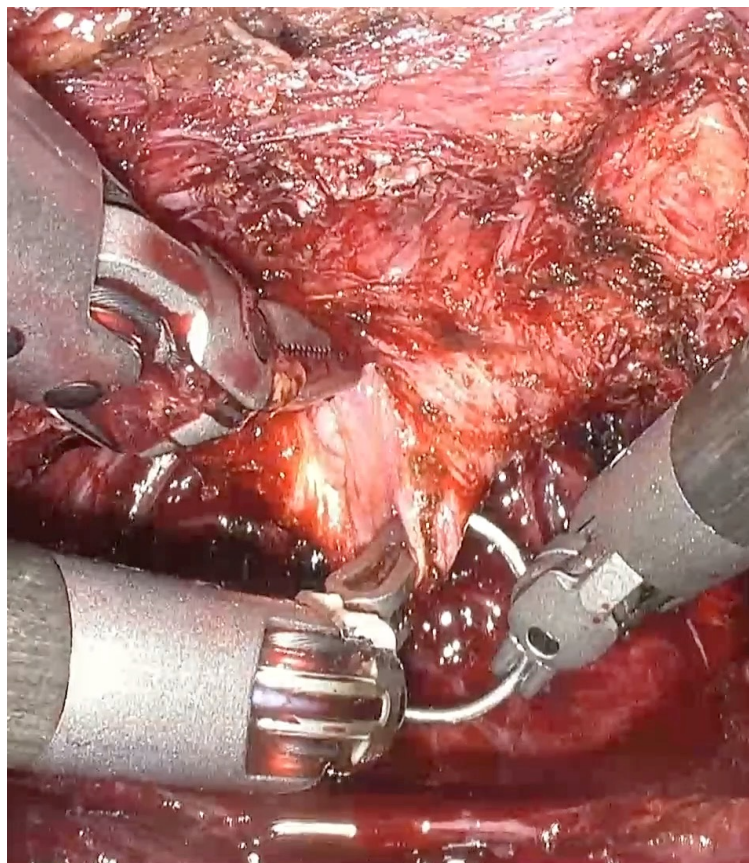


Novel platforms

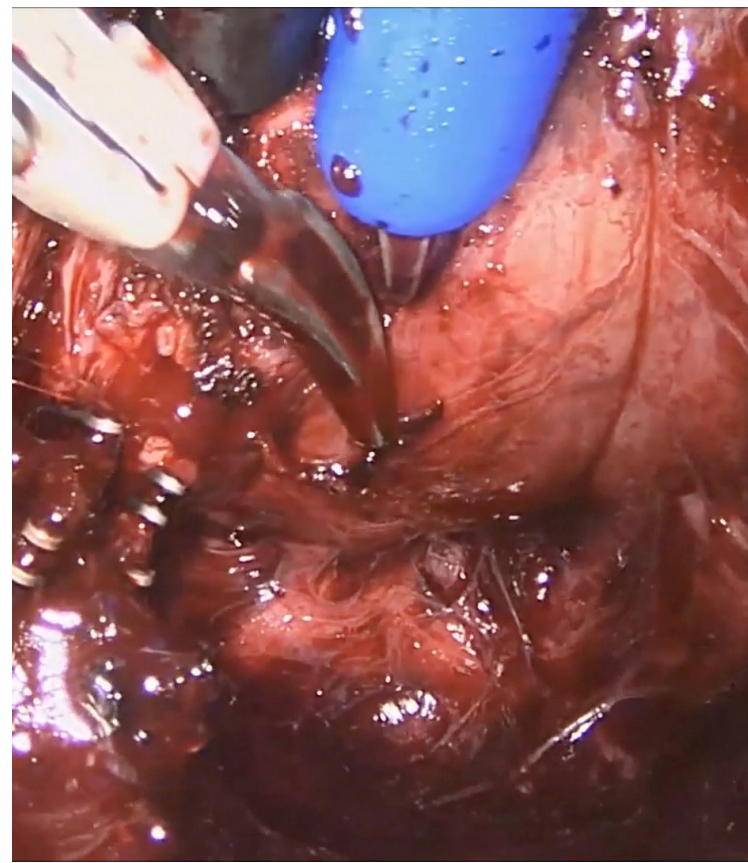
DaVinci SP



Hugo-RAS



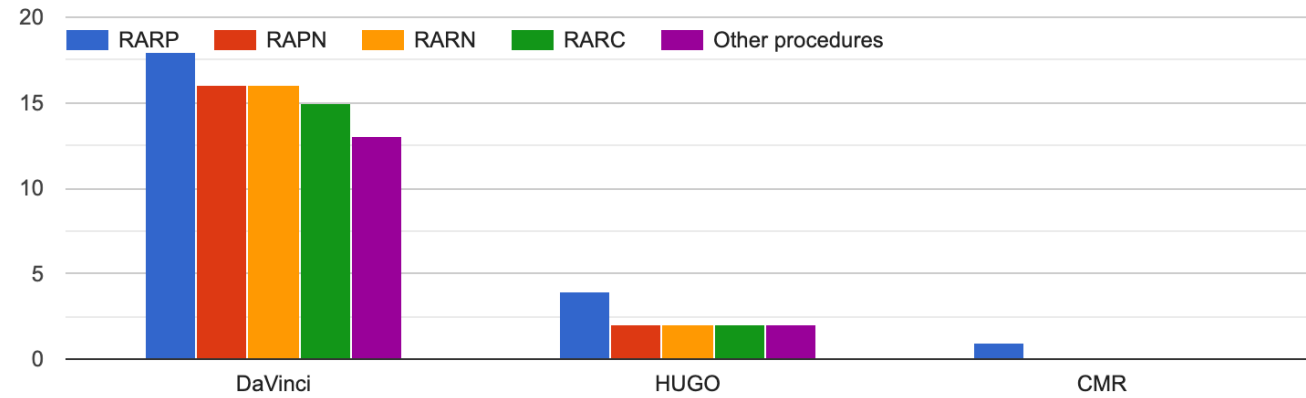
Versius CMR



In the world

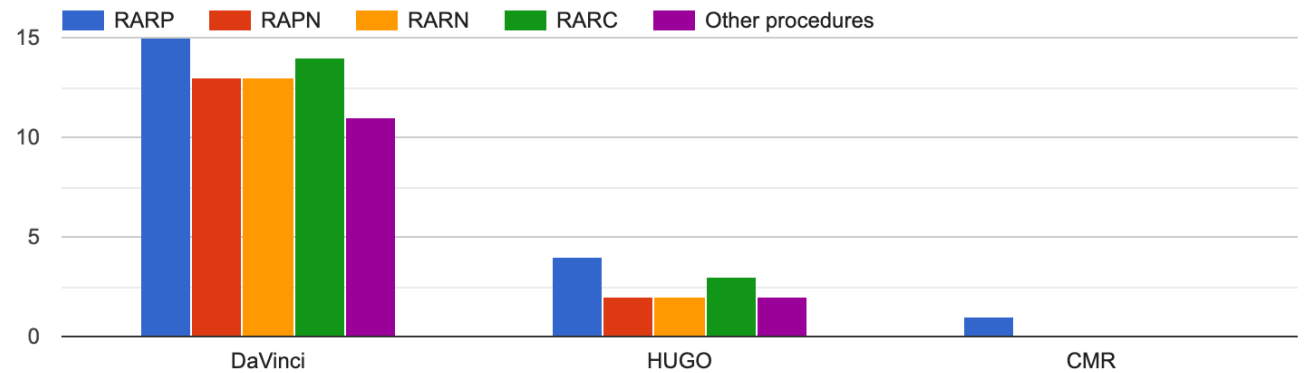
Q5 Which of the following interventions were performed with the robots listed below?

2022

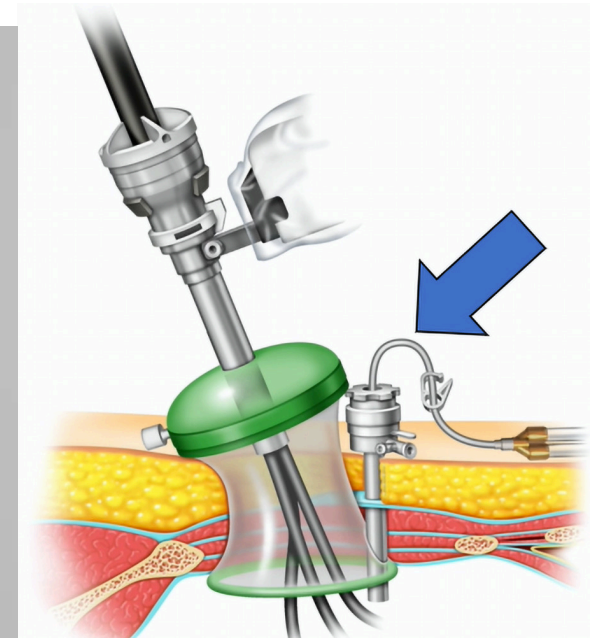


2023

(1 Jan – 30 Jun)



Chirurgia robotica single-port



Telesurgery?

available at www.sciencedirect.com
journal homepage: www.eu-openscience.europanurology.com



From Lab to Clinic

Expanding Surgical Frontiers Across the Pacific Ocean: Insights from the First Telesurgery Procedures Connecting Orlando with Shanghai in Animal Models

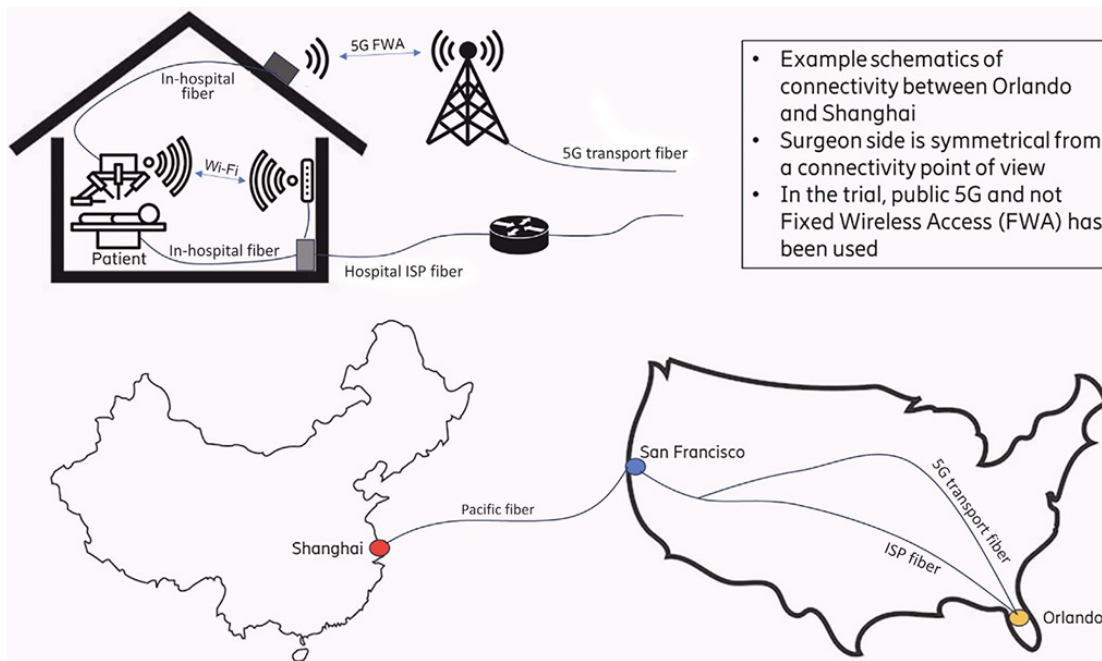


Fig. 2 – Schematic connectivity between Orlando and Shanghai with 5G and fiber illustration. FWA = fixed wireless access; ISP = Internet service provider.

ERUS Congress 2024, Bordeaux

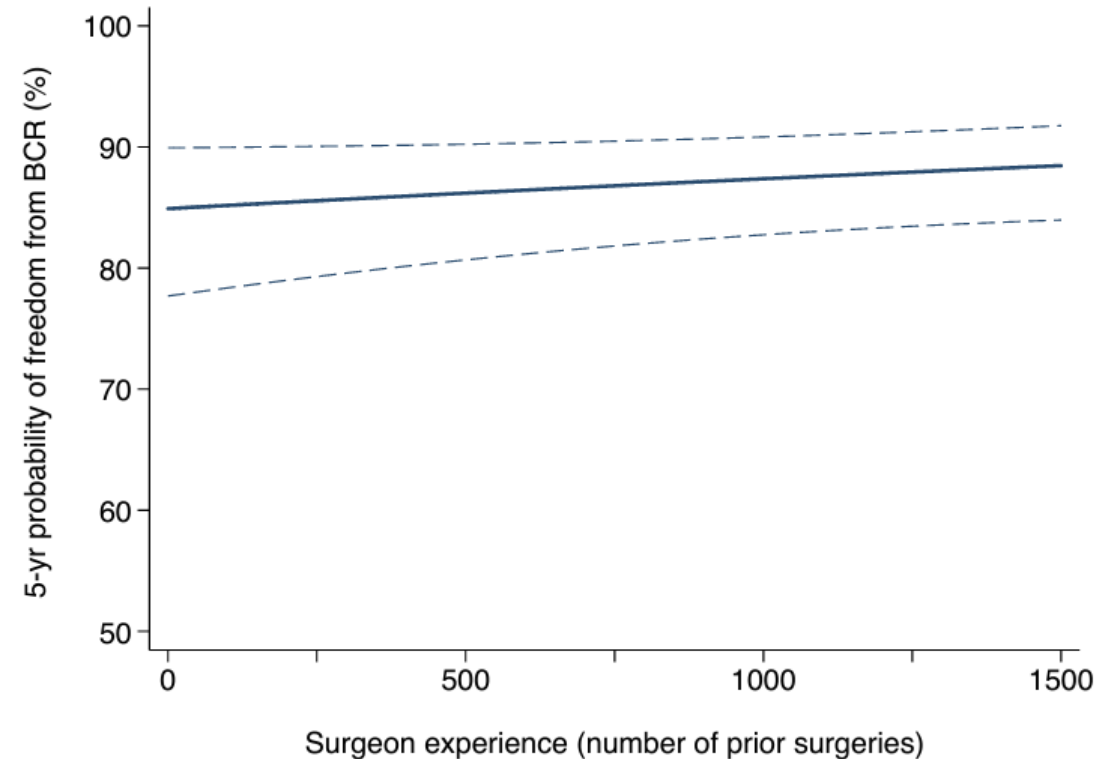
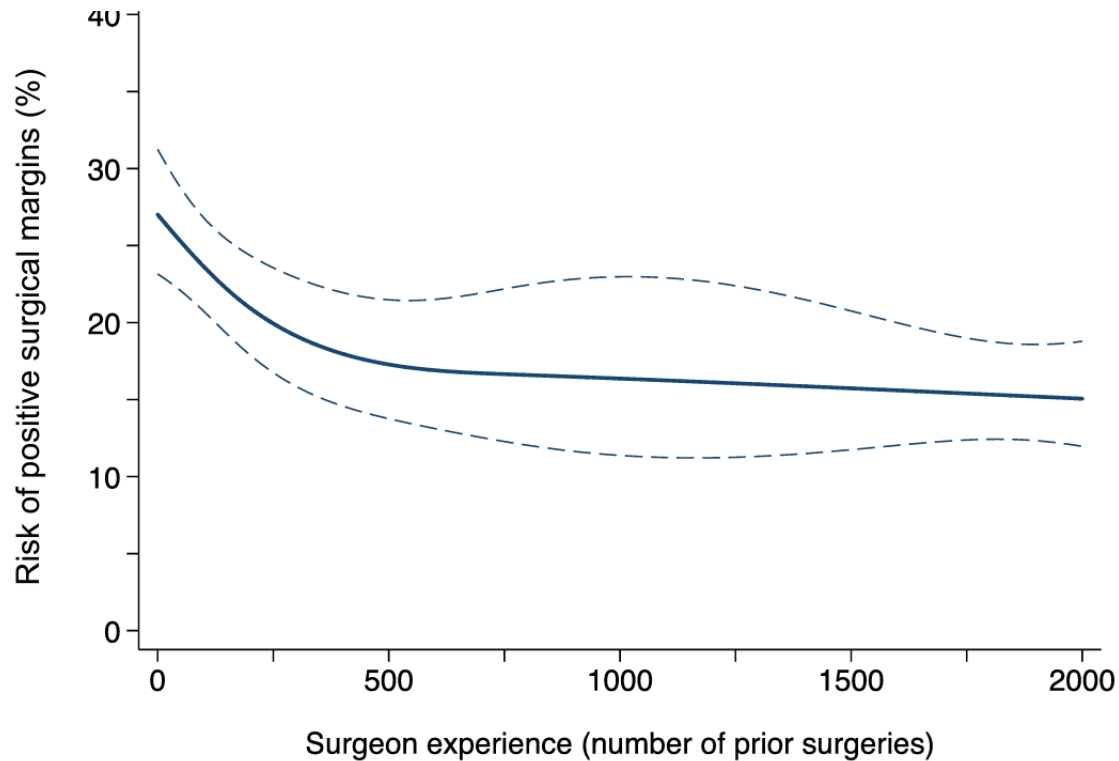


**A fool with a tool
is still a fool!**



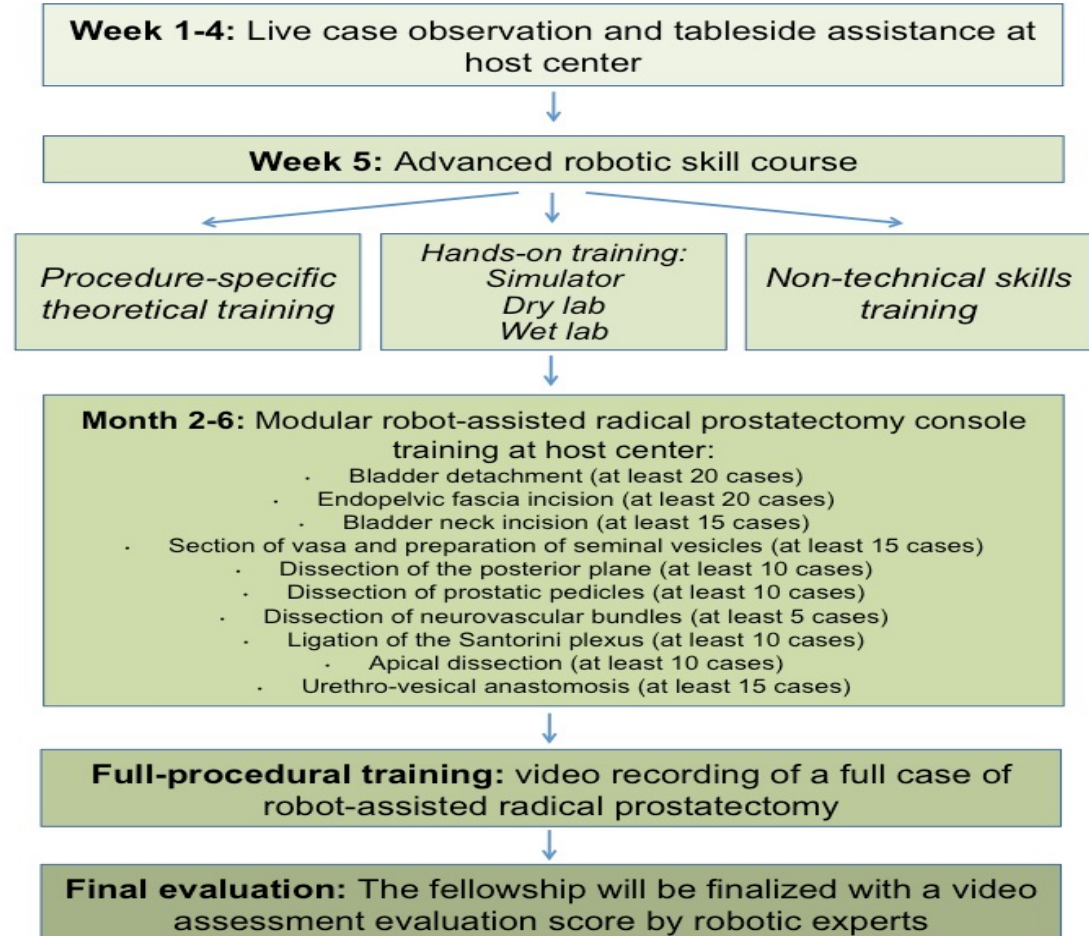
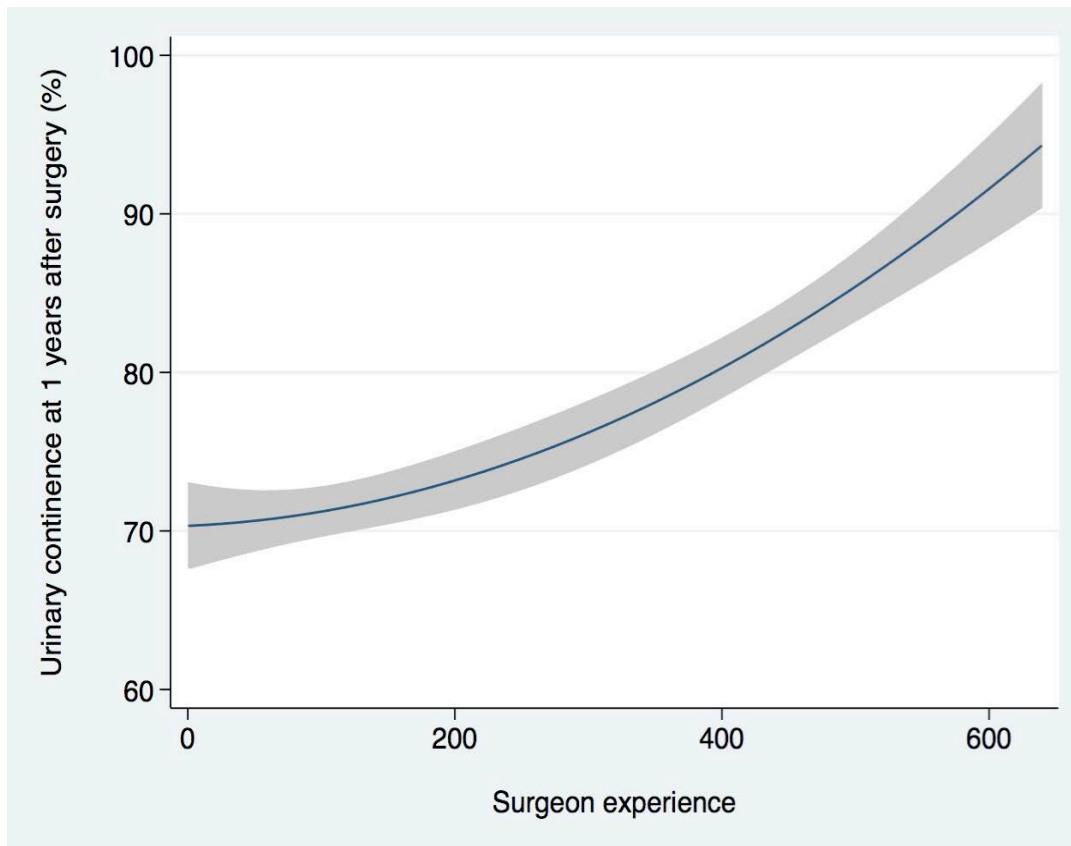
Grady Booch

Learning curve and positive surgical margins



Training, training, training!!!!

Full urinary continence recovery according to the learning curve



New possibilities for training:

- Video analysis
- Simulation
- Standardized metrics
- Release of certificates
- Telementoring



IRCAD, Strasbourg (FR)



ORSI, Melle (BE)

Patients' expectations from surgery:

1. Guarigione dalla malattia (tumorale o funzionale)
2. Evitare effetti collaterali peri-operatori
3. Ritorno «integro» alle condizione pre-operatoria
4. Convalescenza rapida e ripresa delle normali attività

Tumore genito-urinari: risultati oncologici

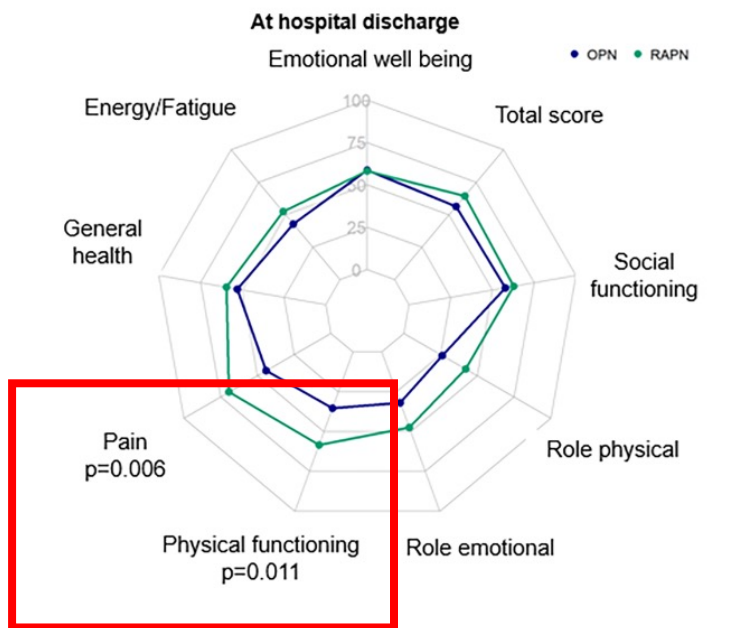
TUMORE DELLA PROSTATA	
MARGINI POSITIVI	ROBOT=OPEN
RECIDIVA BIOCHIMICA	ROBOT=OPEN
PROGRESSIONE METASTATICA	ROBOT=OPEN
SOPRAVVIVENZA	N.D.
TUMORE DELLA VESCICA	
MARGINI POSITIVI	ROBOT=OPEN
RECIDIVA DI MALATTIA	ROBOT=OPEN
SOPRAVVIVENZA	ROBOT=OPEN
TUMORE DEL RENE	
MARGINI POSITIVI	ROBOT=OPEN
RECIDIVA DI MALATTIA	ROBOT=OPEN
SOPRAVVIVENZA	N.D.

Risultati da studi randomizzati - RAPN

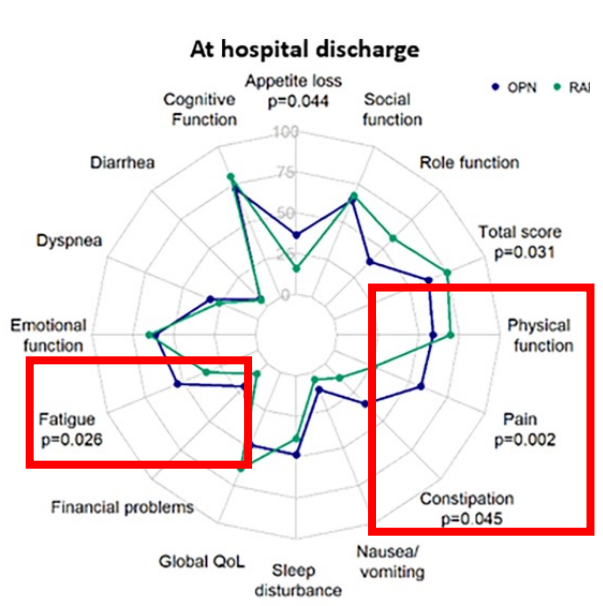
Quality-of-life outcomes of the ROBOtic-assisted versus Conventional Open Partial nephrectomy (ROBOCOP) II trial



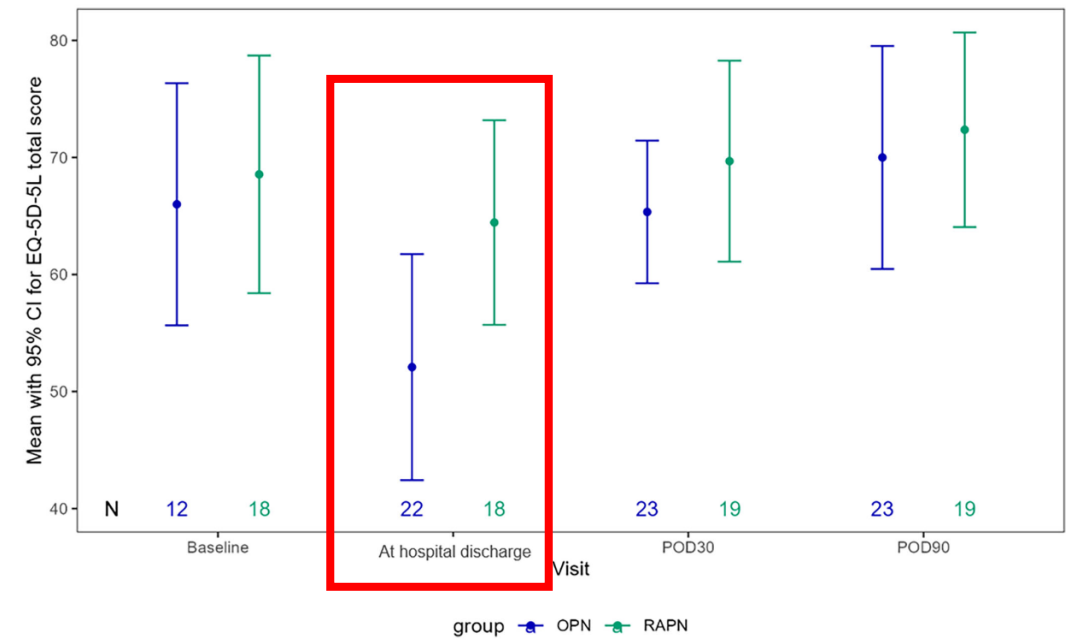
Kidney Disease Quality ofLife-Short Form



EORTC QLQ-C30



EuroQoL five Dimensions



Risultati da studi randomizzati - RARP

Robot-assisted laparoscopic prostatectomy versus open radical retropubic prostatectomy: early outcomes from a randomised controlled phase 3 study



John W Yaxley, Geoffrey D Coughlin, Suzanne K Chambers, Stefano Occhipinti, Hema Samaratunga, Leah Zajdlewicz, Nigel Duglison, Rob Carter, Scott Williams, Diane J Payton, Joanna Perry-Keene, Martin F Lavin, Robert A Gardiner

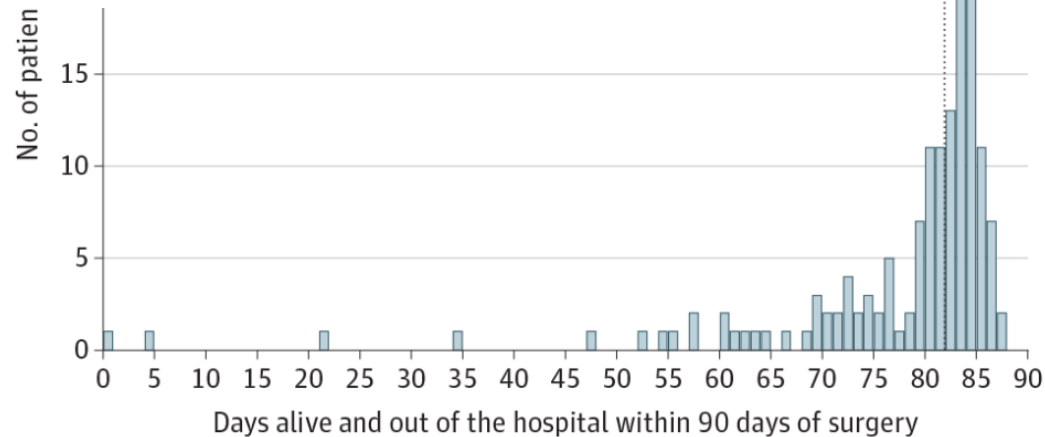
	Total (n=308)	Radical retropubic prostatectomy (n=151)	Robot-assisted laparoscopic prostatectomy (n=157)	p value
Perioperative outcomes				
Operative duration				
Surgery, min	217.97 (47.63)	234.34 (37.07)	202.03 (51.36)	<0.0001
Recovery, min*	107.54 (111.64)	107.12 (146.63)	107.94 (61.18)	0.95
Operating room, min	263.00 (49.79)	280.37 (36.36)	246.08 (55.12)	<0.0001
Intraoperative adverse event	15 (5%)	12 (8%)	3 (2%)	0.02
Estimated total blood loss, mL	886.54 (645.62)	1338.14 (591.47)	443.74 (294.29)	<0.0001
Blood transfusions				
Non-autologous intraoperative	0	0	0	..
Non-autologous postoperative	7 (2%)	6 (4%)	1 (1%)	0.12
Admitted to intensive care unit				
Planned	6 (2%)	3 (1%)	3 (2%)	..
Unplanned	5 (2%)	5 (3%)	0	..
Readmission	20 (7%)	12 (8%)	8 (5%)	0.32
Indwelling catheter, days	8.21 (2.47)	8.42 (2.28)	8.21 (2.64)	0.50
Length of hospital stay, days	2.39 (2.30)	3.27 (1.49)	1.55 (2.61)	<0.0001
Postoperative complications†	20, 24 (6%)	14, 17 (9%)	6, 7 (4%)	0.05

Risultati da studi randomizzati - RARC

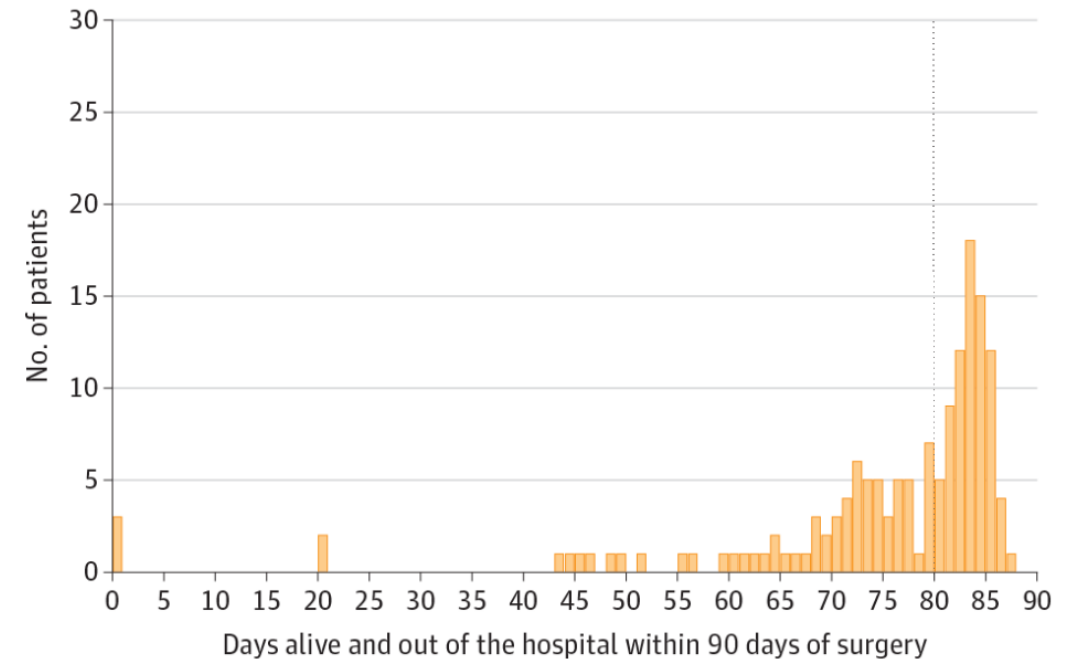
May 15, 2022

Effect of Robot-Assisted Radical Cystectomy With Intracorporeal Urinary Diversion vs Open Radical Cystectomy on 90-Day Morbidity and Mortality Among Patients With Bladder Cancer

A Randomized Clinical Trial



B Open radical cystectomy



- -11% wound-related complications
- 7% vs. 12% transfusions in RARC
- 1.9% vs. 8.3% in thromboembolic events

Conclusions:

Chirurgia robotica:
medicina lontano dal paziente

....ma sicuramente più vicina alle
esigenze del paziente



Frank De Nota per SIU, 2023