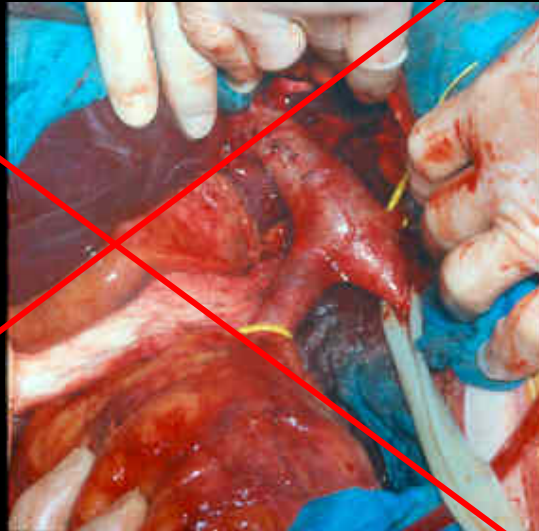


LAPAROSCOPIC URO-ONCOLOGY: WHAT'S GOING ON?

Ralph V. Clayman, M.D.
University of California
Irvine

BIG TUMOR = BIG INCISION



THE ADVENT OF LAPAROSCOPIC ONCOLOGY

History: A Century of Progress

1877: Nitze - cystoscope

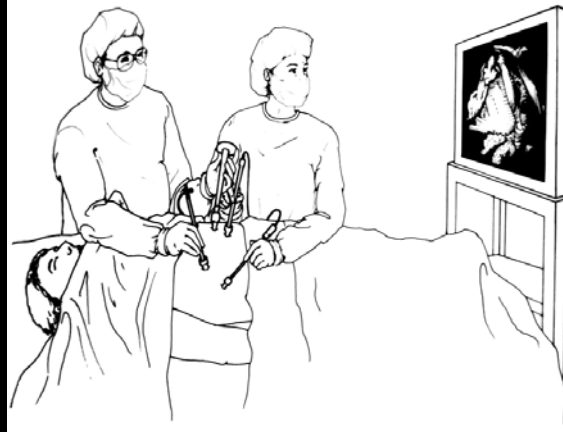
1901: Kelling -
pneumoperitoneum

1910: Jacobsen –
diagnostic laparoscopy

1980: Semm -
appendectomy

1987: Mühe –
cholecystectomy

1990: Clayman / Kavoussi
– nephrectomy for
cancer



LAPAROSCOPIC ONCOLOGY: INDICATIONS

- **RENAL CANCER**
 - Adenocarcinoma
 - Upper tract transitional cell cancer
- **PROSTATE CANCER**
- **TESTIS CANCER**
- **BLADDER CANCER**
- ~~**ADRENAL CANCER**~~

EVALUATING REASONABLENESS: THE FOUR E'S

Efficacy: success of the procedure

Efficiency: operative time

Equanimity: postop pain / morbidity /
hospital stay / convalescence

Economy: global costs and charges

LAPAROSCOPIC ONCOLOGY: INDICATIONS

- **RENAL CANCER**
 - Adenocarcinoma
 - Upper tract transitional cell cancer
- **PROSTATE CANCER**
- **BLADDER CANCER**
- **TESTIS CANCER**
- ~~**ADRENAL CANCER**~~

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The Journal of Urology
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American Urological Association Inc.

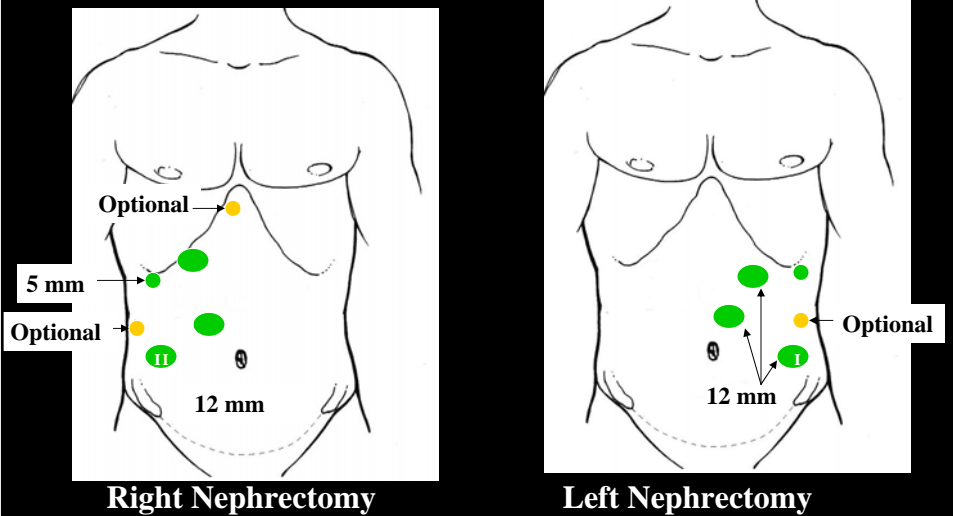
Vol. 146, 278 - 282,
Printed in U.S.A.

LAPAROSCOPIC NEPHRECTOMY: INITIAL CASE REPORT

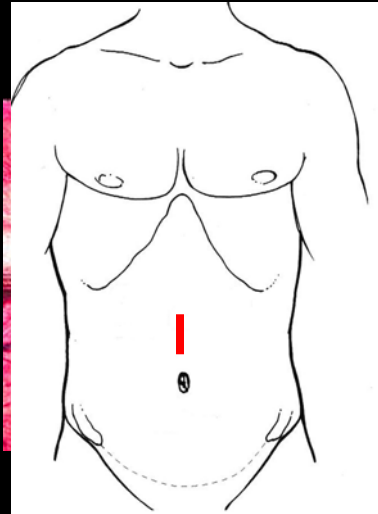
RALPH V. CLAYMAN, LOUIS R. KAVOUSSI, NATHANIEL J. SOPER, STEPHEN M. DIERKS,
SHIMON MERETYK, MICHAEL D. DARCY, FREDERICK D. ROEMER, EDWARD D. PINGLETON,
PAUL G. THOMSON AND STEPHENIE R. LONG

From the Department of Surgery (Division of Urologic Surgery) and Radiology, and Division of General Surgery, Mallinckrodt Institute of Radiology, Washington University of School of Medicine, St. Louis, Missouri, and Cook Urological Inc., Spencer, Indiana

TRANSPERITONEAL "PURE": "LATERAL INSUFFLATION AND PORT PLACEMENT"



OTHER OPTIONS: HAND-ASSIST



LAPAROSCOPIC RADICAL NEPHRECTOMY

<u>Literature review:</u>	<u>Lap.</u>	<u>Open</u>
Patients:	644	173
O.R. time:	3.8 hrs.	3.2 hrs.
EBL:	208 cc	435 cc
MSeq:	36 mg.	73 mg.
Hosp. stay:	3.8 days	6.2 d.
Complications:	14%	20%
Recovery:	3.4 wks.	8.1 wks.
NED (.5-5 yrs.):	95%	91%

(7 series: Dunn, Clayman, Cadeddu, Kavoussi, Ono, Barrett, Janetschek, Jeschke, Chan – (all with > 50 cases) - 1998-2001)

LAPAROSCOPIC HA-TP RADICAL NEPHRECTOMY: LITERATURE REVIEW

Patients:	144
O.R. time:	3.6 hrs.
MS eq (mg):	32
Complications:	37%*
Hospital stay:	3.3 d.
NED at 10 mo.:	97%

***(one-third were wound complications)**

(Batler, Stifelman, Nakada, and Nelson: 2001-2002)

LAPAROSCOPIC RP RADICAL NEPHRECTOMY: LITERATURE REVIEW

Patients:	109
O.R. time:	2.7 hrs.
Complications:	10%
Hospital stay:	1.5 d.
NED at 15 mo.:	97%

(Gill and Abbou: 1999-2001)

RENAL ROUTE: TP or RP?

Cleveland Clinic: prospective, randomized!

	TP	RP
Patients:	43	45
O.R. time:	3.4 hrs.	2.6 hrs.*
Vasc. Control:	1.5 hrs.	0.8 hrs.*
EBL:	190 cc	233 cc
Hosp. stay:	1.7 d.	1.6 d.
MS eq.	26 mg.	21 mg.
Complic.:	12% /16%	4%/ 12%

*p<.05

(Gill, I. et al.: J. Urol. 167: abst. 78, 2002)

LAPAROSCOPIC RADICAL NEPHRECTOMY: FOLLOW-UP

Long-term data:

	Lap.	Open
Patients:	65	69
Median period (mos):	55	65
Rec. free surv.:	92%	90%
Cancer spec. surv.:	96%	92%

(3 centers: St. Louis, Saskatoon, Nagoya)

(Portis, A.J., et al.: J. Urol. 167: 1257, 2002.)

\$\$\$\$\$ and \$ense

(A MATTER OF TIME AND EXPERIENCE!)

Report	OR time	OR costs	Hosp. stay	Lap vs. Open (\$ difference)
WU/2000	5.5 hrs.	\$6300	3.4 d.	+\$2100
UTSW /2002	<4.7 hrs.	<\$5500	< 5.8 d.	-\$1,211
Mass. Gen'l / 2004	3.3 hrs.	-----	3.0 d.	-\$2,600

(Dunn, M. et al.: J. Urol. 164: 1153, 2000; Lotan, Y., Gettman, M. T., Cadeddu, J. A., et al.: 2002; Lee, B. et al.: J. Urol. 171 (suppl): 44, 2004)

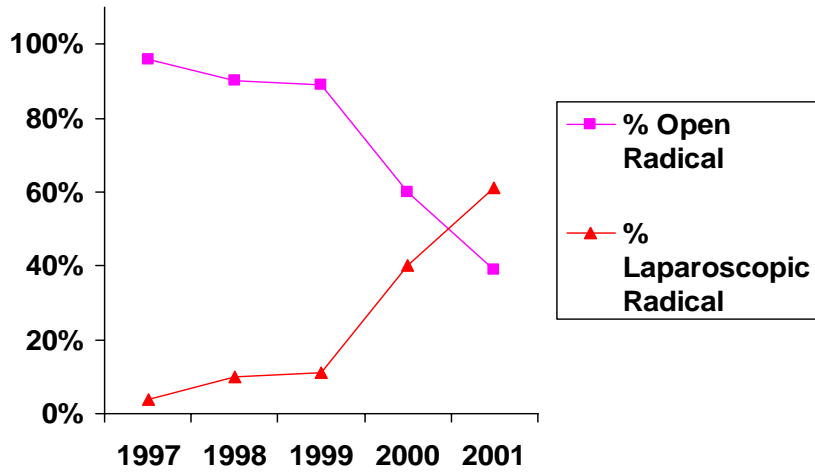
LAPAROSCOPIC vs. OPEN RADICAL NEPHRECTOMY

Summary:

Efficacy: =
Efficiency: - TP + RP
Equanimity: ++
Economy: +

LAPAROSCOPIC RADICAL NEPHRECTOMY IS THE STANDARD OF CARE AT MANY MAJOR MEDICAL CENTERS.

ENDO-ONCOLOGY: A SIGN OF THE TIMES



(Bhayani, S., Landman, J. et al.: Urology 62:821-826, 2003)

LAPAROSCOPIC NEPHRON SPARING SURGERY (NSS): PARTIAL NEPHRECTOMY and WEDGE EXCISION

“<” RADICAL SURGERY FOR RENAL CELL CANCER

Nephron-sparing surgery:

1. Goal: for tumors \leq 4 cm., excise the tumor but spare the kidney.
2. Application: *initially* just for patients with a solitary kidney or pre-existing renal insufficiency.
3. Application: *currently* being applied to patients with a normal contralateral kidney

NEPHRON SPARING SURGERY: RATIONALE?

Demographics for renal cell cancer:

	1989	2001
Incidental:	56%	73%
Tumor size:	7.9 cm.	5.2 cm
pT1:	8%	43%
M1/N1:	36%	8%
NSS:	8%	45%

(1378 patients)

(Russo, P. et al.: Sloan Kettering: 2002)

A CAVEAT

Imaging \neq Pathology for small lesions:

Among 88 nephrectomies for renal masses ≤ 3.5 cm, 28% were benign.

In contrast, among 123 nephrectomies done for renal masses > 3.5 cm, only 8% were benign.

(Young, P. et al.; Mayo Clinic Jacksonville; 2002)

THE CONUNDRUM OF THE SMALL RENAL MASS

Shoot first – ask diagnosis later:

Fine needle aspirate is **inaccurate**:

Mayo Clinic series – 20% false negative and 34% false positive.

(Dehcet, C. B., Zinke, H., et al.: J. Urol. 162: 1282, 1999)

NEPHRON SPARING SURGERY: RATIONALE?

Patients with a normal contralateral kidney:

	Rad. Neph.	NSS
Cases:	164	164
Recurrence (contra):	0.9%	1%
Metastases:	4.9%	4.3%
Recurrence (ipsilat):	0.8%	5.4%
Proteinuria:	55%	35%
Chronic renal insuff.*:	22%	12%

(1966-1999: matched by tumor grade, size, age, sex, path. T stage, and year of surgery – 10 year follow-up)

*(creat. > 2.0 mg/dl)

(Lau, W., et al.: Mayo Clinic Proceedings 75: 1233, 2000)

MARGINS: HOW MUCH IS ENOUGH?

1990's: Traditional margin size: 10 mm

(Marshall, F.: Operative Urology p.272, 1996)

2000: The shrinking margin: 5mm → 2.5 mm

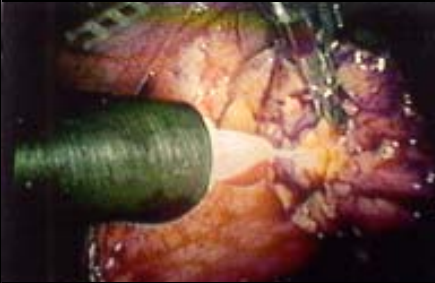
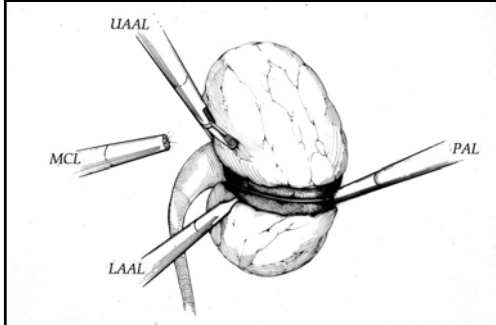
- 63 PN patients / 5 yr. follow-up – took 10 mm margin – found 4 (6%) satellite lesions at mean of 5.3 mm from main lesion; no correlation with grade; no recurrences; 93% were within 2.5 mm of lesion;

(Zucchi, A. et al. J. Urol. 169: 905, 2003)

- 44 PN patients / 4 yr. follow-up – no recurrences if a negative margin: mean margin 2.5 mm (0.5-7mm)

(Sutherland, S., Resnick, M. et al.: J. Urol. 167: 61, 2002)

LAPAROSCOPIC WEDGE/PARTIAL NEPHRECTOMY: “NO HILAR CONTROL”

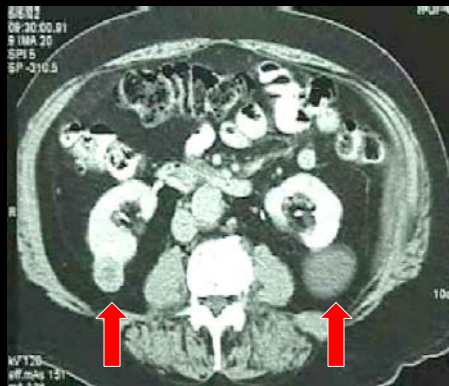


WEDGE EXCISION (without hilar control)

Standard laparoscopy:

Lesion: > 50%
exophytic / < 10 mm
depth into the
parenchyma

Approach:
Transperitoneal for
anterior lesion.
Retroperitoneal for
posterior lesion.



New Technologies for Hemostasis

1. Argon Beam Coagulator
2. Fibrin Glue
3. Surgicel
4. Floseal
5. Tissuelink
6. Microwave



LAPAROSCOPIC HAND-ASSISTED NSS: RENAL CANCER

Sutureless, hand-assisted nephron sparing surgery:

Patients:	39
O.R. time:	3.2 hrs.
Method:	No hilar control; no suturing; ABC + fibrin soaked gelfoam
Pathology:	73% with renal cancer
Margin negative:	38/39 (no recurrence at 1.5 yrs.)
EBL:	391 cc
Transfusion:	10%
Hosp. stay:	3.3 d.
Complications:	5% (1 urine leak – stented; 1 postop bleed)

(Seifman, B. and Wolf, J. S.: Univ. of Michigan: 2002)

LAPAROSCOPIC NSS EXCISION: RENAL CANCER

Patients: 48 (87% of NSS pts.)
Tumor size: 2.1 cm (0.8 -7.0 cm)
O.R. time: 2.1 hrs.
EBL: 130 cc (20-600 cc)
Margins: ??? mm / 64% RCC
Compl.: 5% intraop / 14% postop
▲ creat.: ???
Hosp. stay: 2.4 d.

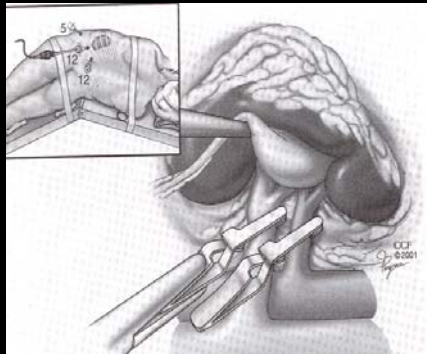
(N.B.: no hilar control, no suturing, no transfusions; used Tissuelink, ABC, Fibrillar, and Surgicel) (Castle, E., et al. AUA: Abst. # 6620, 2004)

LAPAROSCOPIC NSS EXCISION: RENAL CANCER

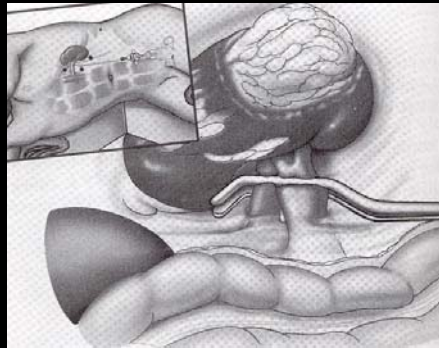
Patients: 12 (92% of NSS patients)
Tumor size: 2.5 cm
Approach: TP (6) RP (6)
O.R. time: 3.6 hrs.
EBL: 116 cc
Margins: 2.8 mm* (all -) / 66% RCC
▲ creat.: 0.1 mg/dL (at discharge)
Hosp. stay: 2.8 d.

(2 minor complications; no stents; no transfusions; ABC, fibrin glue, Surgicel, fibrin glue) *(0.1-5 mm) (Finley, D. et al. – UCI – WCE: 2003)

LAPAROSCOPIC WEDGE/PARTIAL NEPHRECTOMY: “HILAR CONTROL”



Bulldogs



Satinsky

(I. Gill: 2002)

LAPAROSCOPIC PARTIAL NEPHRECTOMY / WEDGE EXCISION: STATE OF THE ART

Cleveland Clinic:

	Lap.	Open
Patients:	100	100
Tumor size:	2.8 cm.	3.3 cm.
Final path:	RCC = 68%	NS
O.R. time:	3.0 hrs.	3.9 hrs.
Ischemic time:	28 min.	18 min.
Hosp. stay:	2 d.	5 d.
Convalescence:	4 wks.	6 wks.
Complications (i./p)	5% / 11%	0% / 2%

(margins 4 mm in both groups, creat. = both groups)

(Gill, I. S., Novick, A. C., et al.: 2002)

N.B.: Among 7 patients with solitary kidney, creatinine rose 0.5 mg/dl.

TO CLAMP OR NOT TO CLAMP?

	Clamped	Not clamped
Patients:	16	12
Method:	stent cooling 2 bulldogs	US bipolar*
Ischemia:	27 min.	None
O.R. time:	2 hrs.	3 hrs.
EBL:	270 cc.	708 cc.
Creat. change:	0.4 mg/dl	0.04 mg/dl
Renal cancer:	63%	67%
Complications:	50%**	50%
Hosp. stay:	4.7 d.	4.7 d.

*(no argon beam or fibrin glue used)

** (Complications: perirenal hematoma, acute renal failure, postoperative hemorrhage, and reexploration all in clamped group)

(Guillonau, B. et al.: J. Urol. 169: 483,2003)

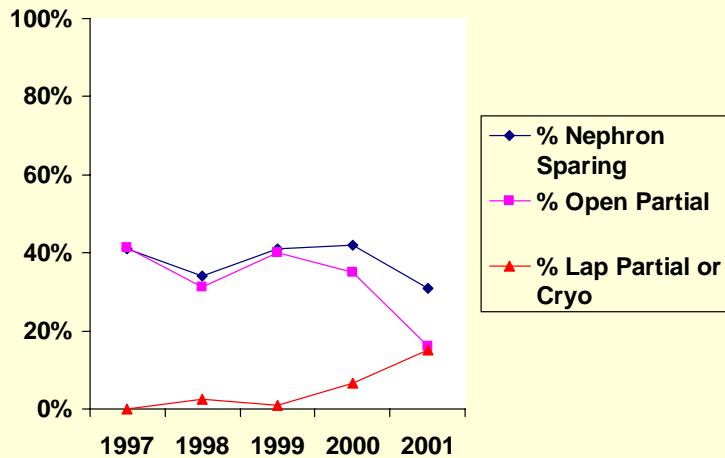
LAPAROSCOPIC vs. OPEN PARTIAL NEPHRECTOMY / WEDGE EXCISION

Summary:

Efficacy:	=
Efficiency:	+/-
Equanimity:	++
Economy:	?

Laparoscopic partial nephrectomy / wedge excision is still evolving.

LAPAROSCOPIC NEPHRON SPARING SURGERY: PARADIGM SHIFT

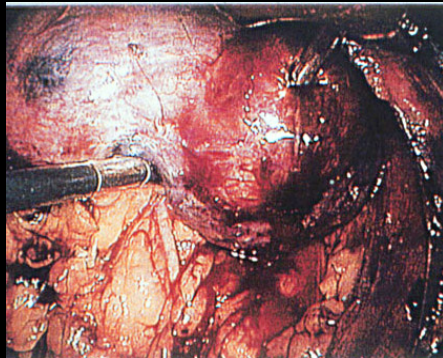


(Bhayani, S., Landman, J. et al.: Urology 62:821-826, 2003)

TISSUE ABLATION: NEEDLE BASED THERAPIES

1. Cryotherapy
2. Radiofrequency
3. Microwave thermotherapy
4. Interstitial laser
5. Interstitial photon radiation
6. Chemoablation
 - a. Ethanol
 - b. Acetic acid

RENAL CRYOABLATION



RENAL CRYOSURGERY: CLINICAL EXPERIENCE

Cleveland Clinic :

Patients: 50
Tumor size: 2.1 cm
(1-4 cm)
Approach: Lap. (RP)
Method: 2x freeze
O. R. time: 2.6 hrs.
Hosp. stay: 1.8 days

Follow-up: 30/31 bx.
neg. at 3-6 mos.

MRI scans: at 3 mos.,
40% dec. in size

***(1 positive biopsy at 9 mos.; 1**
lesion growing at 18 mos. -
both had rad. neph.)

(Sung, G., Gill, I., et al. : J. Urol.
165 (suppl.) 158, 2001)

“ \leq 3 cm RENAL LESIONS”: WHAT TO CHOOSE?

Cryoablation (laparoscopic) vs. Partial Nephrectomy:

	Cryo.	LPN
Patients:	78	153
O.R. time:	3.1 hrs.	3.2 hrs.
EBL:	100	211
Hosp. Stay:	51 hrs.	65 hrs.
Comp.:	20%*	6%
Follow-up:	25 mos.	6 mos.
Recurrence:	2.6%**	0.7%

(*cryo. had fewer major complications; **MRI follow-up)

(Desai, M., Gill, I. et al.: Ju. Urol. 171(suppl): 10, 2004)

THE NEXT STEP: PERCUTANEOUS CRYOABLATION

Open MRI guided:

Patients: 90
 Renal tumors: 3 cm (max. 5 cm)
 Goal: triple freeze /thaw: -180°C
 with 5 mm margin
 2-4 probes* used
 (N.B.: failed in 8% to complete therapy)
 O.R. time: 1.3 hrs.

Complications:

maj./minor 1% / 8.8%
 Hosp. stay: 23 hr. (96%)
 Follow-up: 2.5 yrs. (1-4.0 yrs.)
 Retreatment: 13%
 Surgery: None
 Metastases: None
 CSS: 100%
 (Shingleton, W. et al.: J. Urol. 171 (suppl.): 463, 2004)

RF FUTURES: MORE POWER...LESS FAILURE

RADIONICS "COOL TIP" Needle: 17.5 gauge (200 watts)

Study group: 24 tumors treated in 17 pts. via CT (9) or Lap. (15)
(10 exo/14 endophytic (3 medullary))

Treatment: 1-4, 12 minute cycles – goal 70°C

Complications: 1 UPJ obstruction with open repair*; 2 transient hematurias; no transfusion; no change in creatinine; (treated 5 ant. lesions)

	Lesion size	HU
Preop.:	2.3 cm (1.2-2.9)	+69 (\pm 36)
1.1 yr. (.9-1.9):	1.6 cm (\pm 0.1)	+ 1 (\pm 6)

Caveat: Only 1 recurrence; *lesion resected – complete necrosis
(Hwang, J., Walther, M., et al.: J. Urol. 171: 1814, 2004)

THE PROBLEM OF MINIMALLY INVASIVE SURGERY: LOSS OF PATHOLOGICAL STAGING

RCC PROGNOSIS: PATHOLOGICAL STAGING vs. A CLINICALLY BASED MODEL

Johns Hopkins' Clinical Model:

- 296 patients with RCC (1990-1999)
- Follow-up: 4 yrs. (0.5-11)
- Selected for 91%, 5 yr. + 89%, 10 yr. survival.
- Only presentation and clinical size were of significance on multivariate analysis!
- Recurrence risk = $1.55 \times \text{Syx (0,1)} + .19 \times \text{clinical tumor size (cm.)}^*$

*(Cox proportional hazards regression analysis)

(Yaycioglu, O., Epstein, J., Marshall, F., Kavoussi, L. et al.: Urol. 58: 141, 2001)

(Patard, J. et al.: 2002 - similar formula based on 660 patients:

$1.28 \times \text{syx (0,1)} + .13 \times \text{clinical tumor size}$)

RCC PROGNOSIS: PATHOLOGICAL STAGING vs. A CLINICALLY BASED MODEL

Johns Hopkins' Clinical Model:

Recurrence risk:	Low (≤ 3)	High (> 3)
1 yr.	99%	79%
2 yr.	98%	67%
3 yr.	92%	57%

- Pathological staging would have shown only 45% of patients to be low risk, whereas the clinical model showed 79% of patients to be low risk.
- ? Implications for follow-up regimen and use of "yet to be developed" adjunctive therapy.

(Yaycioglu, O., Epstein, J., Marshall, F., Kavoussi, L. et al.: Urol. 58: 141, 2001)

LAPAROSCOPIC ONCOLOGY: INDICATIONS

➤ RENAL CANCER

- Adenocarcinoma
- Upper tract transitional cell cancer

➤ PROSTATE CANCER

➤ TESTIS CANCER

➤ BLADDER CANCER

➤ ~~ADRENAL CANCER~~

JOURNAL OF LAPAROENDOSCOPIC SURGERY
Volume 1, Number 6, 1991
Mary Ann Liebert, Inc., Publishers

Brief Clinical Report

Laparoscopic Nephroureterectomy: Initial Clinical Case Report

RALPH V. CLAYMAN, M.D.,^{1,2} LOUIS R. KAVOUSSI, M.D.,³
ROBERT S. FIGENSHAU, M.D.,¹ PARAMJIT S. CHANDHOKE, M.D.,¹
and DAVID M. ALBALA, M.D.⁴

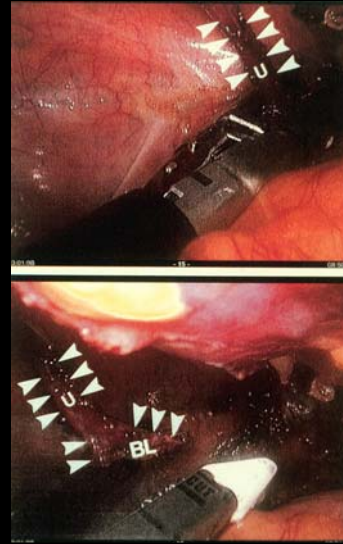
LAPAROSCOPIC TP NU: “TWO STEPS”

Nephroureterectomy:

lateral decubitus
hand – assisted with
intact removal

Distal ureter:

dorsal lithotomy
visualize staple line



LAPAROSCOPIC NEPHROURETERECTOMY: WORLDWIDE EXPERIENCE

Patients:	125
O. R. time:	4.7 hrs.
Hosp. stay:	5.0 days
Convalescence:	5.6 weeks
Complications:	30%
Recurrence:	28% (20 mos.)
Metastases:	7% (20 mos.)

(5 series: Chung, Keeley, Salomon, Shalhav, Gill, Jarrett: 2001)

LAPAROSCOPIC RP NU:

<u>Cleveland Clinic:</u>	Lap.	Open
Patients:	60	35
O.R. time:	3.5 hrs.	4.7 hrs.
EBL:	242 cc.	696 cc.
Conversion:	4%	NA
Hosp. stay:	2.3 d.	6.6 d.
Complications:	12%	29%

(Gill, I.S., et al.: J. Urol. 164: 1513, 2000)

(Murphy, D., Gill, I. et al.: JU 165 (suppl): 3, 2001)

LAPAROSCOPIC NEPHROURETERECTOMY

	Lap.	Open
>/= Gr. II:	13	13
Gr. III-IV:	54%	33%
Follow-up:	24 mos.	43 mos.
Bladder recur.:	23%	54%
Time to recur.:	19 mos.	23 mos.
Metastases:	31%*	23%*
CSS:	77%	77%

*(all metastatic disease presented within 24 months)

(Shalhav, A., Clayman, R., et al.: J. Urol. 163: 1100, 2000)

LAPAROSCOPIC vs. OPEN RADICAL NEPHROURETERECTOMY

Summary:

Efficacy:	=
Efficiency:	-/+
Equanimity:	++
Economy:	?

LNU IS STILL EVOLVING BUT IS ALREADY CONSIDERED
STANDARD OF CARE AT MANY
MAJOR LAPAROSCOPIC MEDICAL CENTERS.

LAPAROSCOPIC ONCOLOGY: INDICATIONS

- **RENAL CANCER**
 - Adenocarcinoma
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- **PROSTATE CANCER**
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- ~~ADRENAL CANCER~~

LAPAROSCOPIC RADICAL PROSTATECTOMY

Initial series (1991-1995):

Patients:	9
O.R. time:	9.2 hrs.
Catheter removal:	14 d.
+ margins:	44%
Continence:	66%
Erections:	50%

(Schuessler, W. W. et al.: Urol. 50:854, 1997)

CONCLUSION: 1995

**“Laparoscopic prostatectomy is not
an efficacious surgical alternative
to open prostatectomy for
malignancy.”**

W. W. Schuessler

L. R. Kavoussi

P. Schulam

R. V. Clayman

THE FRENCH CONNECTION

Guillonneau and Vallancien:

1998: Guillonneau and Vallancien at Mountsouris in Paris, develop a retrovesical approach to the laparoscopic radical nephrectomy. They commit to performing 40 procedures. After 20 cases, their case time begins to fall and the procedure now appears to be feasible.

LAPAROSCOPIC RADICAL PROSTATECTOMY

A DECADE LATER (2001-2002):

Patients:	1,483
O.R. time:	4.0 hrs.
Hospital stay:	5 d.
Catheter removal:	5.4 d.
+ margins:	3% (2a) / 12% (2b)
Outcome at 1 year:	
Cure:	96% (PSA < 0.1)
Continence:	81% (no pads)
Coitus:	64%

(Tuerk, Rassweiler, Abbou, Guillonneau, Vallancien: 2001-2002)

LRP: ECONOMIC\$

Hopkins Cost Computer Model:

Laparoscopic radical prostatectomy currently costs 20% more than open radical prostatectomy. It will become cost effective when:

O.R. time: 2.9 hrs.

Hosp. stay: < 24 hrs.

(Link, R., et al.: J. Urol. 171 (suppl.): 33, 2004)

REPORT CARD FOR LRP

EFFICIENCY: -/=

EFFECTIVENESS:

short-term: -/=

long-term: ?

EQUANIMITY: =/+

ECONOMY: -

IT IS STILL EVOLVING...

ROBOTIC REVELATION

Question:

Can a robotic interface transform a skilled open surgeon with **moderate** training in laparoscopy into a skilled laparoscopic surgeon?



“YES”

(Radical Prostatectomy: M. Menon)



ROBOTIC REVELATION

Question:

Can a robotic interface transform a skilled open surgeon with **no** training in laparoscopy into a laparoscopic surgeon?



ROBOTIC REVELATION

Answer: YES!

Training surgeon:

Experience with > 250 open radical prostatectomies, 1 day animal training course and two cadaveric radical prostatectomies with the da Vinci robot without a master surgeon teacher. No clinical training experience!

UCI Experience:

Patients:	145
Robot set-up:	0.3 hrs.
O.R. time:	3.8 hrs.
1st 4:	7.3 hrs.
2nd 5:	4.7 hrs.
9-35:	3.5 hrs.
36+:	3.1 hrs.
EBL:	101 cc.*
Total time:	3.5 hrs.
Hosp. stay:	27 hrs.

*(no transfusions)
(Ahlering, T.: J Urol Nov 2003)

ROBOTIC VS OPEN (SAME SURGEON)

Radical prostatectomy

(Open Last 60 Cases vs Robot 45-140):

EBL

OPEN = 418cc ROBOT = 101cc

HOSPITAL STAY

OPEN = 2.2d ROBOT = 1.1d

CONTINENCE at 3 months (0 pads)

OPEN = 76% ROBOT = 73%

pT2A/B POSITIVE MARGINS

OPEN = 9.1% ROBOT = 4.7%

(Ahlering, T. : UCI: Urology May 2004)

LAPAROSCOPIC ONCOLOGY: INDICATIONS

- **RENAL CANCER**
 - Adenocarcinoma
 - Upper tract transitional cell cancer
- **PROSTATE CANCER**
- **TESTIS CANCER**
- **BLADDER CANCER**
- ~~ADRENAL CANCER~~

TESTIS CANCER: RETROPERITONEAL NODE DISSECTION

<u>Clinical Stage 1:</u>	Janetschek	Rassweiler
Patients:	73	34
OR time (hrs.):	3.7	4.1
Conversion:	0%	12%
Hosp. (days):	3.3	5.3
+ nodes:	26%*	18%
+ ejac.:	100%	97%
Follow-up (yrs):	3.5	3.3
Recur (local):	1 (false -)	0%

*(2 cycles of chemo. – all tumor free at 3.5 yrs.)
(J. Urol. 163: 1793, 2000; Euro. Urol. 37: 251, 2000;)

TESTIS CANCER: RETROPERITONEAL NODE DISSECTION

<u>Post-chemotherapy:</u>	Janetschek	Kavoussi
Patients:	49	7
OR time (hrs.):	3.8	NA
Conversion:	0%	29%
Hosp. (days):	3.5	NA
Complications:	few/minor	57% (43% major)
Follow-up (yrs):	2.9	--
Recur (local):	0%	--

(J. Urol. 163: 1793, 2000; Urol. 60: 130, 2002;)

COST

Literature review:

- Overall, the LRPLND cost \$700 more than the open procedure (\$7800 vs. \$7100)
- The LRPLND becomes cost effective if operative time is < 3.6 hrs. and hospital stay is < 2.2 days.

(Ogan, K. et al. J. Urol. 168: 1945, 2002)

REPORT CARD FOR RPLND

EFFICIENCY: -/=

EFFECTIVENESS:

 short-term: =

EQUANIMITY: +

ECONOMY: -

LAPAROSCOPIC ONCOLOGY: INDICATIONS

➤ RENAL CANCER

- Adenocarcinoma
- Upper tract transitional cell cancer

➤ PROSTATE CANCER

➤ TESTIS CANCER

➤ BLADDER CANCER

➤ ~~ADRENAL CANCER~~

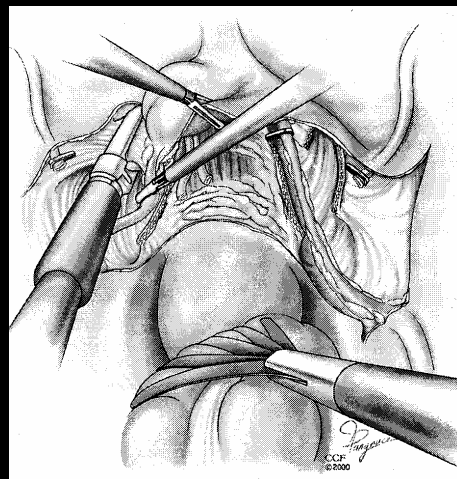
BLADDER CANCER

Laparoscopic Landmarks:

1992: Parra: simple
cystectomy

1992: Kozminski: ileal
conduit

1995: Puppo and
Sanchez de Badajoz:
independently report
radical cystectomy and
assisted ileal conduit



I. Gill: 2002

BLADDER CANCER: “RADICAL CYSTECTOMY AND MYRIAD DIVERSIONS”

	Continent			
	Ileal conduit*	Recto- sigmoid**	Studer *	Camey ***
Patients:	2	5	2	9
O.R. (hrs.):	11.5 /10	7.4	8.5/10	8.3
EBL (cc):	1200/1100	245	200/400	<500
Path:	pT4 & pT2b: (-) margins	pT1 pT3a	pT1	pT2
Hosp. stay (d):	6	10	5/12	NS

*(Anecdotally 13 more cases with OR time 6-8.5 hrs.)

(*Gill, I. S. et al.: Urol. 56: 26, 2000; ** Turk, I. et al.: J. Urol. 165: 1863, 2001; *Gill, I. S. et al.: J. Urol. 168: 13, 2002;

***Abdel-Hakim, A. M. et al. JE 16: 377, 2002)

BLADDER CANCER: “Laparoscopic-assisted”

Laparoscopic cystectomy and continent diversion:

Patients:	16
Patient age:	51-80 yrs.
O.R. time:	6.5-10 hrs.
Diversion:	Continent Studer pouch*
Hosp. stay:	5 days
Complications:	30% (1 pyelo/1BNC/1 dehydration)

*(bowel mobilized, pouch made via Pfannenstiel incision)

(Shanberg, A.: 2002)

**BLADDER CANCER:
“Laparoscopic Robotic”**

daVinci:

Radical cystectomy and
orthotopic neobladder: 2 cases/ 2.4
hrs. for cystectomy – extracorporeal
pouch formation with intracorporeal
robotic urethro-neobladder
anastomosis 3 hrs. (Menon, M. et
al.:2003)

**REPORT CARD:
LAPAROSCOPIC CYSTECTOMY
AND DIVERSION**



**SCHOOL IS
STILL IN SESSION...
TOO SOON TO TELL!**

IMPACT OF LAPAROSCOPY ON UROLOGIC ONCOLOGY

➤ RENAL CANCER

- Adenocarcinoma: **New Standard**
- Upper tract TCC: **Evolving Standard**

➤ PROSTATE CANCER: **Evolving Standard**

➤ TESTIS CANCER: **Evolving / Investigational**

➤ BLADDER CANCER: **Investigational**

➤ ~~ADRENAL CANCER~~

~~ADRENAL CANCER: ?~~

Anecdote:

At the NCI, Dr. McClellan Walther has completed a series of 21 laparoscopic adrenalectomies for adrenal cancer – there has been a 38% recurrence rate.

SURGERY: IMPACT OF SCIENCE

An Oslerian view:

**“Diseases that
harm
require
treatments
that
harm less.”**

