Beuryt 15/10/16

Multidisciplinary Meeting on Urological Cancers

Pr R. van Velthoven MD. PhD.
Head of Urology Department
Jules Bordet Cancer Institute
ULB Brussels

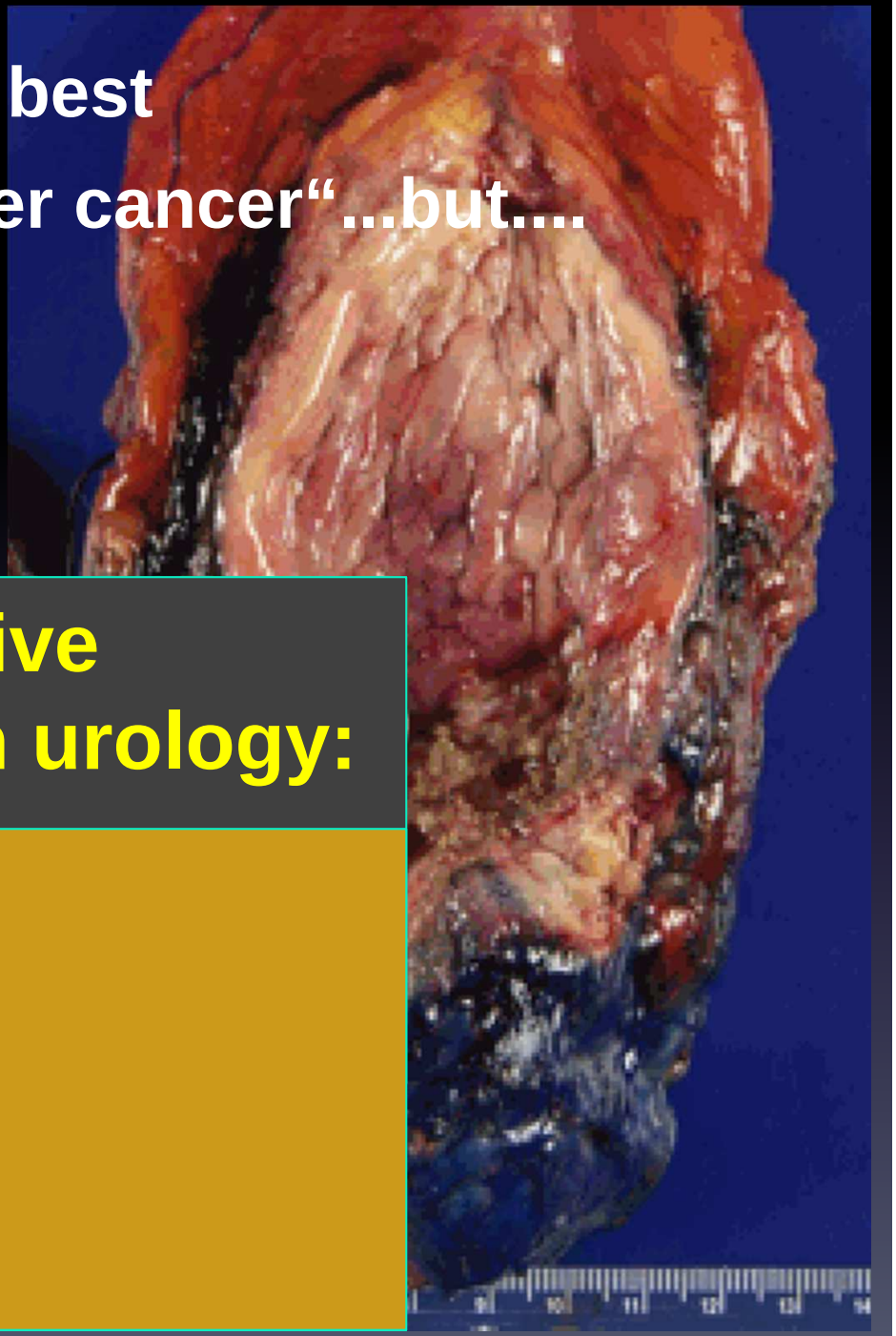
Radical Cystectomy

Laparoscopic

Robot assisted

Minimally Invasive

„Radical cystectomy is the best way to treat invasive bladder cancer“...but....



One of the most invasive surgical procedures in urology:

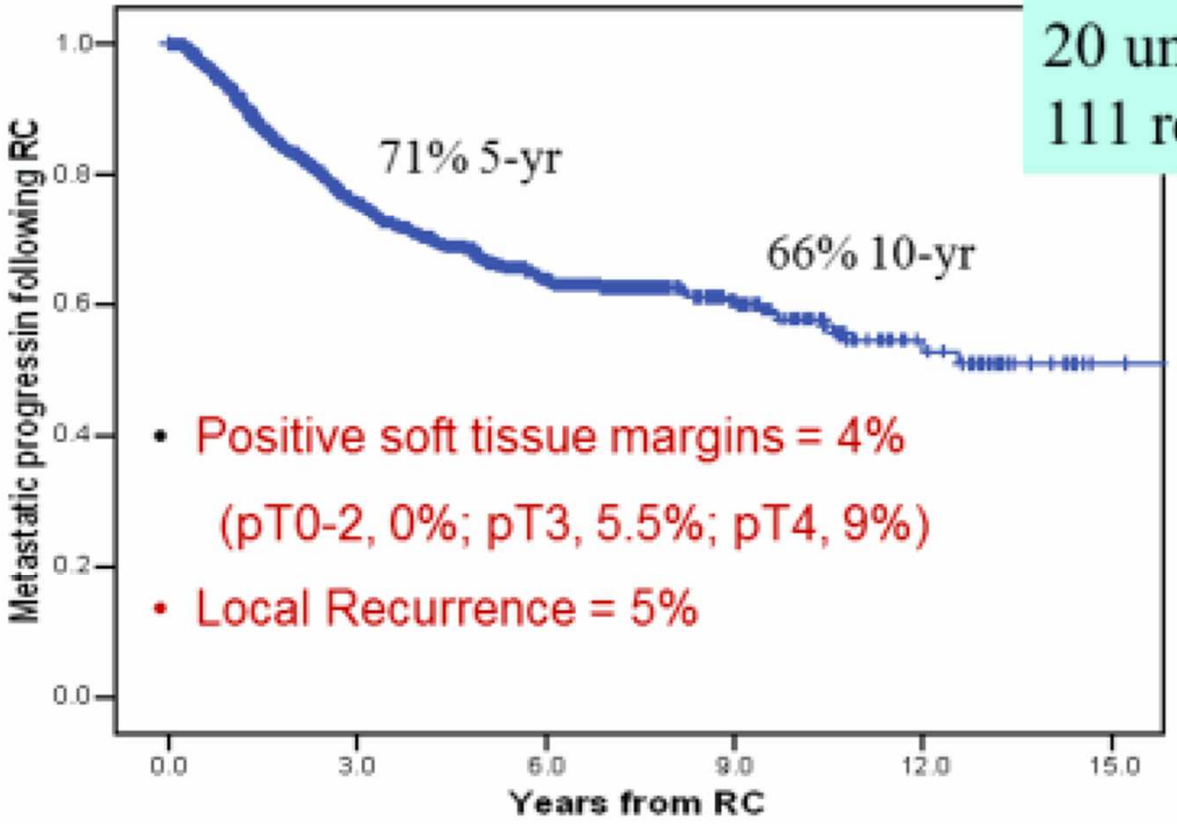
- Comorbid conditions
- Cystectomy
- Urinary diversion

Recur-Free Survival after RC + PLND

MSKCC (N=1,655, >5 year follow-up)

Unselected patients (all comers)
~40% abdominal/pelvic surgery
65% cT3-4 (palpable tumor, hydro)

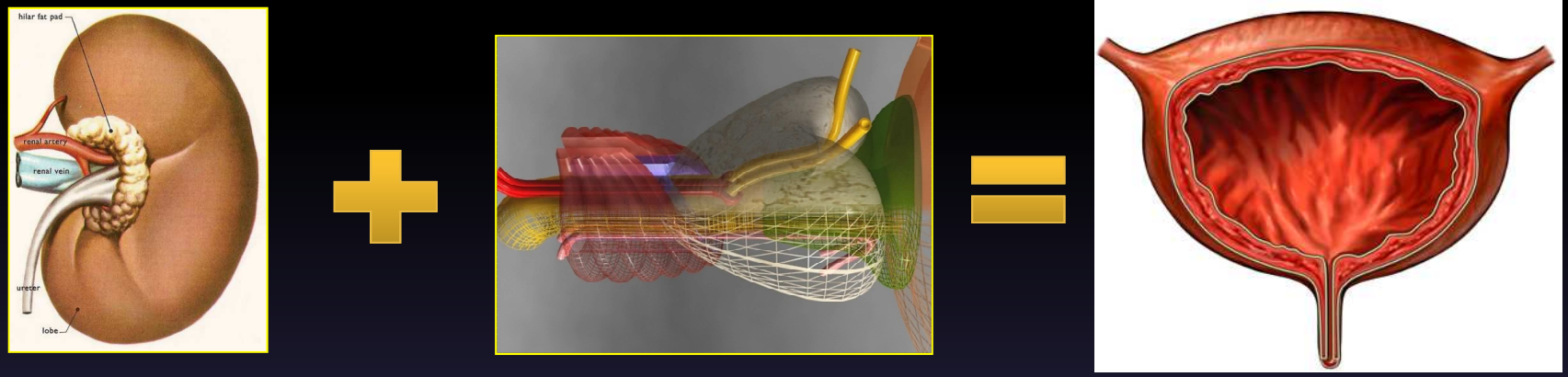
1720 patients
61% >65 years
20 unfit (1.2%)
111 refused (7%)



- Positive soft tissue margins = 4%
  (pT0-2, 0%; pT3, 5.5%; pT4, 9%)
- Local Recurrence = 5%

J Urol 2007;
178: 2308

Starting 1995……2000……



- The global acceptance of laparoscopic surgery for kidney and prostatic cancer treatment has contributed to laparoscopic radical cystectomy (LRC) development

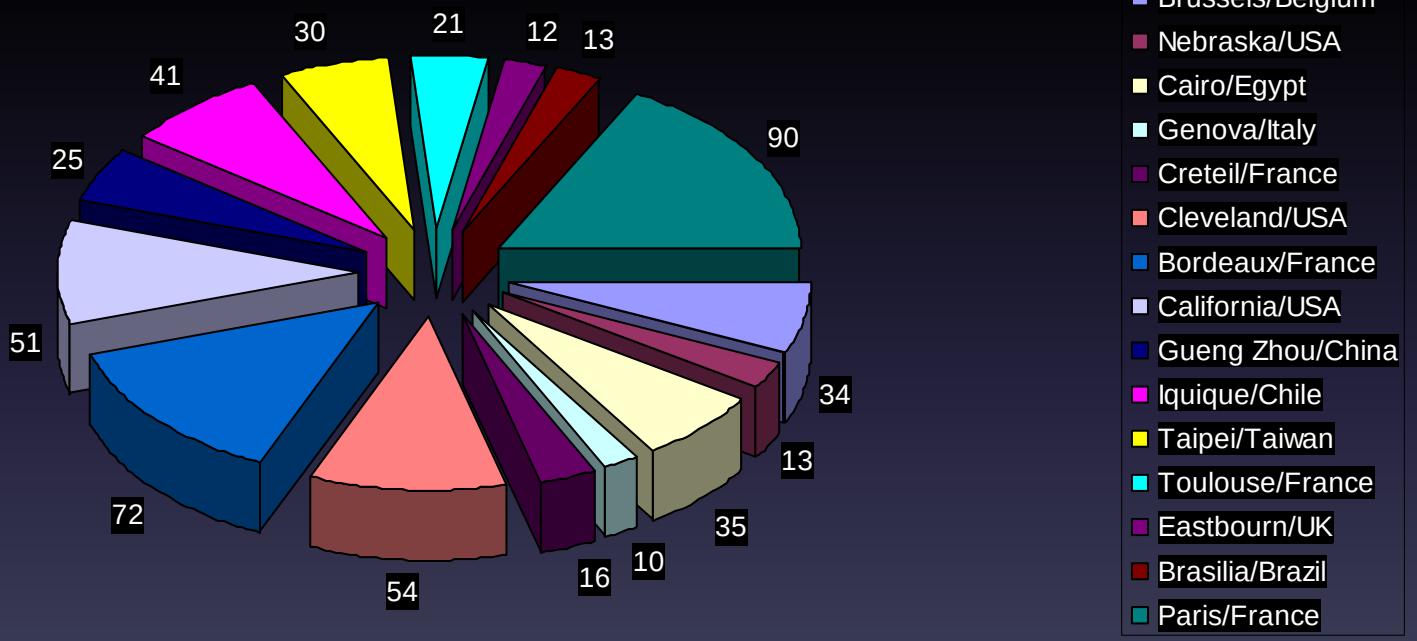
LRC / Peri-operative End-points

- Series have been published in which the minimally invasive approach appears to provide lower blood loss, less pain, and faster bowel function recovery compared to the open counterpart .

	Mean EBL	range
Hemal	556	
Cathelineau	550	100 - 2000
Deger	200	190 - 800
Simonato	310	220 - 440

The key issue is NOT Feasibility

December 1999 → April 2006
International Centers : 15
Cases : 517



INTERNATIONAL REGISTRY

Laparoscopic Radical Cystectomy

„ Radical cystectomy is the best way to treat invasive bladder cancer“

❖ (*Skinner, J Urol, 1980; UCNA, 1981)*

❖**Radical cystectomy = “en bloc removal of “**

- ❖**In MALE:**
- ❖**bladder + prostate + SV**

- ❖**In FEMALE:**
- ❖**bladder + urethra + uterus & cervix + FT & ovaries + anterior vaginal wall**

- ❖**In BOTH: perivesical fat; peritoneum; LYMPH NODES**

❖ Limited Cystectomy → 11% SR at 5 yrs !!

Lerner SP, Sem Oncol 2012

Lymph Nodes

INTERNATIONAL REGISTRY

Laparoscopic Radical Cystectomy

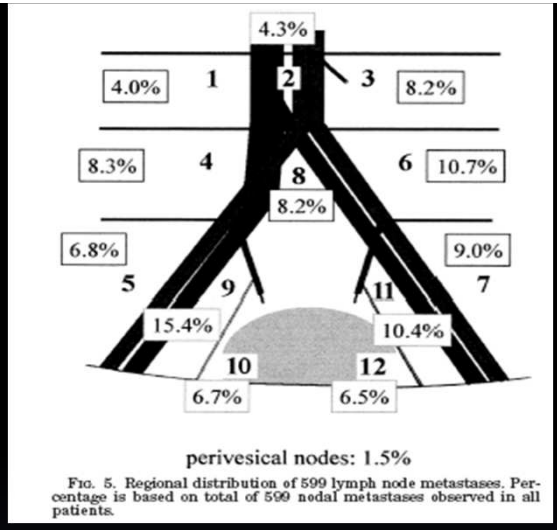


FIG. 5. Regional distribution of 599 lymph node metastases. Percentage is based on total of 599 nodal metastases observed in all patients.

PLND perfomed	**481**	93 %
Mean Number of nodes	**12.6**	**0-36**
Median Number of nodes	**12**	**Right 7** **Left 6**
< 5 nodes	**22**	**8%**
5-10 nodes	**85**	**30%**
>10 nodes	**175**	**62%**
Positive nodes	**82**	**29%**

ORC / oncologic outcome: local REC

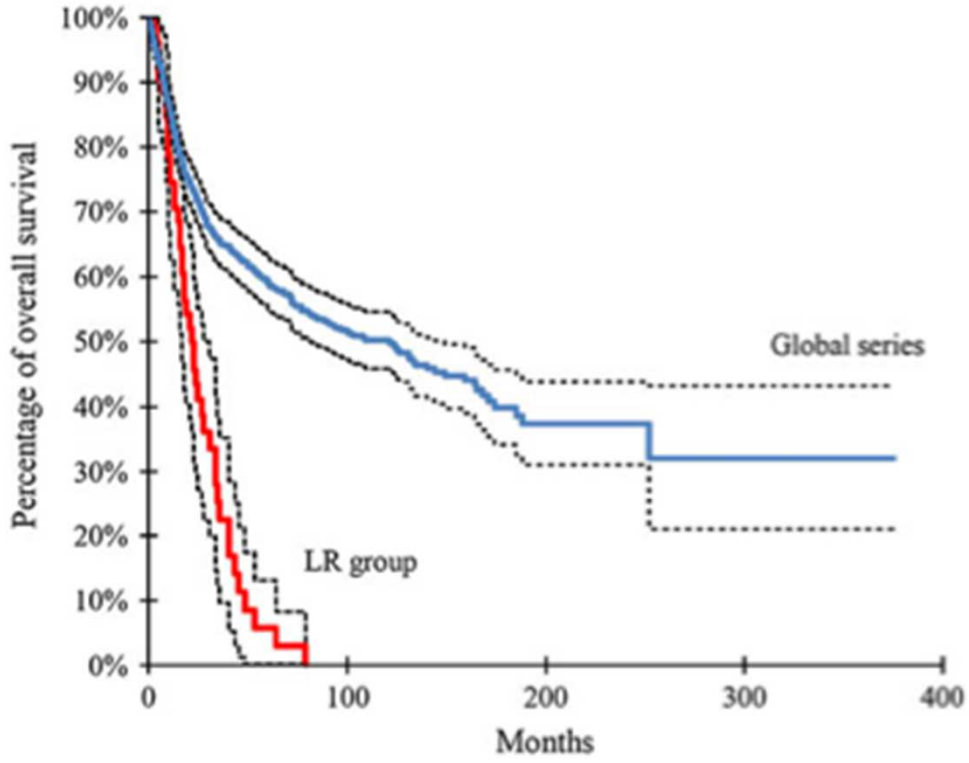
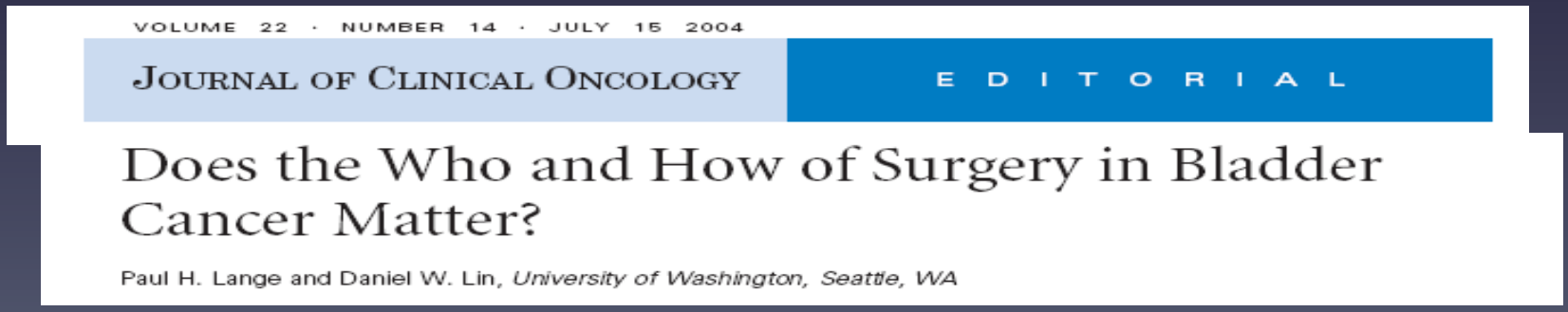


Fig. 1 Kaplan–Meier analysis of overall survival. *Blue line* represents the survival curve for all patients included in this series, who where M0 at the time of cystectomy. *Red line* represents survival of the local recurrence (LR) group. *Dotted lines* are 95 % confidence intervals

Cornu JN; …Lebret T.
World J Urol (2012) 30:821–826

LRC / oncologic outcome ?

- Minimal requirement = parity with ORC
- Local recurrence is lethal
- No salvage CT for uncomplete surgical Tt
- Surgery matters : impact of skills ←→ volume



VOLUME 22 · NUMBER 14 · JULY 15 2004

JOURNAL OF CLINICAL ONCOLOGY

EDITORIAL

Does the Who and How of Surgery in Bladder Cancer Matter?

Paul H. Lange and Daniel W. Lin, *University of Washington, Seattle, WA*

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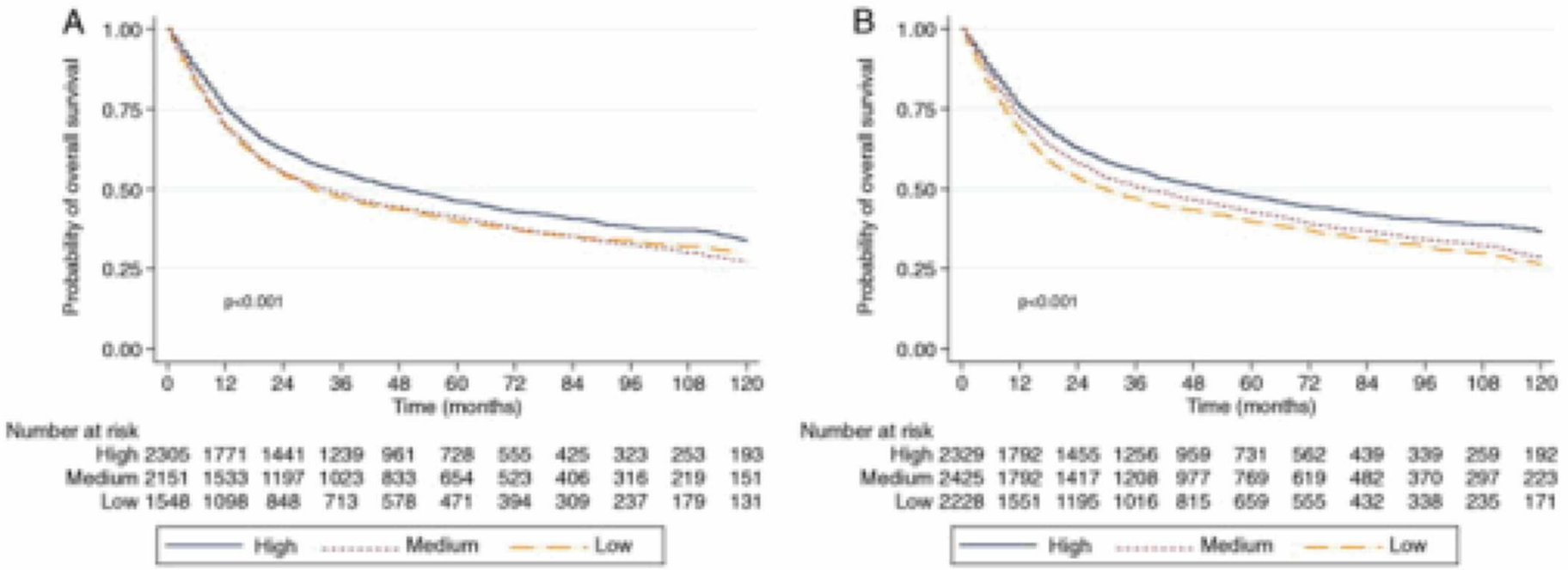


Surgeon volume

Hospital volume

Figure 1 Kaplan-Meier analysis of overall mortality according to surgeon volume (*A*) (log rank p <0.001) and hospital volume (*B*) (log rank p <0.001).

Todd M. Morgan , Daniel A. Barocas , Kirk A. Keegan , Michael S. Cookson , Sam S. Chang , Shenghua Ni , Peter E. ...

Volume Outcomes of Cystectomy—Is it the Surgeon or the Setting?

The Journal of Urology, Volume 188, Issue 6, 2012, 2139 - 2144

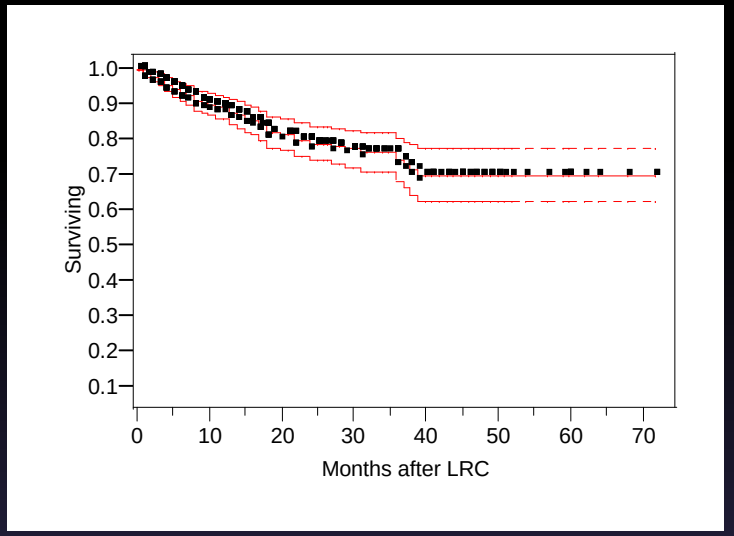
LRC and oncologic safety

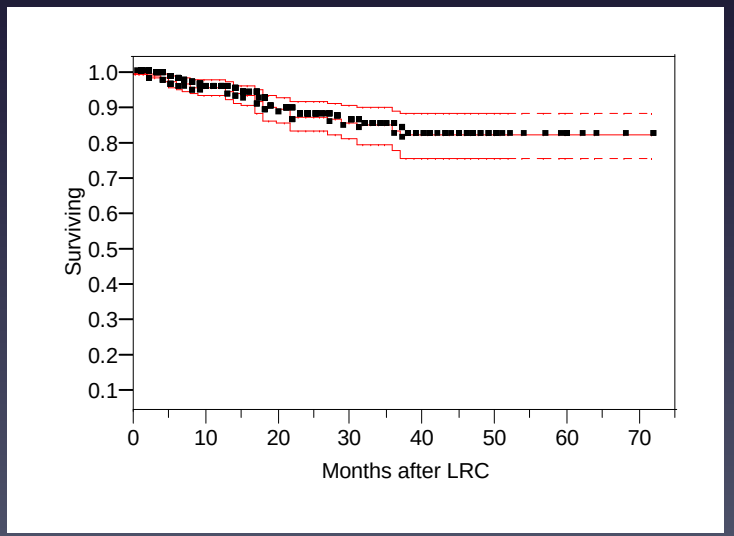
International registry (~1000pts / 18 MO):

- Overall survival 74%
-
  - Specific survival 94%
  - Local recurrence 7%
  - Metastases 7%
  - No port-site metastasis

→ long term results?

(Haber, AUA 2006, #1224)





LRC / oncologic outcome: endpoints ?

- Positive surgical margin (PSM) rate
- Quality ol PLND, extended
- Recurrence rates: local (LR), distant M+
- Cancer specific survival (CSS, DFS) rates
- Overall survival (OS) rates

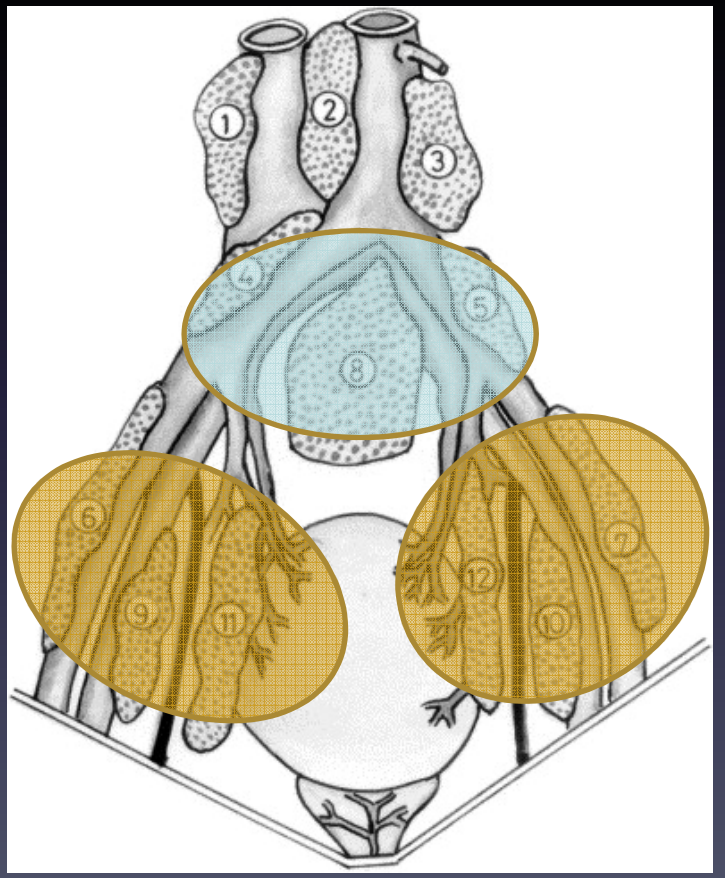
✓ *Herr H.; et al., JCO 2004*

GROUP and Lap RCx

- Currently 10 European centers
- Starting from 2000
- >700 patients enrolled
- All laparoscopic procedures, no robotic assistance
- In some centers, multiple surgeons perform LRC
- Non-standardized surgical procedur each surgeon follows his technique

Material and Methods

- Lymphadenectomy:
  - currently mainly extended,
  - including common iliac nodes
- Urinary diversion
  - via extracorporeal approach (95%)



Adapted from Abol-Enein J Urol 2004

Materials and Methods

Complications

Clavien Dindo system

Early: ≤90 days
Late >90 days

Post-operative Ileus: defined as a time to normalization of bowel function greater than 5 days

Albisinni et al, World J Urol 2015

Oncologic FU

- Minimal semester basis during the first 2 then on a minimal yearly schedule
- Physical, biochemistry, CT scan
- Disease recurrence was considered for any **urethral, local or distant metastasis** detected was during follow-up
- Kaplan Meier curves and Cox-regressions

Albisinni et al, BJU Int 2014

Original Article
World Journal of Urology
February 2016, Volume 34, Issue 2, pp 149-156

First online: 02 July 2015

The morbidity of laparoscopic radical cystectomy: analysis of postoperative complications in a multicenter cohort by the European Association of Urology (EAU)-Section of Uro-Technology

Simone Albisinni , Marco Oderda, Laurent Fossion, Virginia Varca, Jens Rassweiler, Xavier Cathelineau, Piotr Chlosta, Alexandre De la Taille, Franco Gaboardi and 7 more

Pathologic features

Cancer Histology		
	Urothelial Cell Carcinoma	540 (98%)
	Squamous Cell carcinoma	5 (1%)
	Adenocarcinoma	3 (1%)
pT		
	pTo	62 (11%)
	pT1	90 (16%)
	pT2	155 (28%)
	pT3	184 (34%)
	pT4	57 (10%)
pN		
	pNo	416 (76%)
	pN1	59 (11%)
	pN2	67 (12%)
	pN3	6 (1%)
Total LN retrived	median (IQR)	13 (9-17)
	mean±SD	14±7
Surgical margins		
	Negative	514 (94.2%)
	Positive	34 (5.8%)

- Elevated percentage of patients with locally advanced disease (≥pT3)
- 24% of node-positive disease

Comparable to large ORC series *(Stein JCO 2001)*

- LN retrieval in line with current Guidelines (>10-14 nodes) *(Herr J Urol 2004)*
- LN yield has grown over time
- Limited % of PSM (mandatory<10%)

Perioperative outcomes

Total OR time (mins)	**median (IQR)**	**318 (270-380)**
EBL (ml)	**median (IQR)**	**450 (250-800)**
Urinary Diversion		
	Bricker	**372 (68%)**
	Orthotopic neobladder	**144 (26%)**
	Ureterocutanostomy	**13 (2%)**
	Mainz II	**15 (3%)**
	Continent pouch (Kock, Indiana)	**4 (1%)**
LOS (days)	**median (IQR)**	**14 (11-20)**

OR time is probably longer compared to open RC, consistent with literature[1,2]

EBL is significantly lower in LRC
compared to ORC
(Pneumoperitoneum!)
Albisinni World J Urol 2013

Patients leave the clinic only when all drains and catheters are out

[1] *Nix Eur Urol 2010*
[2] *Styn Urology 2012*

RESULTS - Complications

Grade of worst complication		n (% of total population)
– Clavien I		39 (11%)
– Clavien II		120 (22%)
– Clavien III		
	IIIa	22 (4%)
	IIIb	58 (11%)
– Clavien IV		
	IVa	7 (1%)
	IVb	2 (0.5%)
– Clavien V (death)		10 (2%)

The vast majority of complications are minor

Albisinni et al, World J Urol, Feb 2016

RESULTS - Complications

- Complications by organ system
- Infective > GI > GU

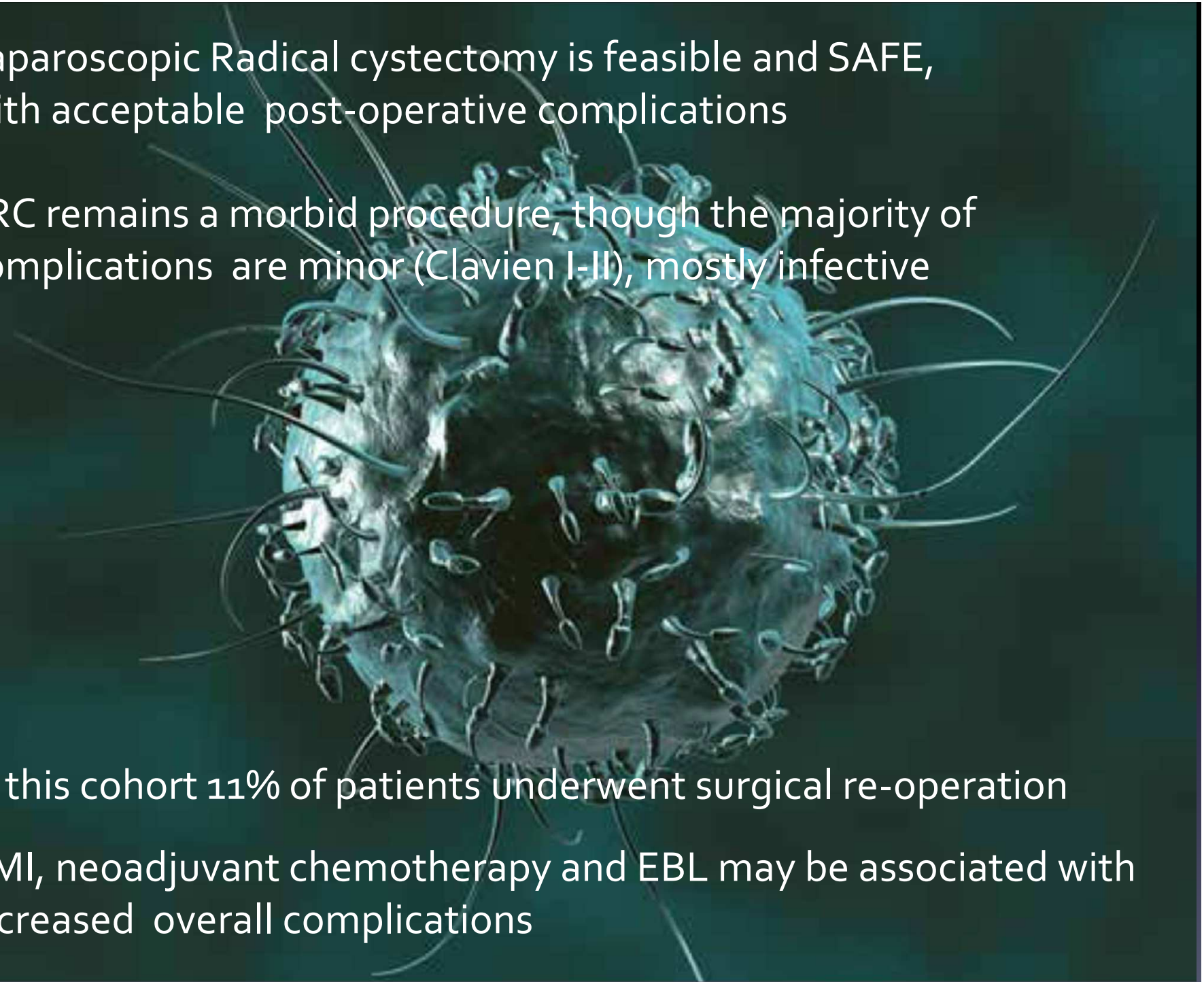
Infective	**71 (28%)**
Gastro-Intestinal	**45 (18%)**
Genito-Urinary	**29 (11%)**
Hemato/Bleeding	**14 (5%)**
Vascular	**13 (5%)**
Abdominal wall	**12 (5%)**
Cardiac	**10 (4%)**
Pulmonary	**5 (2%)**
Electrolyte disturbance	**4 (2%)**
Neurologic	**3 (1%)**
Drain extraction under anesthesia	**1 (0.5%)**
Unknown	**50 (19%)**

- Clavien IIIb complications (11%)

Reoperation	n
Digestive leak	18
Wound revision	10
Urinary leak	8
Obstructive ileus	3
Hemorrhage	3
Drainage of infected collection	3
Fasciotomy	3
Ureteral reimplantation	2
Drainage of infected lymphocele	1
Rectovaginal fistula	1
Endarterectomy	1
Circumcision (prepuce necrosis)	1
Unknown	11

Laparoscopic Radical cystectomy is feasible and SAFE, with acceptable post-operative complications

LRC remains a morbid procedure, though the majority of complications are minor (Clavien I-II), mostly infective



In this cohort 11% of patients underwent surgical re-operation

BMI, neoadjuvant chemotherapy and EBL may be associated with increased overall complications

RESULTS – Oncologic FU

BJUI
BJU International

Robotics and Laparoscopy

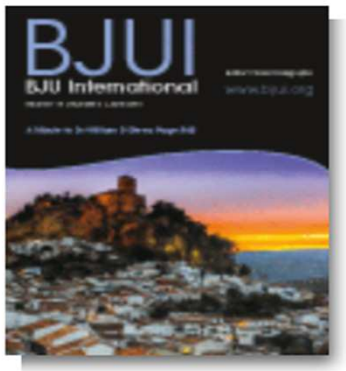
Long-term analysis of oncological outcomes after laparoscopic radical cystectomy in Europe: results from a multicentre study by the European Association of Urology (EAU) section of Uro-technology

Simone Albisinni[1,2,*], Jens Rassweiler[3], Clement-Claude Abbou[6], Xavier Cathelineau[7], Piotr Chlosta[8], Laurent Fossion[9], Franco Gaboardi[10], Peter Rimington[11], Laurent Salomon[6], Rafael Sanchez-Salas[7], Jens-Uwe Stolzenburg[4], Dogu Teber[5] and Roland van Velthoven[2]

Article first published online: 18 DEC 2014

DOI: 10.1111/bju.12947

Issue



BJU International
Volume 115, Issue 6, pages 937–945, June 2015

esut eau

RESULTS – Oncologic FU

- Slightly smaller cohort (503 patients)
- Median follow-up was 50 months
- (mean 60, IQR 19-90).

- 134 recurrences detected:
  - 118 (23%) metastasis,
  - 14 (3%) local recurrences
  - 2 (0.5%) urethral.

- 343 (68%) patients are alive with no evidence of disease (NED)
- 108 died of bladder cancer
- 52 died of non-cancer specific causes

Recurrence Free Survival (RFS)

	RFS		
	2-yrs	5-yrs	10-yrs
pTo-1	91%	87%	85%
pT2	82%	71%	67%
pT3	60%	51%	45%
pT4	34%	34%	---
Cox	HR 1.65	95%CI 1.37-1.98	p <0.0001
pNo	82%	75%	71%
pN1-3	46%	36%	30%
Cox	HR 2.85	95%CI 1.97-4.11	p <0.0001
PSM -	77%	68%	64%
PSM +	27%	27%	----
Cox	HR 1.94	95%CI 1.13-3.35	p 0.016
Overall	**74%**	**66%**	**62%**

pT, pN and PSM are the most important predictors of RFS

In ORC trials:

- 68% at 5years
- 66% at 10years

in 1054 pts[1]

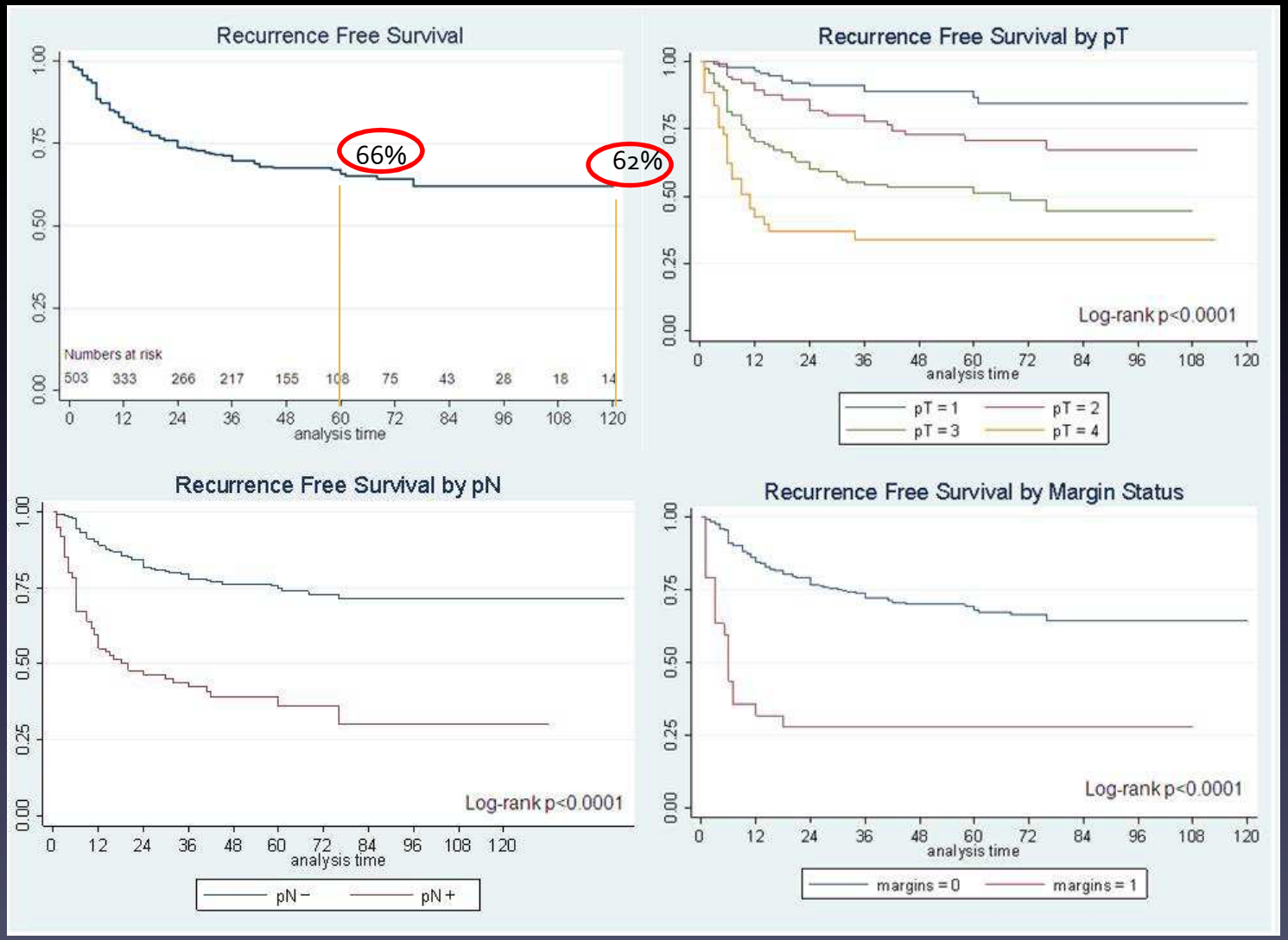
- 62% at 5yrs
- 50% at 10yrs

in 507 pts[2]

[1]*Stein JCO 2001*

[2]*Maderbacher JCO 2003*

RESULTS – Oncologic FU: RFS



From Albisinni et al, BJU 2014

Recurrence Free Survival (RFS)

Similar results in other LRC and RARC trials:

RFS of 72.6% at 5yrs *(Huang Eur Urol 2010)*

(171 chinese patients undergoing LRC)

No port site metastases in the present study

Principles of oncologic surgery MUST be observed, with respect to hollow organs hosting exfolliative tumours

→Tissue handling

→ Control of the urethra, ureters

→ Retrieval bags

..1 early vaginal recurrence: transvaginal specimen extraction ***without*** *(!!!) Endocatch bag….*

Cancer Specific Survival (CSS) and Overall Survival (OS)

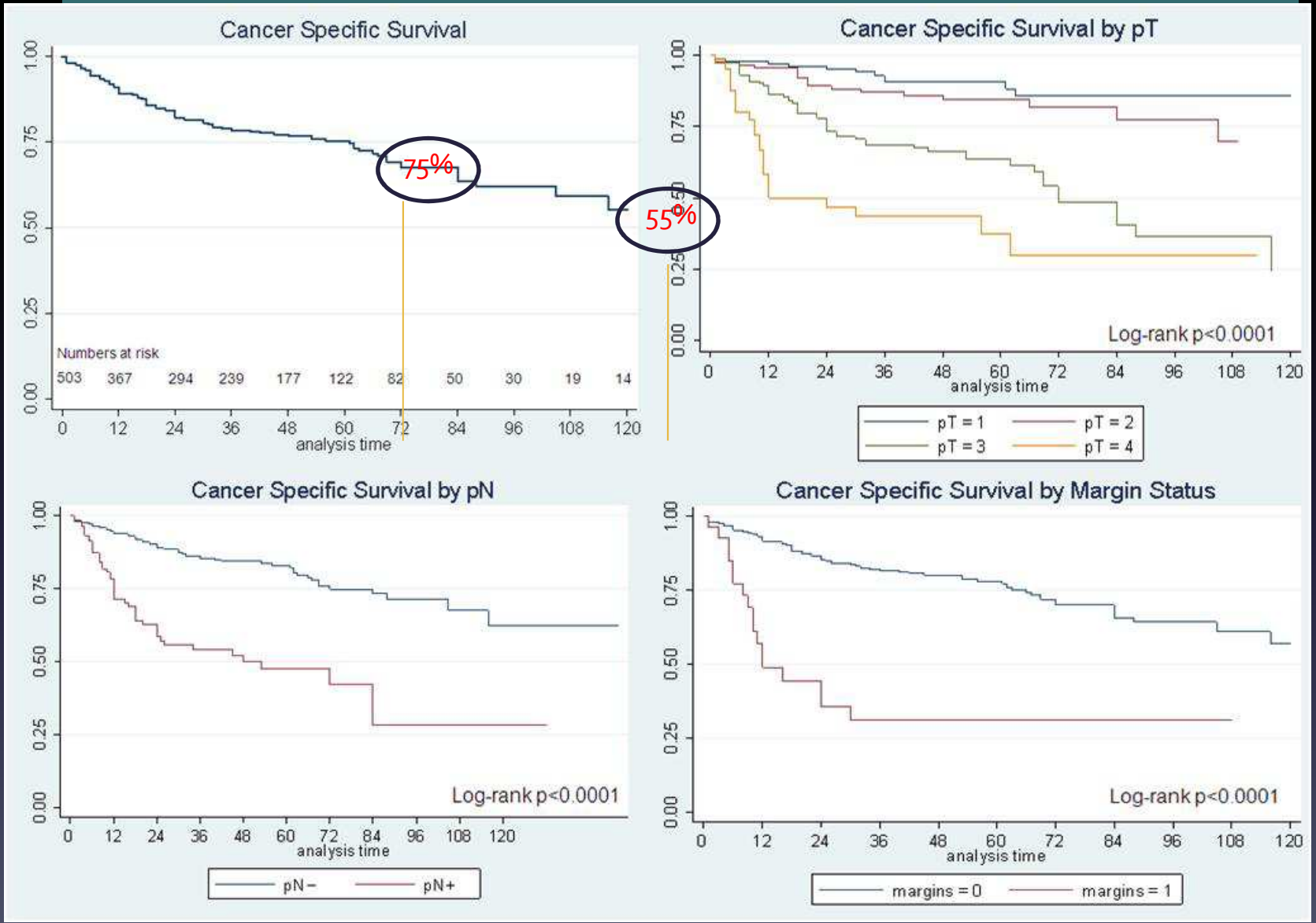
	CSS			OS		
	2-yrs	5-yrs	10-yrs	2-yrs	5-yrs	10-yrs
pT0-1	95%	91%	86%	94%	81%	68%
pT2	89%	85%	70%	89%	73%	56%
pT3	73%	64%	24%	69%	46%	12%
pT4	47%	30%	---	39%	24%	---
Cox	HR 1.74	95%CI 1.41-2.15	p <0.0001	HR 1.53	95%CI 1.30-1.81	p <0.0001
pN0	89%	83%	61%	87%	71%	44%
pN1-3	59%	48%	28%	51%	30%	---
Cox	HR 2.54	95%CI 1.68-3.85	p <0.0001	HR 2.74	95%CI 1.94-3.89	p <0.0001
PSM -	85%	78%	57%	82%	65%	39%
PSM +	36%	31%	---	31%	16%	---
Cox	HR 1.87	95%CI 1.02-3.44	p 0.043	HR 1.62	95%CI 0.96-2.73	P 0.069
Overall	**82 %**	**75%**	**55%**	**79%**	**62%**	**38%**

Contemporary ORC trials:

59-66%

37-43%

RESULTS – Oncologic FU: CSS



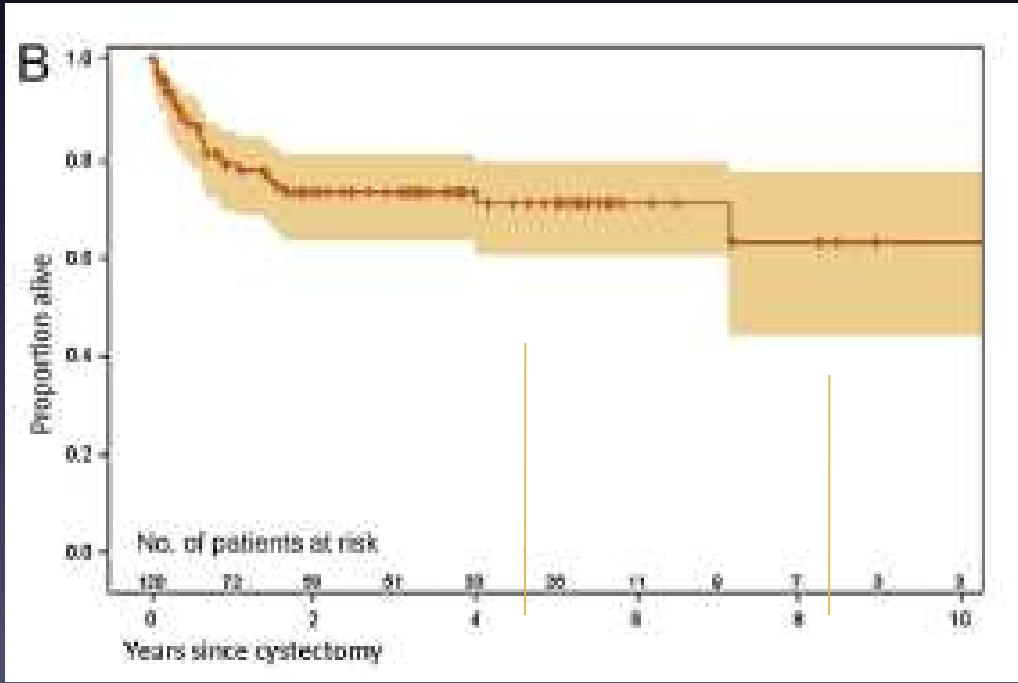
From Albisinni et al, BJU 2014

RESULTS – Oncologic FU

- The data reported represent currently the largest cohort of
- long-term FU after LRC

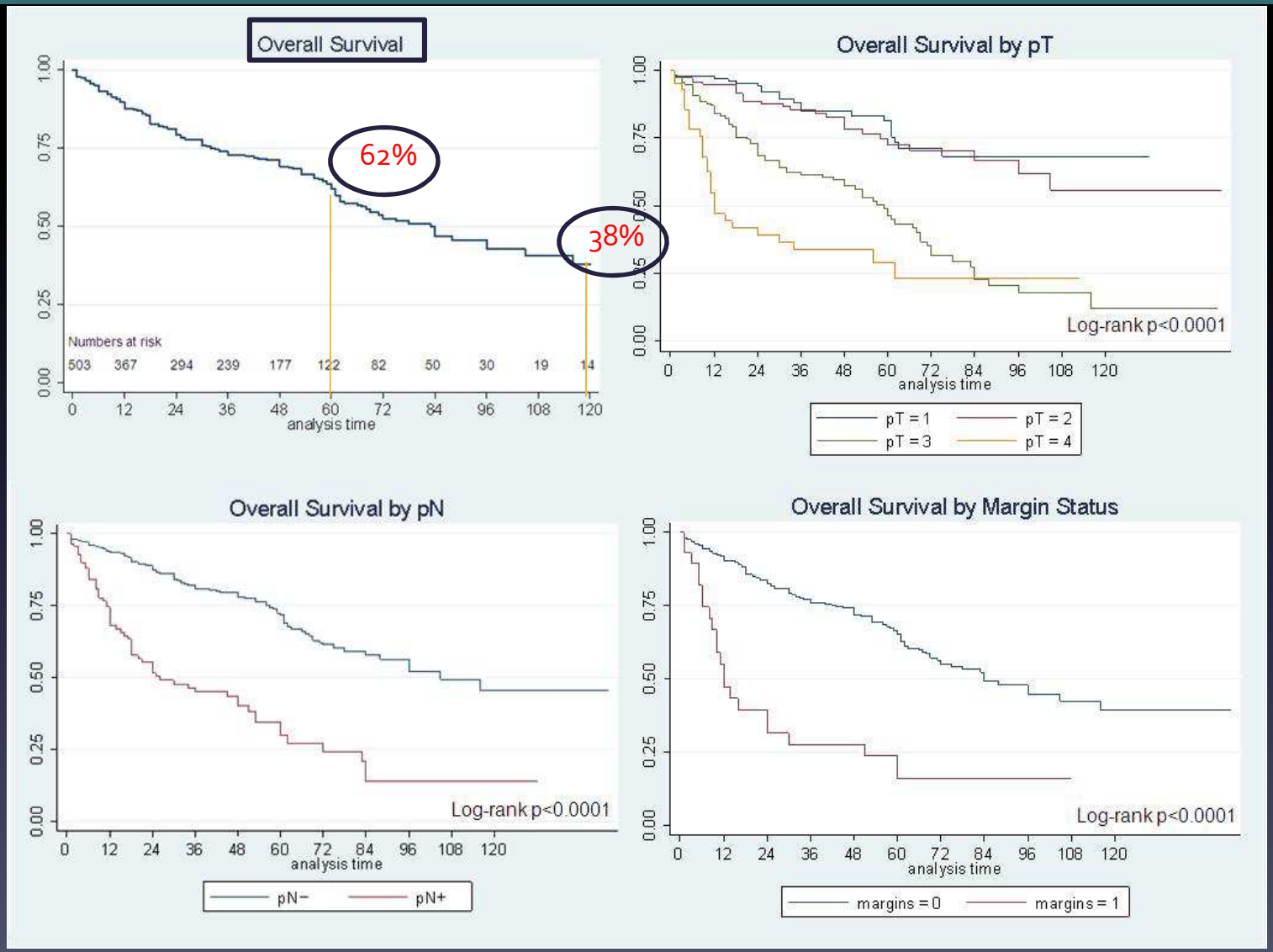
- Other encouraging results were published by Snow-Lisy et al *(Eur Urol 2014)*:

  121 pts
  LRC and RARC at Cleveland clinic
  median FU 5.5yrs
  CSS at 5yrs: 71%
  CSS at 10yrs: 63%



Adapted from Snow-Lisy, Eur Urol 2014

RESULTS – Oncologic FU



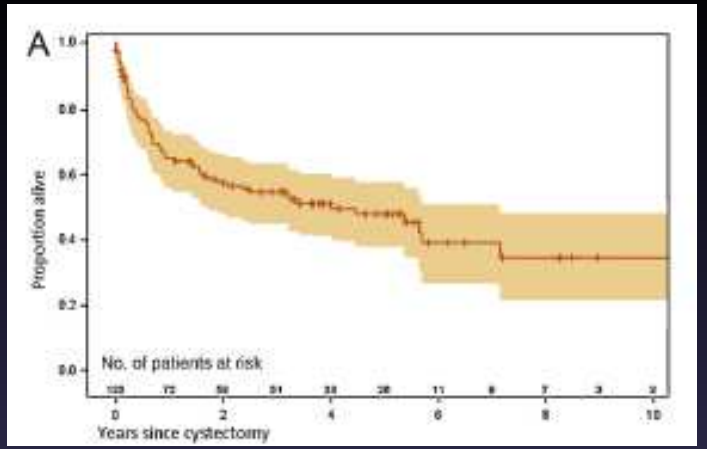
From Albisinni et al, BJU 2014

RESULTS – Oncologic FU

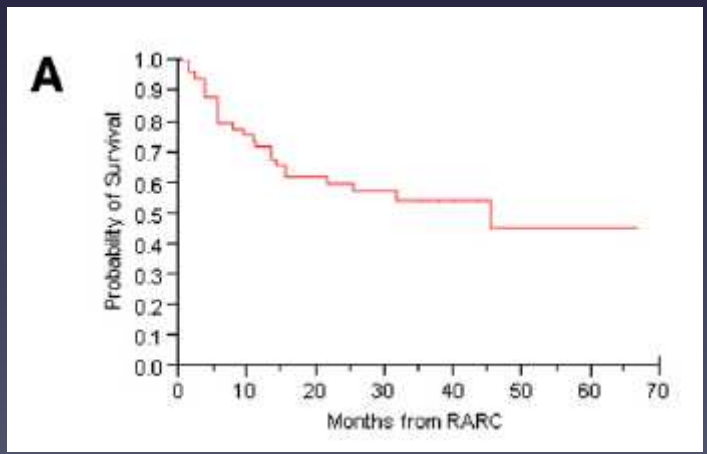
The reported survival rates are comparable to ORC findings and other minimally invasive RC cohorts

Snow-Lisy et al *(Eur Urol 2014)*:
- 121 pts

LRC and RARC at Cleveland clinic
OS at 5yrs: 48%
OS at 10yrs: 35%



Mmeje et al. *(Urol Oncol 2013)*:
- 50 patients
- RARC
- <u>All node-positive disease</u>
- OS at 3yrs: 55% (51% in pN+ in our cohort)
- OS at 5yrs: 45% (30% in pN+ in our cohort)



ONCOLOGIC FU

- We report the largest cohort of LRC to date with long-term follow-up
- Our results are encouraging and comparable to large,
- contemporary ORC cohorts
- pT, pN and PSM remain the most important predictors of
- recurrence and survival
- The principles of surgical safety MUST be translated in laparoscopic
surgery
- Failure to do so WILL result in poor oncologic control of the disease

ONCOLOGIC OUTCOME

Laparoscopic Surgery
perfomed respecting open surgical principles

Open Surgery

PNEUMOPERITONEUM!!!!

- **There is raising concern on the impact of the pneumoperitoneum and high-flow insufflations on urothelial cell migration**
- **Several cases of colorectal, ovarian and urothelial cancers developing local relapses, port-site seeding or early metastases after laparoscopic surgery are reported**

THE JOURNAL of UROLOGY®

Official Journal of the American Urological Association

Article in Press

Critical analysis of early recurrences after laparoscopic radical cystectomy in a large cohort by the ESUT: we must remain vigilant

Simone Albisinni, Laurent Fossion, Marco Oderda, Omar M. Aboumarzouk, Fouad Aoun, Theodoros Tokas, Virginia Varca, Rafael Sanchez-Salas, Xavier Cathelineau, Piotr Chlosta, Franco Gaboardi, Udo Nagele, Thierry Piechaud, Jens Rassweiler, Peter Rimington, Laurent Salomon, Roland van Velthoven

ONCOLOGIC FAILURES

In the ESUT cohort?

- 311/627 patients had favorable pathologic features i.e. **≤pT2;No;Ro**
- 27/311 (4.3% of the entire cohort) experienced a recurrence during the first 2 years, albeit ≤pT2;No;Ro pathology!
- High-volume metastases, **10/27 presenting disseminated metastatic disease**
- Unusual localisations: **axial skeleton, corpora cavernosa, axillary nodes**
- In 1/27 patients a surgical negligence was found (rupture of the endobag during transvaginal extraction → patient had vulvar and peritoneal mets 4mo post-op
- No apparent cause in the other 26….??????

Albisinni et al, J urol: FEB 2016 epub

ONCOLOGIC FAILURES ESUT

Center	Age	Sex	BMI	Smoker	Cis	LNs	pT	Urinary Diversion	RFS	Recurrence localisation	N of Mets	Recurrence Treatment	Response	Mortality FU	Total FU
8	69	M	24.5	no	No	12	0	Ileal conduit	3	cerebral	1	Unknown	Partial	Dead, Non-cancer specific	18
8	42	F	17.2	no	No	17	2b	Ileal conduit	4	vulva; inguinal nodes; peritoneal carcinosis	Disseminated	Chemotherapy	None	Dead, Cancer Specific	6
9	59	F	19.7	no	Yes	1	a	Ileal conduit	5	pelvic mass	1	Palliative	Partial	Dead, Cancer Specific	13
2	68	M	19.0	yes	Yes	28	1	Ureterocutaneostomy	5	liver; retroperitoneal LN	Disseminated	Chemotherapy	None	Dead, Cancer Specific	6
1	56	F	24.0	yes	No	14	0	Orthotopic neobladder	6	bone; pelvic mass	Disseminated	Chemotherapy	None	Dead, Cancer Specific	12
1	78	F	20.6	yes	No	5	2b	Ileal conduit	6	bone (axial)	Disseminated	Palliative	None	Dead, Cancer Specific	6
5	75	M	27.1	Unknown	No	17	2a	Ileal conduit	6	Liver	Disseminated	Chemotherapy	None	Dead, Cancer Specific	9
10	73	M	25.6	Unknown	No	10	0	Ileal conduit	6	mediastinal and inguinal lymph nodes	5	Chemotherapy	Partial	Dead, Cancer Specific	29
5	68	M	25.4	no	Yes	8	2b	Orthotopic neobladder	7	Retroperitoneal lymph nodes	3	Chemotherapy	Partial	Dead, Cancer Specific	20
10	81	M	26.8	Unknown	No	1	0	Ileal conduit	8	pelvic mass	1	Chemotherapy	Partial	Alive	12
7	54	F	25.3	Unknown	No	9	2a	Ileal conduit	9	Bone; Liver	4	Unknown	Partial	Dead, Non-cancer specific	58
10	77	M	24.2	Unknown	No	12	2	Ileal conduit	10	lung	Disseminated	Chemotherapy	Partial	Alive	11
10	74	M	22.2	Unknown	No	14	1	Orthotopic neobladder	11	lung	5	Chemotherapy	Partial	Alive	33
3	59	M	20.0	Unknown	No	13	2a	Ileal conduit	12	cerebral	3	Unknown	None	Dead, Cancer Specific	18
5	75	M	22.7	Unknown	No	16	2b	Ileal conduit	12	Lung; liver; axillary nodes	Disseminated	Chemotherapy	None	Dead, Cancer Specific	20
7	78	M	24.5	Unknown	Yes	30	1	Ileal conduit	13	Bone	5	Unknown	Partial	Dead, Cancer Specific	61
5	66	M	23	Unknown	Yes	20	2b	Orthotopic neobladder	14	Liver; bone (axial); lungs	Disseminated	Chemo+radiotherapy	None	Dead, Cancer Specific	18
3	72	M	24.2	Unknown	No	3	1	Sigmoid neobladder	18	Retroperitoneal lymph nodes; liver	Disseminated	Unknown	Partial	Dead, Cancer Specific	36
3	75	M	28.7	Unknown	No	10	1	Ileal conduit	18	upper urinary tract	1	Unknown	None	Dead, Cancer Specific	24
3	70	M	27.4	Unknown	No	6	2b	Orthotopic neobladder	18	Pelvic mass	1	Unknown	Partial	Dead, Cancer Specific	36
4	74	M	29.1	yes	No	17	2b	Orthotopic neobladder	18	Lung; Liver	Disseminated	Chemotherapy	Partial	Alive	19
2	79	M	31.8	no	No	35	2a	Ileal conduit	19	lung; cerebral	3	Chemotherapy	None	Dead, Cancer Specific	22
2	79	M	21.3	no	No	0	2b	Ileal conduit	22	Inguinal lymph nodes; Corpora Cavernosa	5	surgery	Partial	Alive	30
1	58	M	21.8	yes	No	7	1	Orthotopic neobladder	24	bone (scapula); lung	3	Chemotherapy and surgery	Complete	Alive	60
1	68	M	24.4	no	No	14	2a	Ileal conduit	24	paraortic lymph node	1	chemotherapy and surgery	Complete	Alive	95
4	74	F	25.9	yes	No	21	2b	Orthotopic neobladder	24	pelvic mass	1	Chemotherapy	Partial	Alive	24
4	62	M	28.7	yes	No	21	2b	Orthotopic neobladder	24	Pelvic mass; Lung	4	Chemotherapy	Partial	Alive	24

Albisinni et al, J urol, under revision

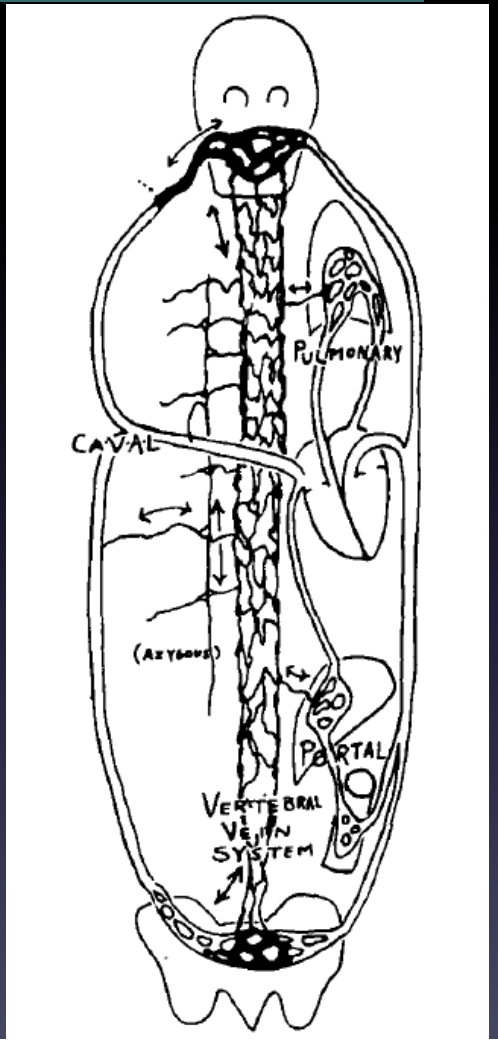
The Venous Plexus of Batson

- Role in the spread of pelvic malignancies and infections

- CO_2 insufflation=modification of peritoneal physiologic pH, increase in vascular permeability and modification in adhesion molecules

- High-flow insufflation and exsufflations (long and bleeding procedure) = squeezing of hollow organs and of bladder pedicle

Hypothesis: Pneumoperitoneum and repeated high-flow insufflations increase the release of tumor emboli in the Batson's plexus with consequent unexpected metastasis after minimally-invasive RC



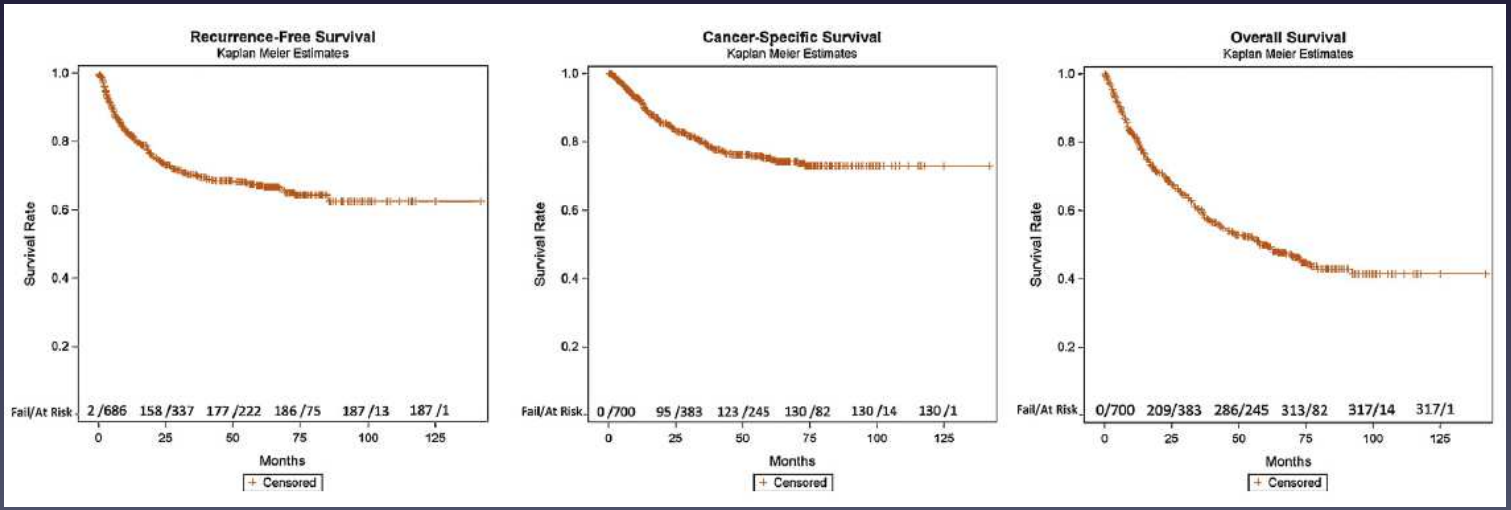
From Batson OV: The function of the vertebral veins and their role in the spread of metastases. Arch Surg 112:138–149, 1940.

RARC – Long term Oncologic FU

- Current long-term retrospective series support the non-inferiority of a MI approach
  - *Raza Eur Urol 2015 (743pts, FU 67mo)*
  - *Snow-Lisy Eur Urol 2014 (121pts, FU 66mo)*
  - *Yuh J Endourol 2014 (162pts, FU 52mo)*

- Long term RFS comparable to large open series (although selection bias).

RARC	Open (Stein JCO 2001, Maderbascher JCO 2003)
• 5yr RFS: 63-74%	62-68%
• 5yr CSS: 66-80%	
• 5yr OS: 48-54%	59-66%



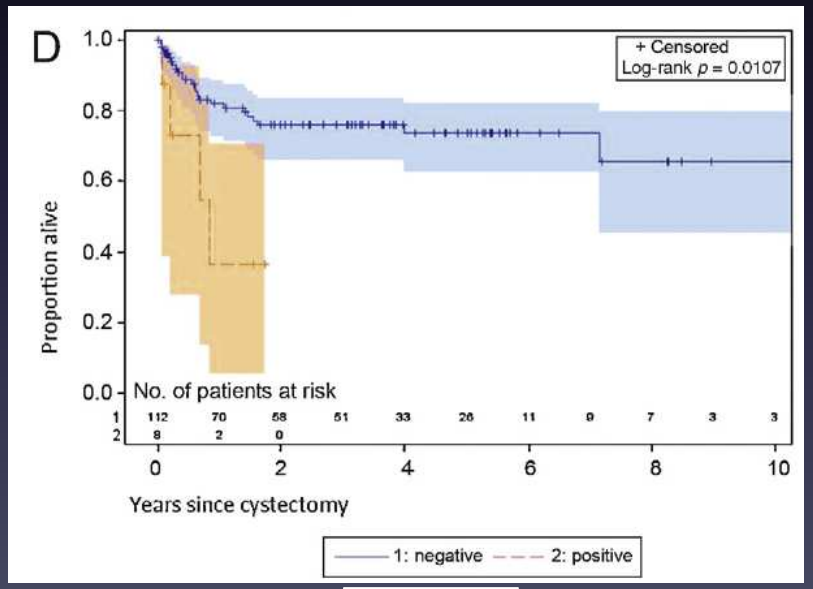
Internation RARC consortium, Raza Eur Urol 2015

RESULTS – Oncologic FU

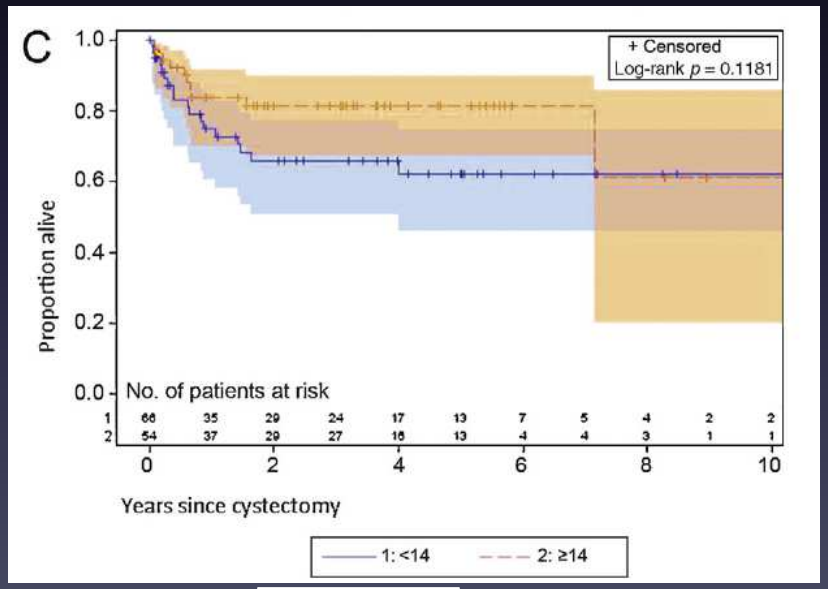
Oncologic outcomes are highly dependant on pTNM and margin status – surgery MUST be impeccable

Lymphadenectomy MUST be extended

Already known from ORC, but stressed in RARC



If PSM+



If <14LNs

Snow-Lisy, Eur Urol 2014

ONCOLOGIC FAILURES

Recurrence Patterns After Open and Robot-assisted Radical Cystectomy for Bladder Cancer

Daniel P. Nguyen [a,b,], Bashir Al Hussein Al Awamlh [a], Xian Wu [c], Padraic O'Malley [a], Igor M. Inoyatov [a], Abimbola Ayangbesan [a], Bishoy M. Faltas [d], Paul J. Christos [c], Douglas S. Scherr [a]*

EUROPEAN UROLOGY 68 (2015) 399–405

Variable	ORC	RARC
Any recurrence [a]	33/79 (42)	57/158 (36)
Local recurrence [a]	15/65 (23)	24/136 (18)
Cystectomy bed	11 (73)	14 (58)
PLND template	6 (40)	12 (50)
Distant recurrence [a]	26/73 (36)	43/147 (29)
Lung	9 (35)	14 (33)
Liver	9 (35)	10 (23)
Bone	12 (46)	16 (37)
Extrapelvic lymph node	4 (15)	10 (23)
Peritoneal carcinomatosis	2 (8)	9 (21)
Other (brain, adrenal)	3 (12)	0
Secondary urothelial carcinoma	0	4
Upper urinary tract	0	3 (75)
Urethra	0	1 (25)

- RARC was associated to a higher risk of developing peritoneal carcinosis and distant LN metastasis

"Effects of RARC such as insufflation, pneumoperitoneum, quality of resection, lymph node dissection, methods for lymph node extraction, and their effect on oncologic efficacy remain unproven." *"The continued advancement of RARC depends on this."*

Tim Wilson

RARC – Long term Oncologic FU

Can the MI approach be blamed for a poor oncologic outcome?

- Oncologic failures do exist! Nguyen, Eur Urol 2015; Albisinni, J Urol 2016; Saar, Eur Urol Supp 2014
- After RARC, more peritoneal carcinosis (21% vs 8%) and extrapelvic nodal metastases (23% vs 15%).
- Unusual metastatic landing sites reported
- In the International Robotic Cystectomy Consortium, 6 early oncologic failures and 3 port site metastases

Variable	ORC	RARC
Any recurrence [a]	33/79 (42)	57/158 (36)
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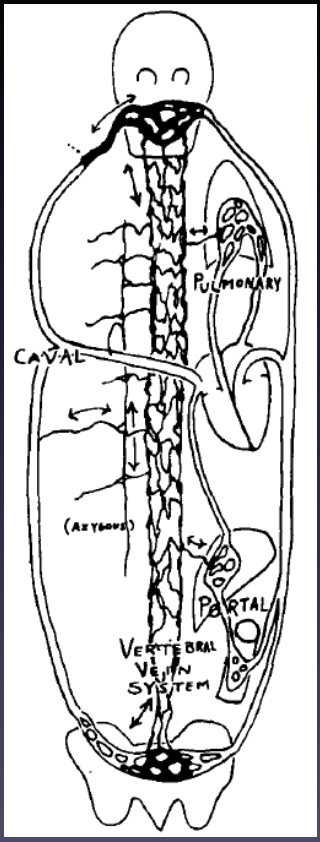
Lung	9 (35)	14 (33)
Liver	9 (35)	10 (23)
Bone	12 (46)	16 (37)
Extrapelvic lymph node	4 (15)	10 (23)
Peritoneal carcinomatosis	2 (8)	9 (21)
Other (brain, adrenal)	3 (12)	6
Secondary urothelial carcinoma	0	4
Upper urinary tract	0	3 (75)
Urethra	0	1 (25)



Batson, 1940

RARC vs ORC

- Limited data on well designed RCTs *(Bochner Eur Urol 2015;Parekh J Urol 2013; Nix Eur Urol 2010)*

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

European Association of Urology

Platinum Priority – Bladder Cancer

Editorials by Urs E. Studer on pp. 1051–1052 of this issue and by Mihir M. Desai and Inderbir S. Gill on pp. 1053–1055 of this issue

Comparing Open Radical Cystectomy and Robot-assisted Laparoscopic Radical Cystectomy: A Randomized Clinical Trial

Bernard H. Bochner[a,], Guido Dalbagni[a], Daniel D. Sjoberg[b], Jonathan Silberstein[a,c], Gal E. Keren Paz[a], S. Machele Donat[a], Jonathan A. Coleman[a], Sheila Mathew[a], Andrew Vickers[b], Geoffrey C. Schnorr[b], Michael A. Feuerstein[a], Bruce Rapkin[d], Raul O. Parra[a], Harry W. Herr[a], Vincent P. Laudone[a]*

[a] *Urology Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, USA;* [b] *Department of Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center, New York, NY, USA;* [c] *Department of Urology, Tulane University School of Medicine, New Orleans, LA, USA;* [d] *Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, NY, USA*

- 60 RARC vs 58 ORC
- No difference PSM, LN yield, complications, hospital stay, QoL at 3 and 6 mo
- RARC +4000$ for neobladder, +2000$ for ileal conduit

Solutions preventing failures?

- ✓ Neoadjuvant chemotherapy (NAC) in all patients candidates for MI cystectomy??
  - Only 1/27 patients in our cohort who experienced unexpected progressions had NAC

- ✓ SurgiQuest Airseal® ??

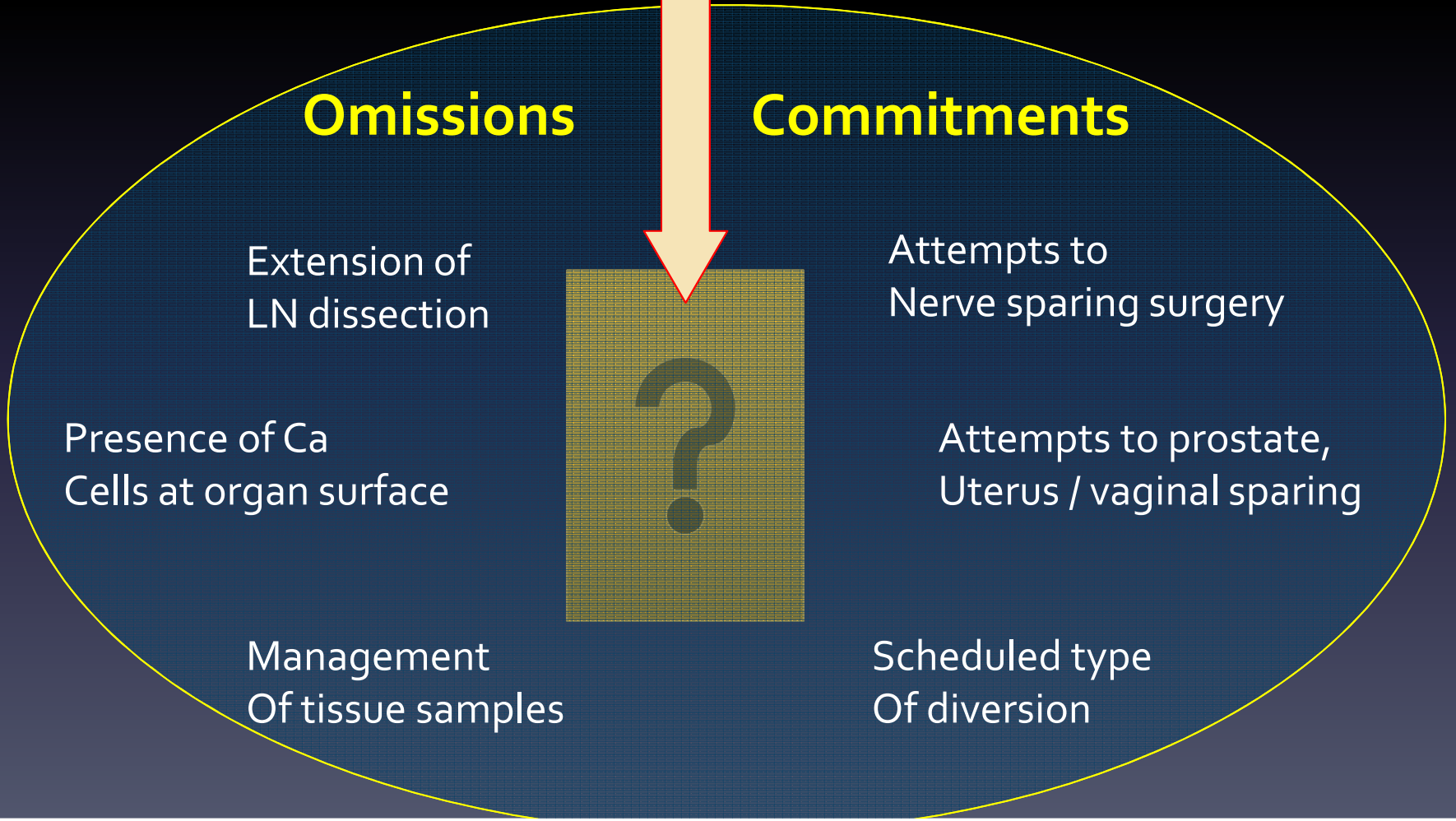
- ✓ Markers to identify patients at risk??
- ✓ **Open cystectomy…in any doubt !!!**

Future Perspectives ??

- Outcomes of radical cystectomy have not significantly changed in the last 40 years…
- Impact of minimally-invasive cystectomy in the elderly
- Neoadjuvant and adjuvant therapy
- Quality of Life after LRC
- *We have the techniques.*
  It is now time to tackle the biology of urothelial cancer!

„ Radical cystectomy is the best way to treat invasive bladder cancer“

Prognosis of cancer




thank you for your attention!