




Service d'Urologie



ASSISTANCE
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HÔPITAUX
DE PARIS

 urologie-mondor.fr

Prostatectomie radicale assistée par robot

Pr Alexandre de la Taille
APHP, France



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DE PARIS

Inserm

 Institut national
de la santé et de la recherche médicale


UPEC
UNIVERSITÉ PARIS-EST CRÉTEIL

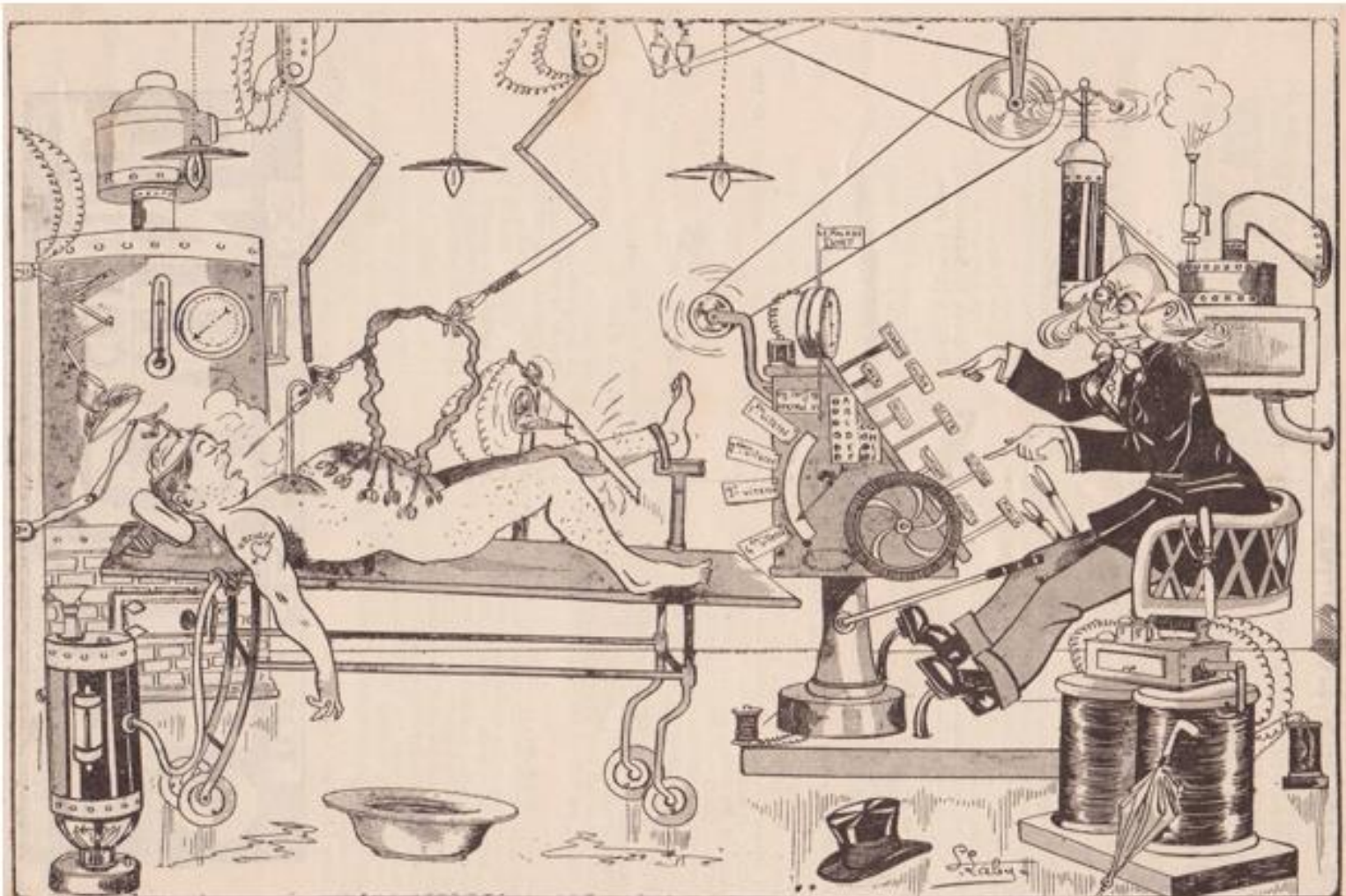
LE RICTUS

JUIN
1921

JOURNAL HUMORISTIQUE MENSUEL

Ad usum Medicorum

Mieux est de Ris que de Larmes écrire.
RAURELAIN.



UNE SALLE D'OPÉRATIONS EN L'AN 2000

(Extrait de *Médecins et Clients.*)

Introduction

- 1980: « Radical surgery for prostatic cancer », PC Walsh
- 2019 : 1300 robots en France ...

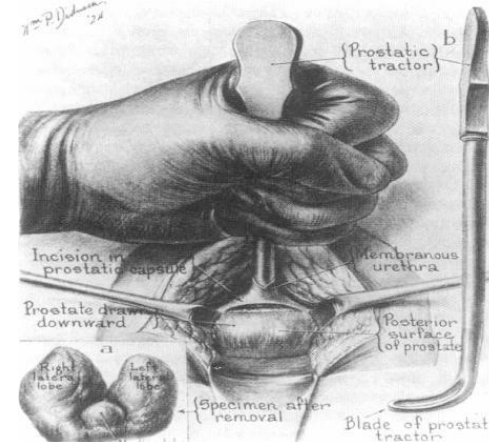


Tableau 1. Estimation du nombre d'actes réalisés pour la vésiculoprostatectomie par an en France et 2014

	2008	2009	2010	2011	2012	2013	2014*
Vésiculoprostatectomie totale par laparotomie	14 643	13 412	11 550	10 854	8 407	7 075	2 410
Vésiculoprostatectomie totale par cœlioscopie	94 37	10 140	10 485	12 646	11 357	10 732	4 010
Dont vésiculoprostatectomie assistée par robot chirurgical**	1 500	2 238	3 608	5 727	6 299	6 055	2 294
TOTAL	24 080	23 552	22 035	23 500	19 764	17 807	6 420

*Pour l'année 2014, activité de janvier à avril

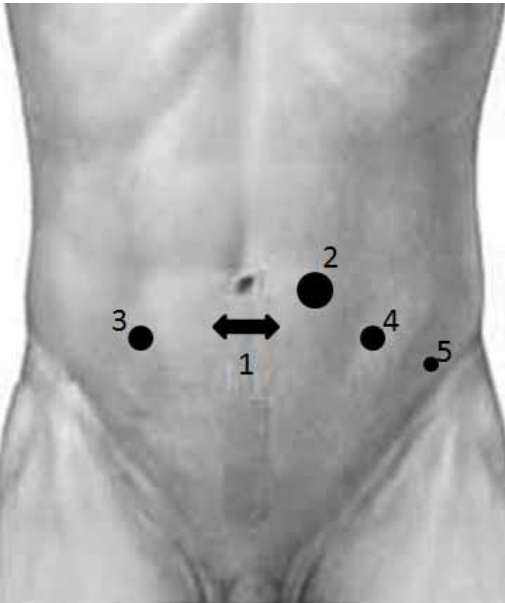
**Source : Intuitive Surgical Inc.

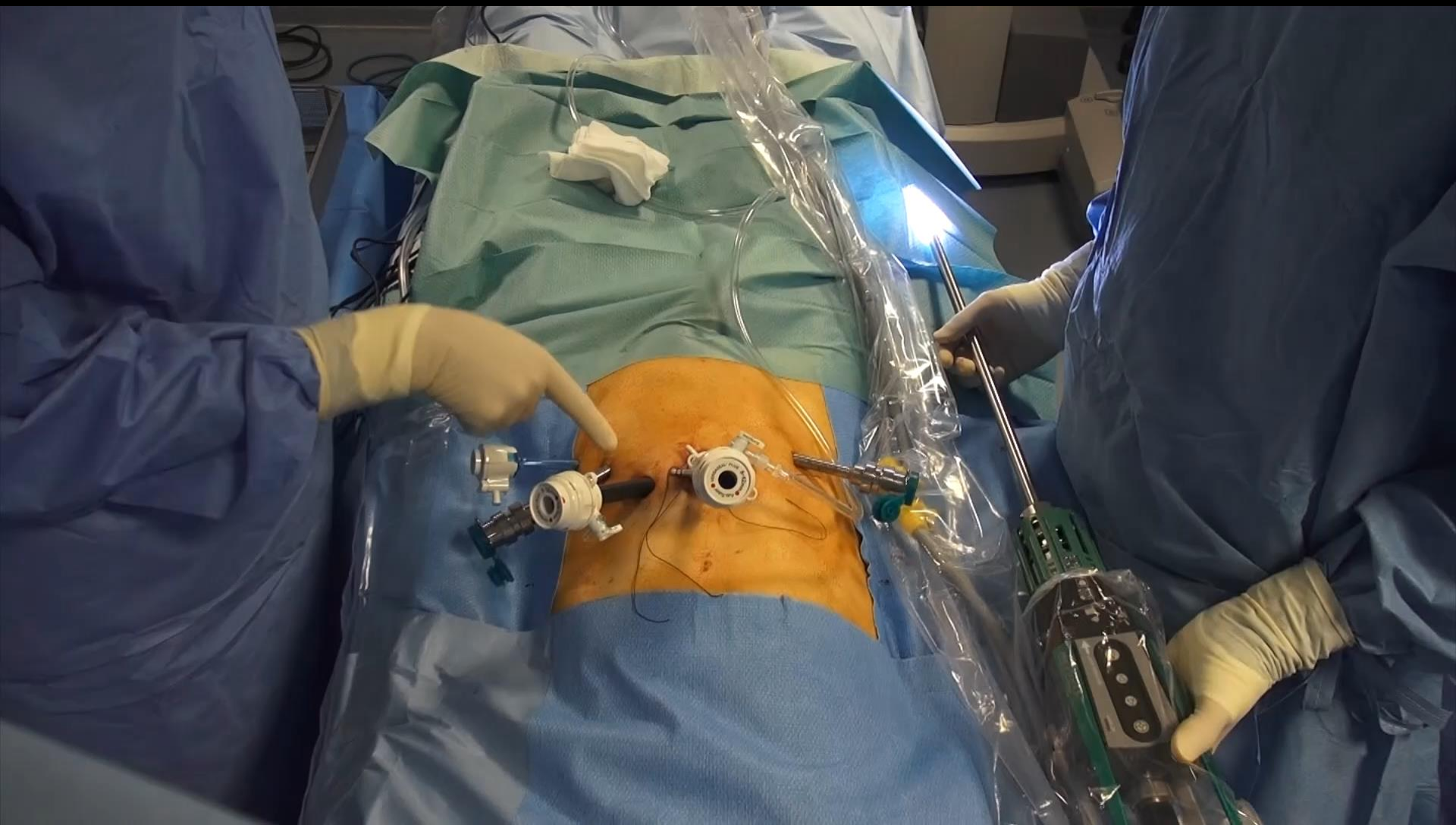
Avantages / Inconvénients

- En plus
 - Ergonomie / 3D / Mini invasif
 - Perte de sang limitée
 - Durée d'hospitalisation réduite / ambulatoire (61/19 163 en 2017)
 - Contrôle carcinologique équivalent
 - Retour plus rapide de la continence / érections (?)
- En moins
 - Cout
 - Expérience
 - Pas de retour de force

Technique opératoire

Position trocarts





Et demain ?

Prometheus : robot chirurgical autonome

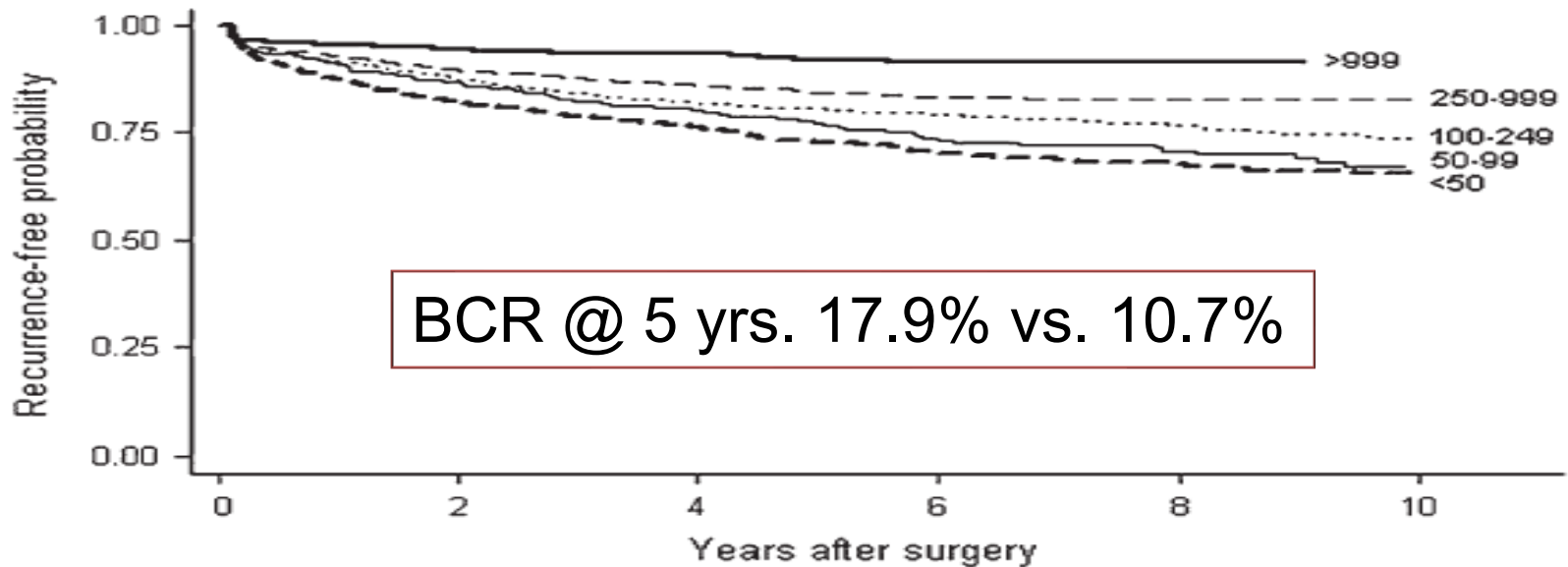


Le plus important : Qui vous opère ?

ARTICLE

The Surgical Learning Curve for Prostate Cancer Control After Radical Prostatectomy

Andrew J. Vickers, Fernando J. Bianco, Angel M. Serio, James A. Eastham, Deborah Schrag, Eric A. Klein, Alwyn M. Reuther, Michael W. Kattan, J. Edson Pontes, Peter T. Scardino



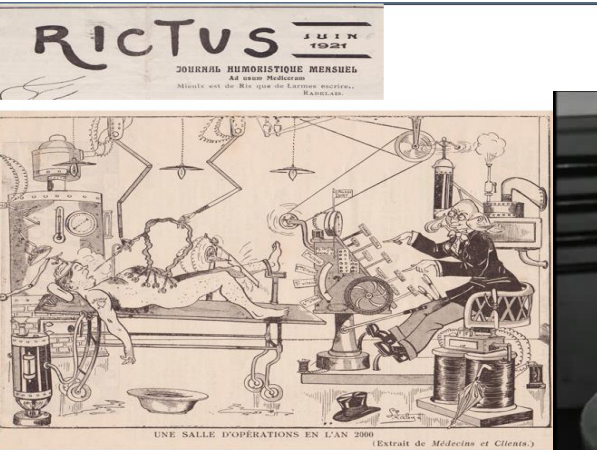
Number at risk:

—	1152	639	319	79	5	0
- - - -	2940	2101	1381	836	407	146
.....	1575	1175	766	562	420	215
- . - . - .	696	437	279	157	89	63
- - - - -	1402	896	644	416	254	123

JUCCI 2007

Que dire aux patients ?

- Les résultats dépendent avant tout
 - du cancer à traiter +++
 - du chirurgien +++
- Dans ces centres experts, le robot
 - Même taux de guérison que les autres techniques
 - Durée de séjour plus faible
 - Moins de transfusion - Moins de douleurs post op
 - Récupération plus rapide des érections et de la continence



CONCLUSION

- Nothing can stop progress... it stops by itself
(dixit Alexandre Vialatte)
 - Dedicated team
 - Hospital
 - High cost technology
- Technology in progress...

Conclusion

- Indication
- Sélection des patients
- Acte chirurgical dépendant du stade
- Place du curage surtout étendu
- Discussion en RCP des traitements adjuvants

Questions?

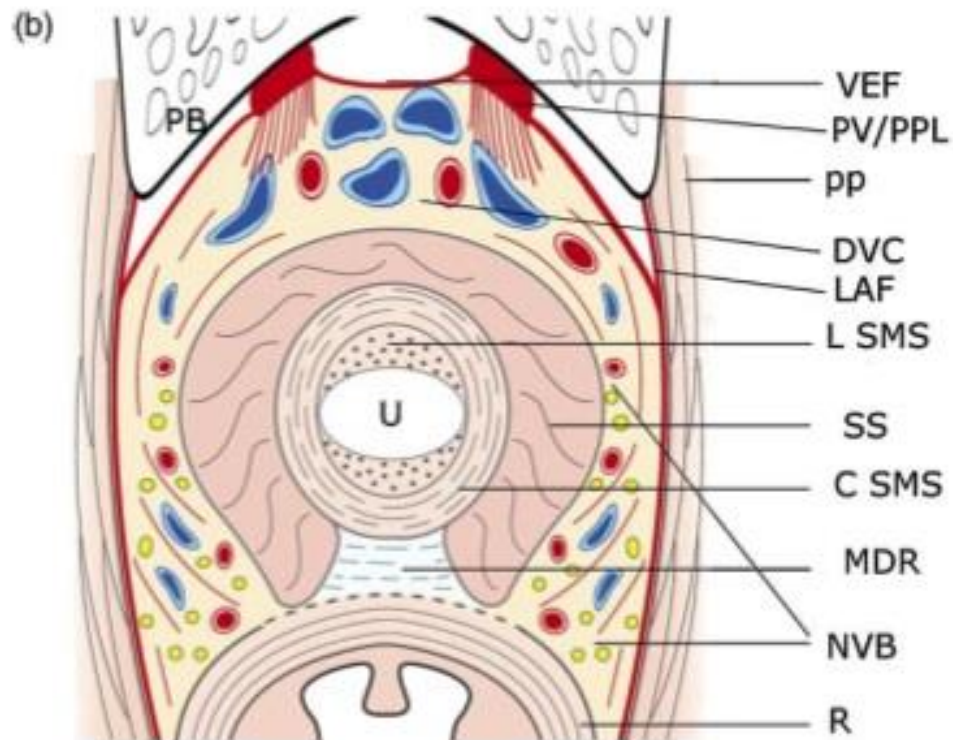


Comparaison des voies d'abord

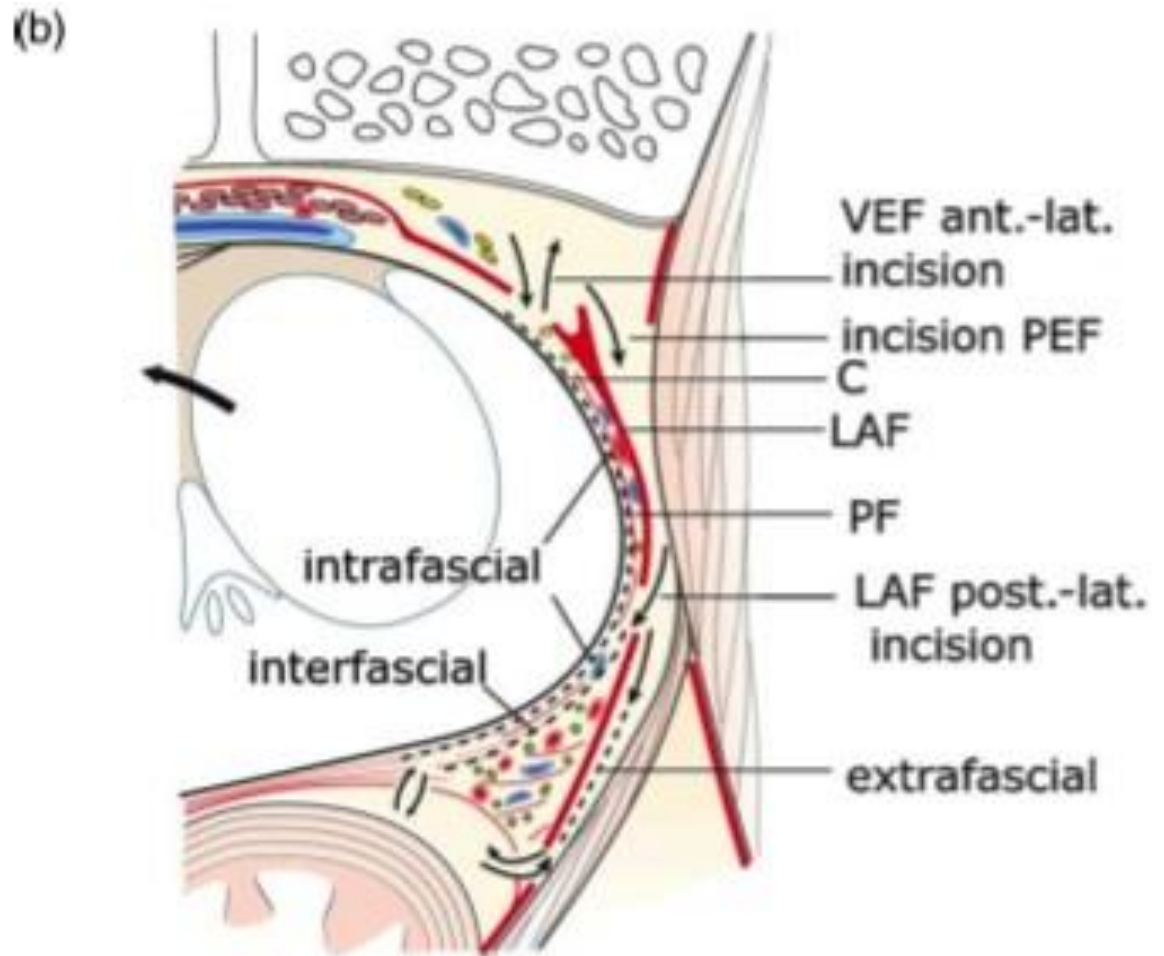
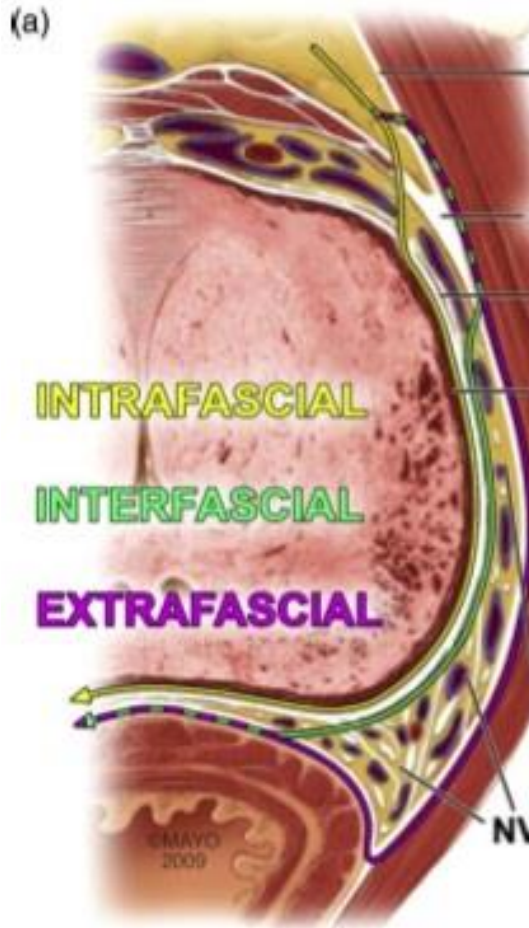
Laparoscopie / Ouvert / Robot

- Metaanalyse
- Bases de données
- Etudes monocentriques
- Etudes randomisées prospectives

NVB à l'apex



Dissection



Métaanalyse des articles publiés

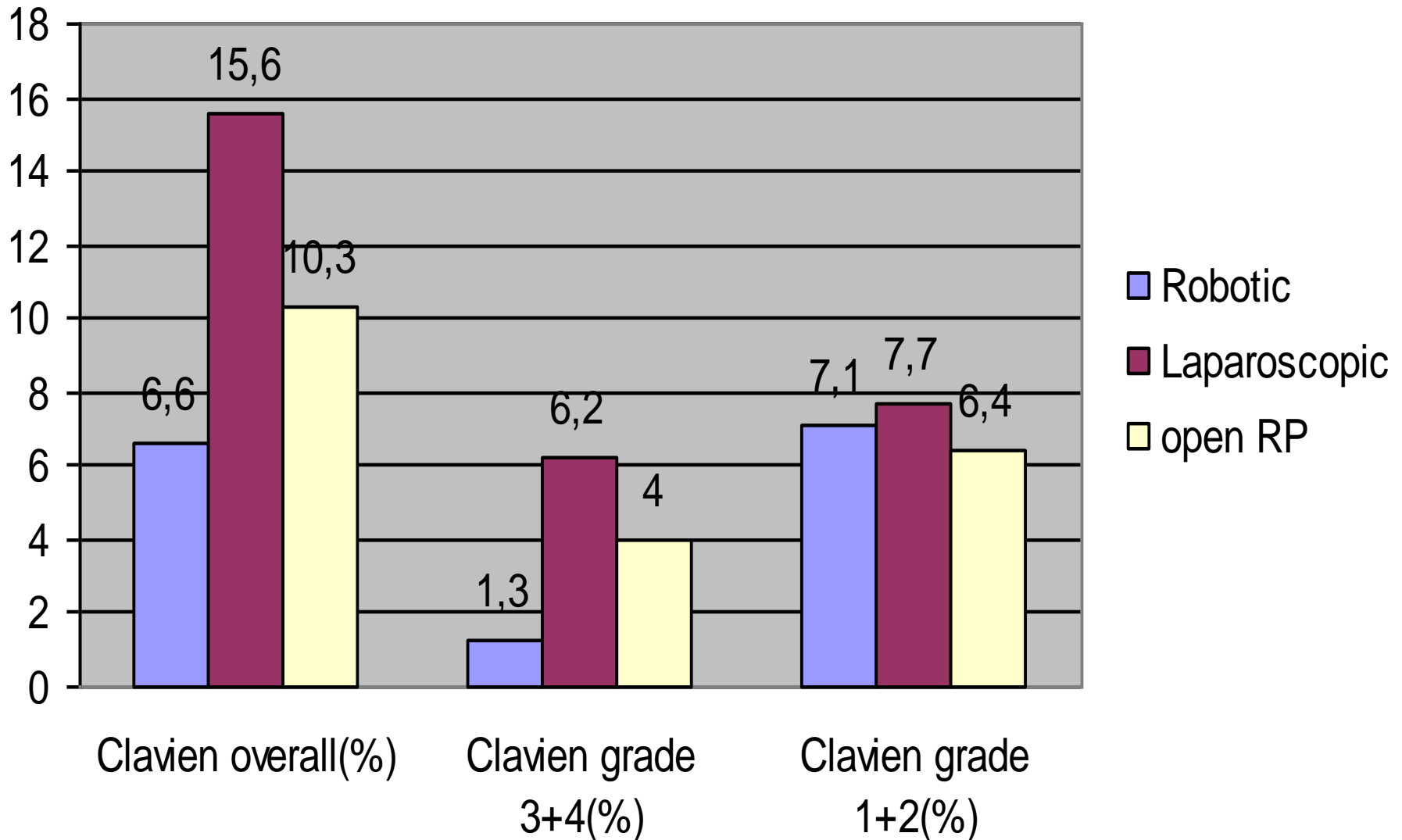
COELHO. J ENDOUROL 2010

	Open	Lap	Robot
Age	61.3	62.9	60.4
OR Time (min)	165	205	162.5
Hospitalisation stay (days)	3.48	4.87	1.43
Blood Lost (ml)	951	291.5	164.2
Transfusion rate %	20.1	3.5	1.4
Complications (%)	10.3	10.9	10.3
Positive Margins	T2 (16.8%) T3 (42%)	T2 (12.4%) T3 (39.2%)	T2 (9.6%) T3 (37.1%)
Continenence	79%	84.8%	92%
Erection	43.1 – 60.6 %	31.1 – 54 %	59.9 – 93.5 %

Robotic Prostatectomy: A Review of Outcomes Compared with Laparoscopic and Open Approaches

Roy Berryhill, Jr., Jay Jhaveri, Rajiv Yadav, Robert Leung, Sandhya Rao, Assaad El-Hakim, and Ashutosh Tewari

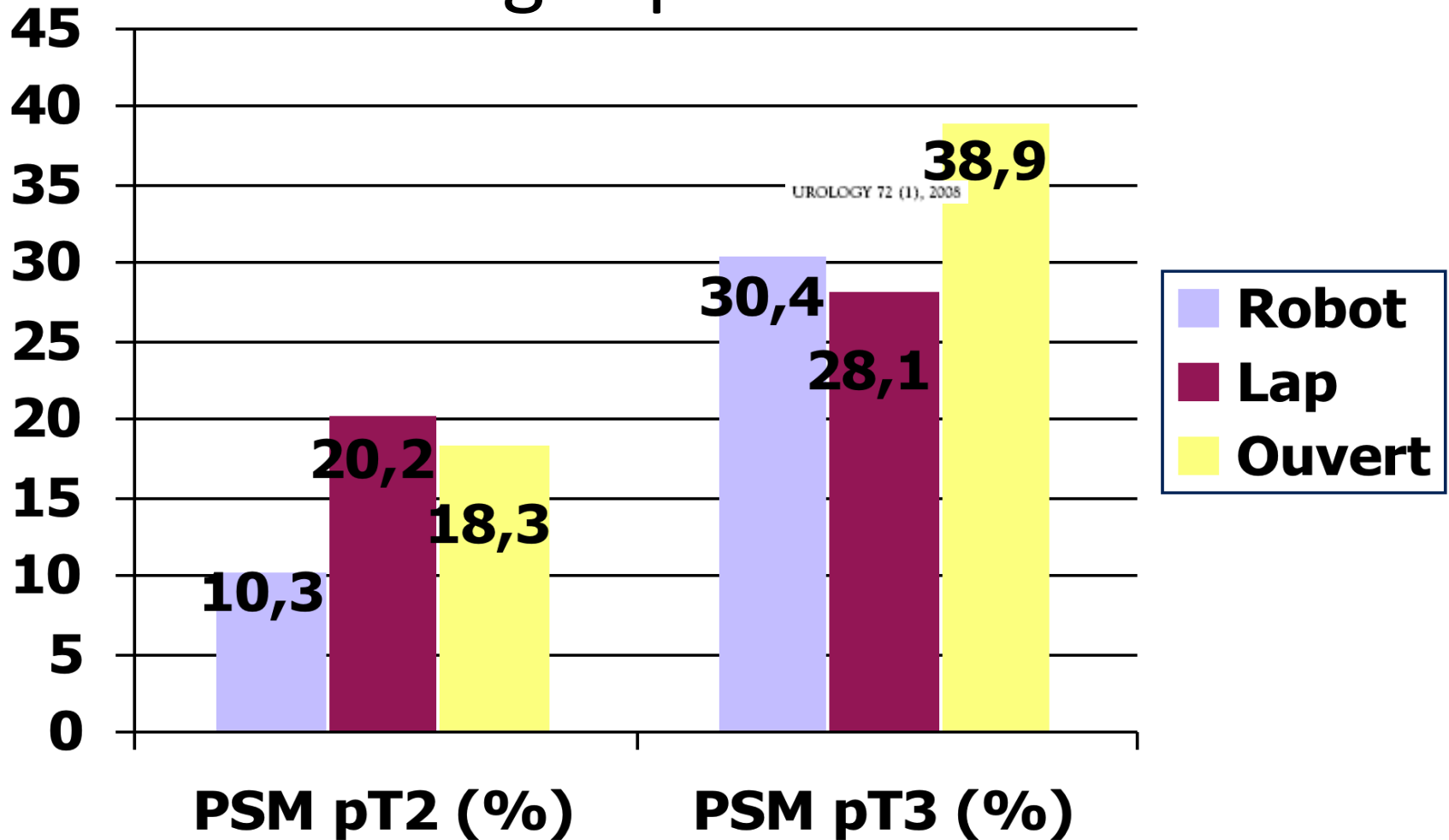
Complications



Robotic Prostatectomy: A Review of Outcomes Compared with Laparoscopic and Open Approaches

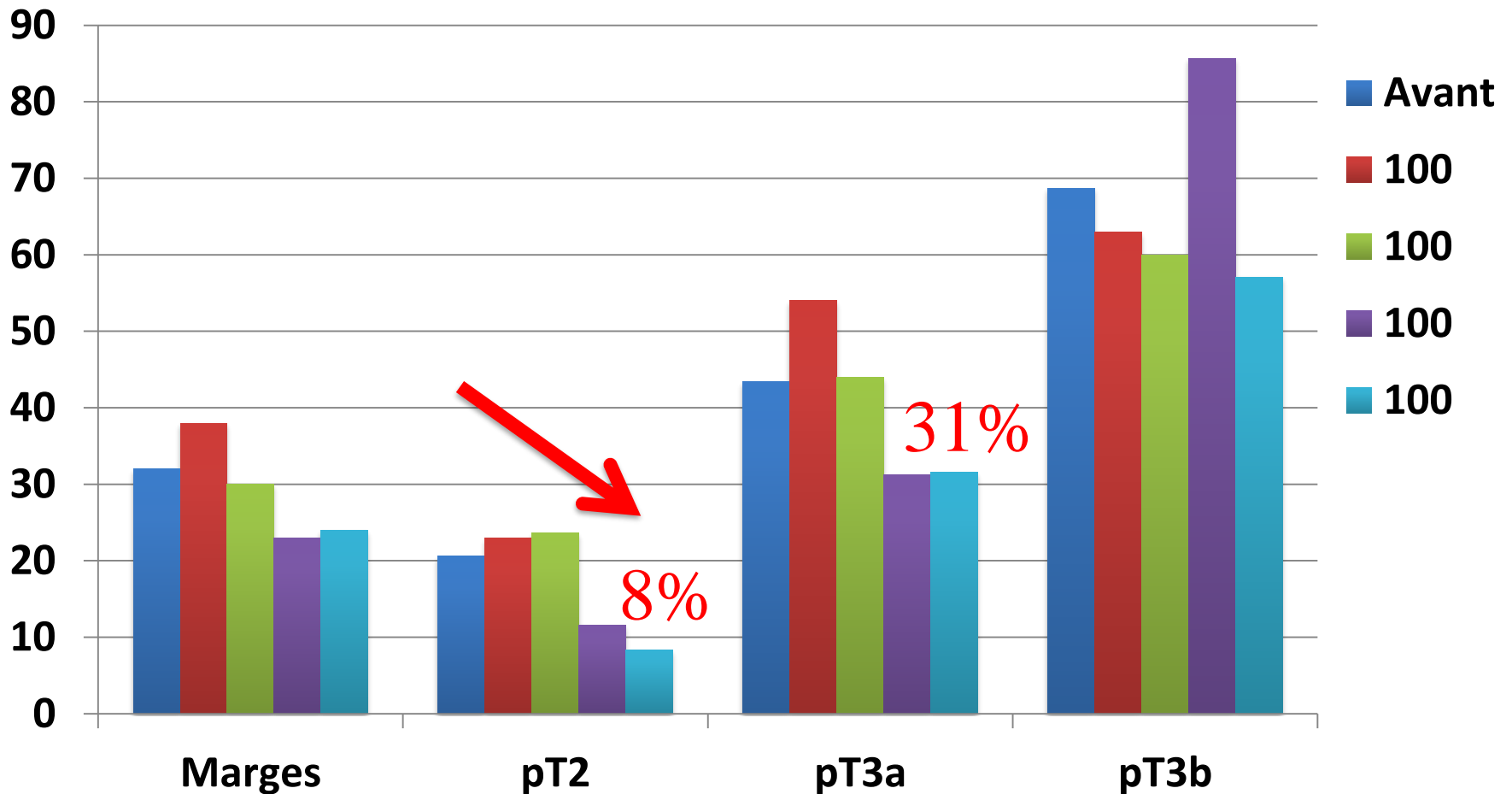
Roy Berryhill, Jr., Jay Jhaveri, Rajiv Yadav, Robert Leung, Sandhya Rao, Assaad El-Hakim, and Ashutosh Tewari

Marges positives



Résultats Carcinologiques :

importance de l'autoévaluation pour réduire le taux de marges



US database

Open/Lap/Robot

	Open (n=26,261)	Lap (n=12,558)	Robot (n=12,286)
Blood Lost (ml)	745	377	188
Transfusion rate (%)	16.5	4.7	1.8
Death (%)	0.1	0.04	0.04
ReIntervention (%)	2.3	1.9	0.9
Rectal Injury (%)	0.5	1	0.3
Lymphocele (%)	3.2	1.7	0.8
Stenosis (%)	2.2	0.8	0.9

Robot vs Lap in one single institution

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

eau
European Association of Urology



Prostate Cancer

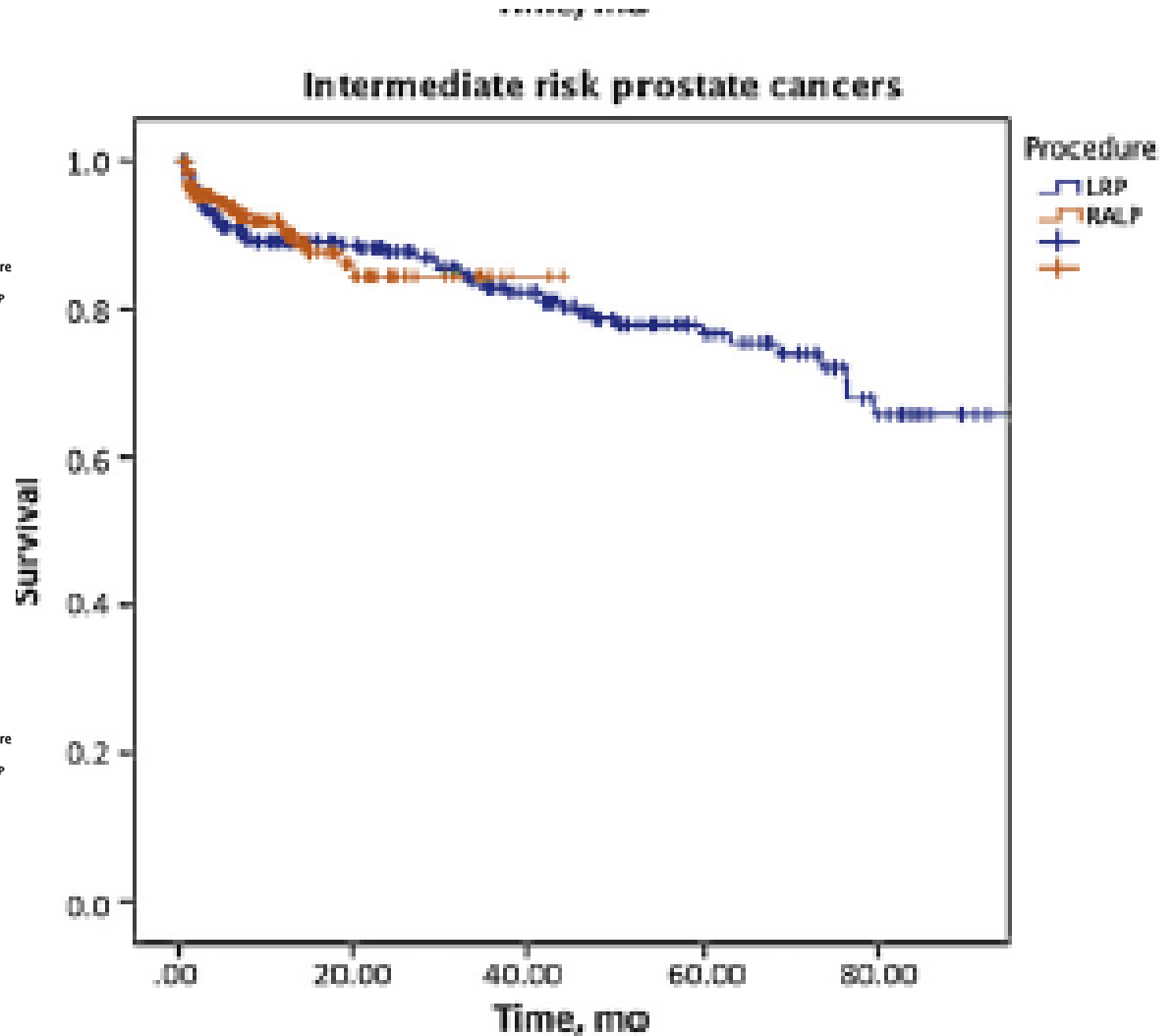
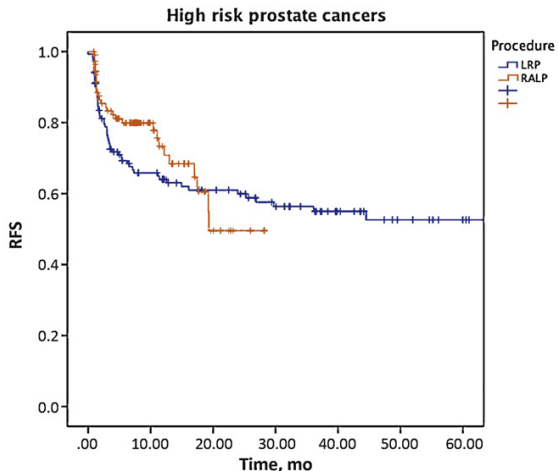
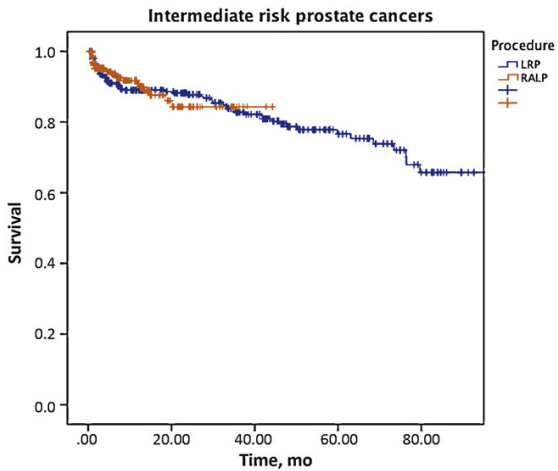
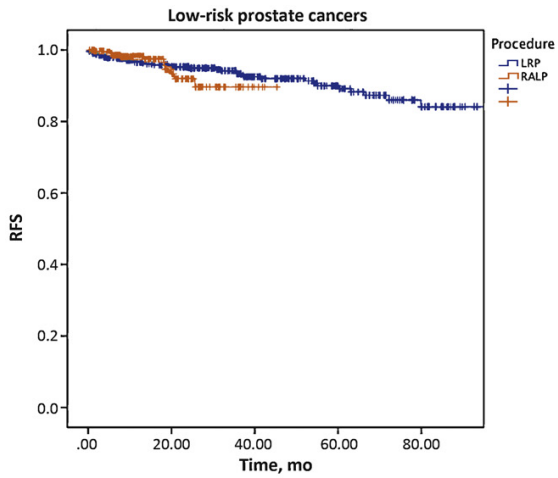
Comparisons of the Perioperative, Functional, and Oncologic Outcomes After Robot-Assisted Versus Pure Extraperitoneal Laparoscopic Radical Prostatectomy

Guillaume Ploussard, Alexandre de la Taille, Morgan Moulin, Dimitri Vordos, Andras Hoznek, Claude-Clément Abbou, Laurent Salomon*

Department of Urology, Hospital Henri Mondor, 51 Avenue du Maréchal de Lattre de Tassigny, 94010 Créteil, France

**CHU Henri Mondor Experience
1990-2012:
3.116 prostatectomies**

PSA Recurrence-free Survivals

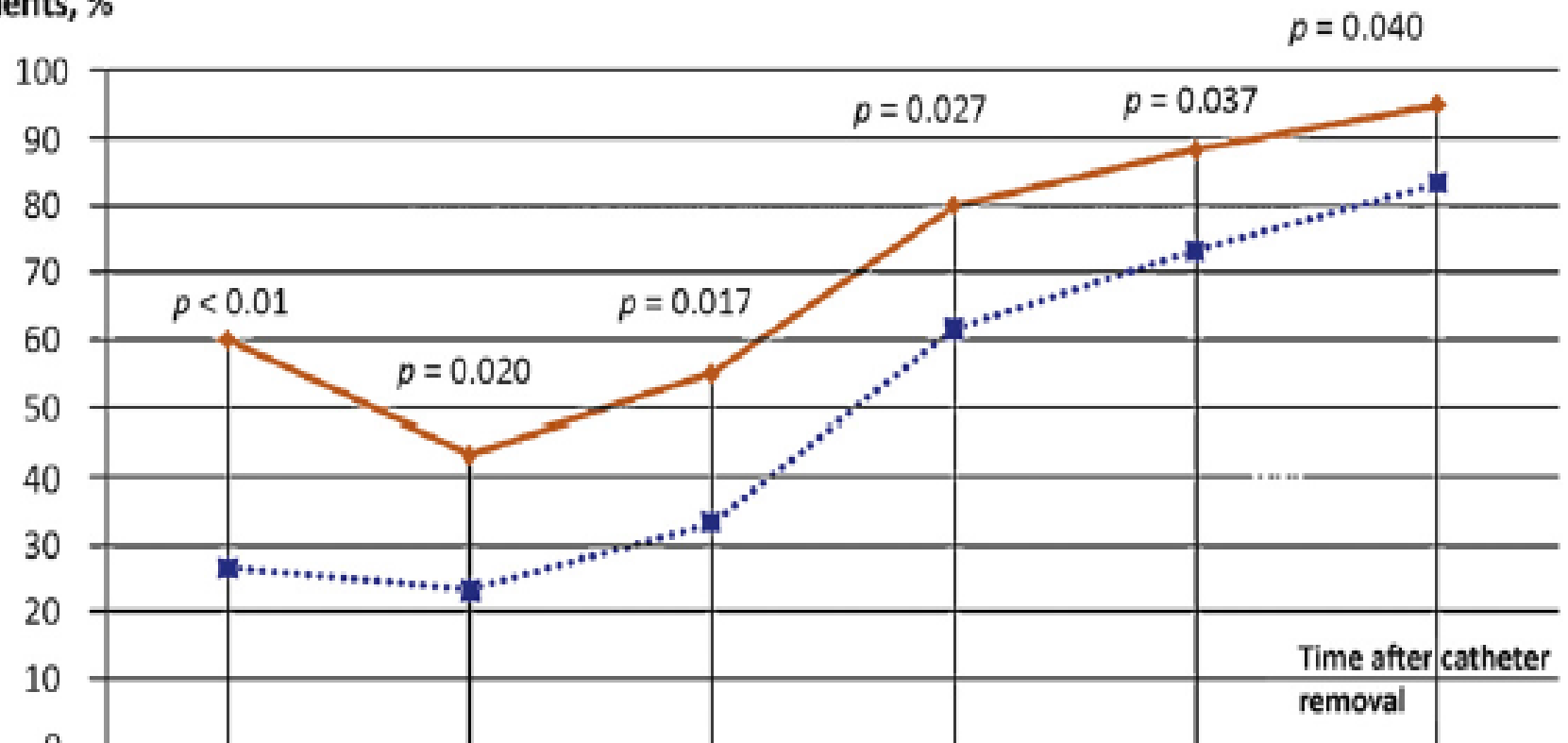


Prospective randomized trial

- Porpiglia Eur Urol 2013
- 60 Lap vs 60 Robot
- 1 single surgeon expert in Lap
- Op Time: 147 vs 138mn (Robot vs Lap, $p=0.06$)
- Blood Lost: 202 vs 234 ml (Robot vs Lap, $p=0.2$)
- PSM: 26% vs 20% (Robot vs Lap, $p=0.38$)

Continence

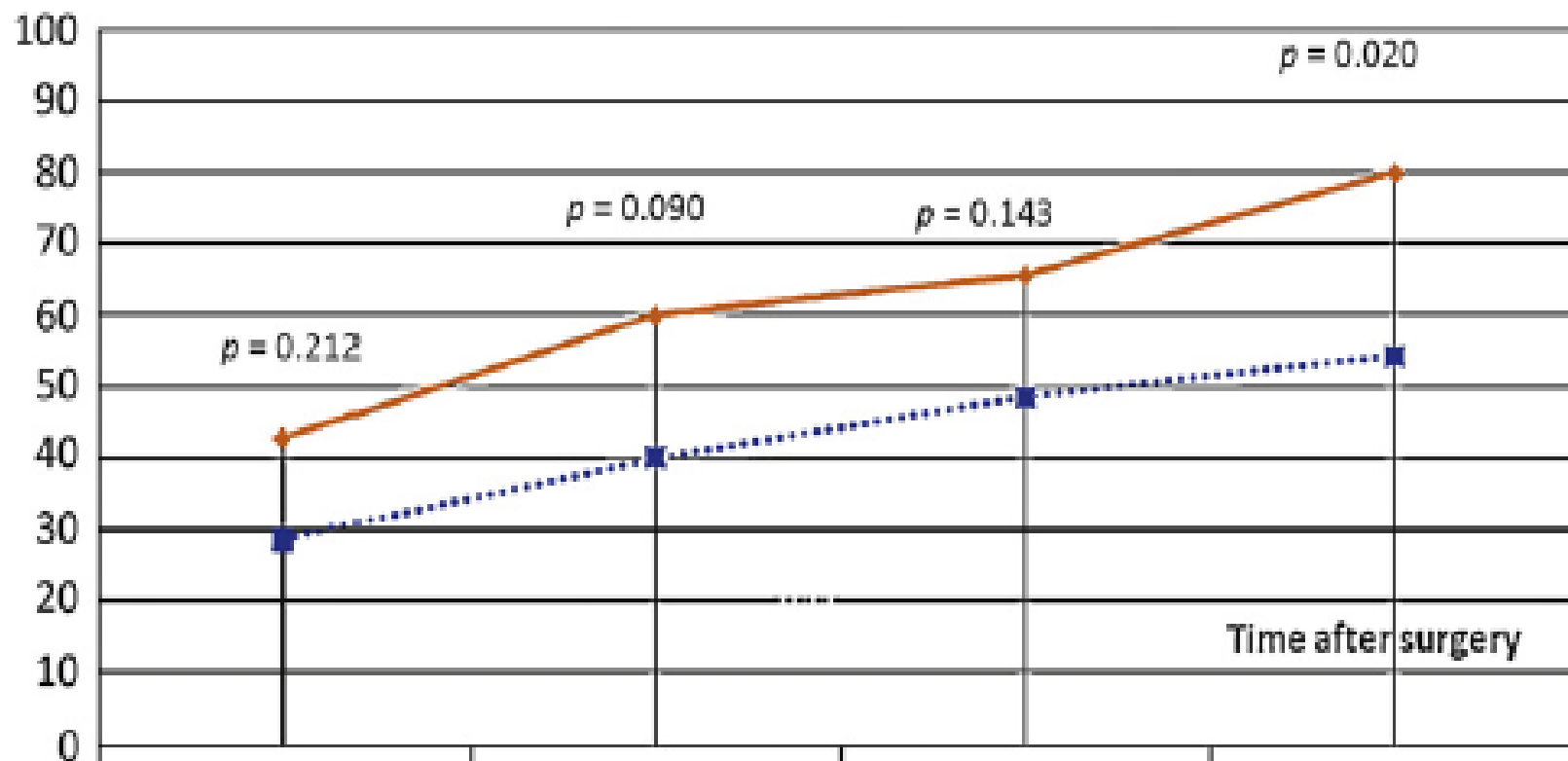
Rate of continent patients, %



	Removal	48 h	1 mo	3 mo	6 mo	12 mo
—◆— RARP	60.0	43.3	55.0	80.0	88.3	95.0
··◆·· LRP	26.6	23.3	33.3	61.6	73.3	83.3

Erection

Rate of potent patients, %



	1 mo	3 mo	6 mo	12 mo
—◆— RARP	42.8	60	65.7	80
··■·· LRP	28.5	40	48.5	54.2

**Robot-assisted laparoscopic prostatectomy versus open radical
retropubic prostatectomy: early outcomes from a randomised
controlled phase 3 study**
John W Yaxley et al, The Lancet 2016

Methods

- Phase 3 randomised controlled trial
- 1:1 randomisation
- Pathologist blinded for specimen review
- Study investigators blinded for data analysis

Open

- Single surgeon
- 15 years experience
- 1500 procedures pre-trial
- 2000 procedures end of trial

Robot

- Single surgeon
- 2 year experience
- 200 procedures pre-trial
- 1000 procedures end of trial

	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	7 (2%)	6 (4%)	1 (1%)	0.12

Short Follow up: 12 weeks

	Range	Baseline			6 weeks			12 weeks		
		Radical retropubic prostatectomy (n=152)	Robot-assisted laparoscopic prostatectomy (n=153)	p value	Radical retropubic prostatectomy (n=136)	Robot-assisted laparoscopic prostatectomy (n=131)	p value	Radical retropubic prostatectomy (n=119)	Robot-assisted laparoscopic prostatectomy (n=129)	p value
Primary										
Urinary function										
EPIC—urinary domain	0-100	88.79 (86.74-90.85)	88.50 (86.59-90.40)	0.83	74.50 (72.77-77.17)	71.10 (68.22-73.95)	0.09	83.80 (81.33-86.17)	82.50 (80.23-84.86)	0.48
Sexual function										
EPIC—sexual domain	0-100	59.80 (55.66-63.92)	63.05 (59.32-66.78)	0.25	30.70 (27.18-34.21)	32.70 (28.67-36.79)	0.45	35.00 (30.94-39.06)	38.90 (34.83-42.96)	0.18
Domain-specific QoL—IIEF total	0-75	43.96 (40.35-47.58)	46.65 (43.07-50.23)	0.30	23.75 (21.03-26.47)	25.63 (22.35-28.92)	0.38	27.56 (24.30-30.81)	30.14 (26.46-30.81)	0.31

Less complication rate with robot

Intraop: 9 vs 4%

Post op: 8 vs 2%

p=0.05

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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	8.31 (3.47)	8.42 (3.28)	8.21 (3.64)	0.59
Length of hospital stay, days	2.39 (2.30)	3.27 (1.49)	1.55 (2.61)	<0.0001
Postoperative complications†				
Grade I	10, 10 (3%)	6, 6 (4%)	4, 4 (3%)	..
Grade II	5, 6 (2%)	3, 4 (2%)	2, 2 (1%)	..
Grade IIIa	3, 3 (1%)	2, 2 (1%)	1, 1 (1%)	..
Grade IIIb	3, 3 (1%)	3, 3 (2%)	0, 0	..
Grade IVa	2, 2 (<1%)	2, 2 (<1%)	0, 0	..

Pannes et Accidents



Pannes

- Mondor
 - 2001-2015 : 4 pannes sur 3000 procédures
 - Aucun risque pour le patient.
 - Pb de caméra (2), bras (2)
- Zorn et al J Endol 2007
 - 4 cas sur 725 soit 0,55%
- Kim et al Urology 2009
 - 1797 procédures : 2,4% de panne
- Andonian et al Can J Urol 2008
 - FDA MAUDE datanase : 50 000 procédures
 - 168 dysfonctionnements soit 0,33%
 - Blessure du patient : 4,8%

