



# BÖBREK TÜMÖRLERİNİN CERRAHİ TEDAVİSİ



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**Üroloji Anabilim Dalı**

# Sunu Planı

- Genel Bilgiler
- Evrelerine Göre Cerrahi Tedavi Seçimi
- Hangi Tümöre Hangi Cerrahiyi Tercih Edelim
- Cerrahi Tedavide Sürrenalektomi
- Cerrahi Tedavide Lenfadenektomi
- Metastatik Tümörlerde Cerrahi
- Cerrahi Tedavide Sonuç
- Cerrahi Tedavi Videoları

# Böbrek tümörleri

- Tüm kanserlerin % 2-3
- Genellikle solid
- Tüm böbrek lezyonlarının %90'ı RCC
- E/K:1,5/1
- 60-70 yaşlarda en sık
- Etyoloji: Sigara, obezite, hipertansiyon
- Önleme: Sigara ve obezite ile savaş

# Böbrek tümörleri

- Onkolojik sonuçlar
  - Cerrahi, lokalize tümörlerde temel tedavi
  - Sağkalım, evre ve histopatolojik değişikliklere bağlı

Type	Percentage of RCC (~)	Advanced disease at diagnosis (T3-4, N+, M+)	Fuhrman Grade 3 or 4 (118)	CSS (HR)
cRCC	80-90%	28%	28.5%	referent
pRCC	6-15%	17,6%	28.8%	0.64 - 0.85
chRCC	2-5%	16,9%	32.7%*	0.24 - 0.56

CSS = cancer-specific survival; HR = hazard ratio.

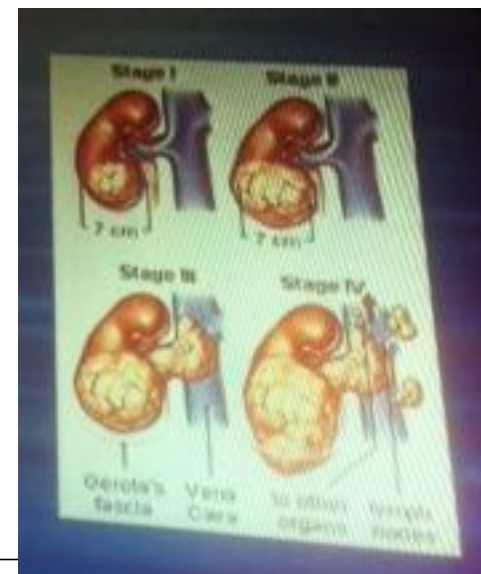
Table 3.5: Cancer-specific survival of surgically treated patients by histological type of RCC (estimated survival rate in percentage [95% CI])

Survival time	5 years (%)	10 years (%)	15 years (%)	20 years (%)
cRCC	71 (69-73)	62 (60-64)	56 (53-58)	52 (49-55)
pRCC	91 (88-94)	86 (82-89)	85 (81-89)	83 (78-88)
chRCC	88 (83-94)	86 (80-92)	84 (77-91)	81 (72-90)

CI = confidential interval

**T - Primary tumour**

TX	Primary tumour cannot be assessed
T0	No evidence of primary tumour
T1	Tumour $\leq 7$ cm in greatest dimension, limited to the kidney
T1a	Tumour $\leq 4$ cm in greatest dimension, limited to the kidney
T1b	Tumour $> 4$ cm but $\leq 7$ cm in greatest dimension
T2	Tumour $> 7$ cm in greatest dimension, limited to the kidney
T2a	Tumour $> 7$ cm but $\leq 10$ cm in greatest dimension
T2b	Tumours $> 10$ cm limited to the kidney
T3	Tumour extends into major veins or directly invades adrenal gland or perinephric tissues but not into the ipsilateral adrenal gland and not beyond Gerota's fascia
T3a	Tumour grossly extends into the renal vein or its segmental (muscle-containing) branches or tumour invades perirenal and/or renal sinus (peripelvic) fat but not beyond Gerota's fascia
T3b	Tumour grossly extends into the vena cava below the diaphragm
T3c	Tumour grossly extends into vena cava above the diaphragm or invades the wall of the vena cava
T4	Tumour invades beyond Gerota's fascia (including contiguous extension into the ipsilateral adrenal gland)

**N - Regional lymph nodes**

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in a single regional lymph node
N2	Metastasis in more than 1 regional lymph node

**M - Distant metastasis**

M0	No distant metastasis
M1	Distant metastasis

**TNM stage grouping**

Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T3	N0	M0
	T1, T2, T3	N1	M0
Stage IV	T4	Any N	M0
	Any T	N2	M0
	Any T	Any N	M1

UPDATE APRIL 2014

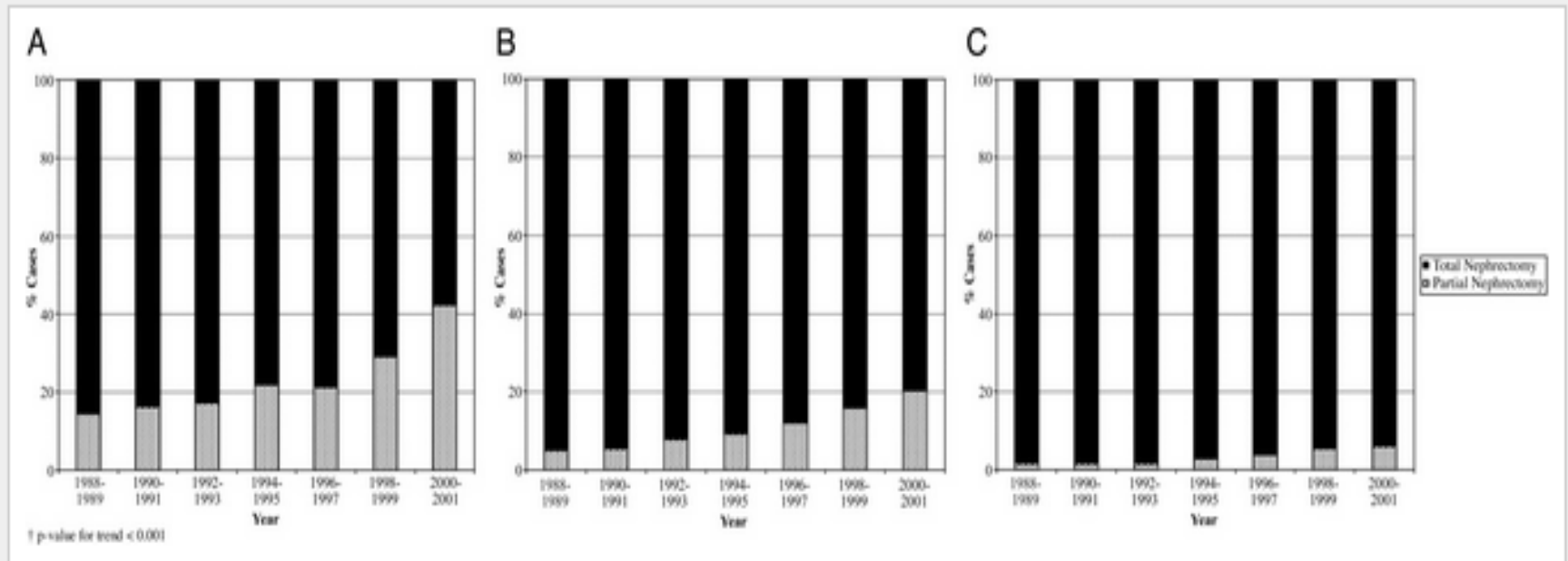
ation of Urology

# Cerrahi Tedavi

- 1989-2001

## Partial Nephrectomy for Small Renal Masses: An Emerging Quality of Care Concern?

[David C. Miller\\*](#), [John M. Hollingsworth](#), [Khaled S. Hafez](#), [Stephanie Daignault](#), [Brent K. Hollenbeck](#)   
Michigan Urology Center, University of Michigan Medical Center



Temporal trends in surgical management of small renal masses (1988 to 2001), p value for trend <0.001. A, tumor size less than 2 cm (in 1,602 patients). B, tumor size 2 to 4 cm (in 6,077 patients). C, tumor size greater than 4 to 7 cm (in 6,968 patients).



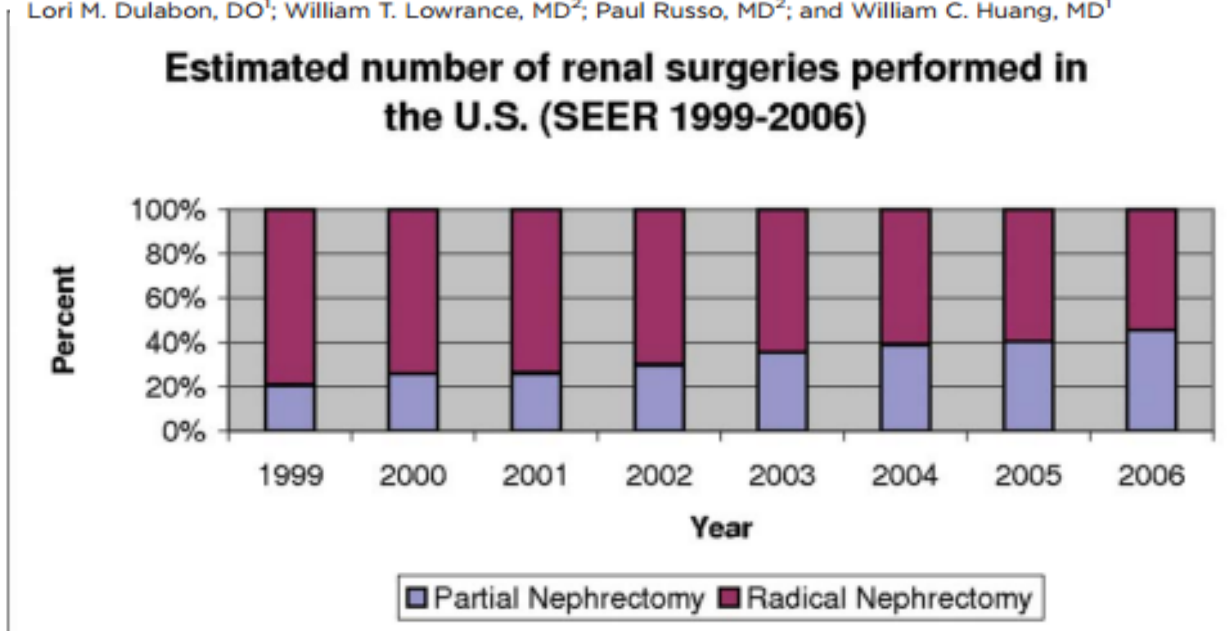
# Cerrahi Tedavi

- <4 cm

Original Article

## Trends in Renal Tumor Surgery Delivery Within the United States

Lori M. Dulabon, DO<sup>1</sup>; William T. Lowrance, MD<sup>2</sup>; Paul Russo, MD<sup>2</sup>; and William C. Huang, MD<sup>1</sup>

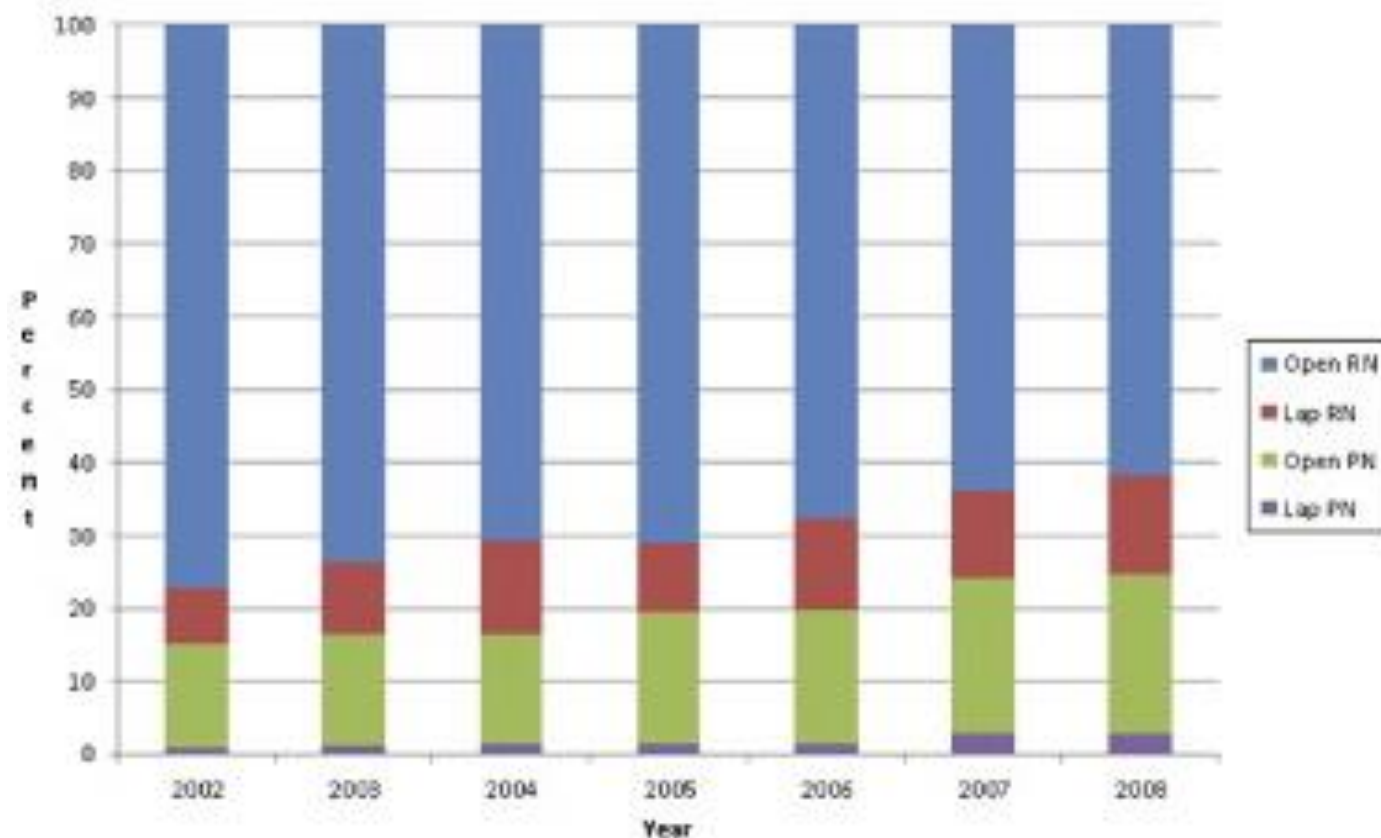


**Figure 1.** This chart illustrates trends in the surgical treatment of small ( $\leq 4$  cm) renal masses. SEER indicates Surveillance, Epidemiology, and End Results.

# Cerrahi Tedavi

## National Trends in the Use of Partial Nephrectomy: A Rising Tide That Has Not Lifted All Boats

[Sanjay G. Patel](#), [David F. Penson](#), [Baldeep Pabla](#), [Peter E. Clark](#)<sup>\*</sup>, [Michael S. Cookson](#)<sup>†</sup>, [Sam S. Chang](#)<sup>‡</sup>, [S. Duke Herrell](#)<sup>§</sup>,  
[Joseph A. Smith Jr.](#) <sup>||</sup>, [Daniel A. Barocas](#)<sup>\*\*</sup> 





# Cerrahi tedavi

## Evre 1 ve 2

- Cerrahi genelde küratif
- 7 cm ve altı kitlelerde parsiyel veya radikal nefrektomi

J Urol. 2004 Jun;171(6 Pt 1):2181-5, quiz 2435.

### **Safety and efficacy of partial nephrectomy for all T1 tumors based on an international multicenter experience.**

Patard JJ<sup>1</sup>, Shvarts O, Lam JS, Pantuck AJ, Kim HL, Ficarra V, Cindolo L, Han KR, De La Taille A, Tostain J, Artibani W, Abbou CC, Lobel B, Chopin DK, Figlin RA, Mulders PF, Belldegrun AS.

**RESULTS:** Partial and radical nephrectomies were performed in 379 (26.1%) and 1075 (73.9%) cases, respectively. Mean followup +/- SD was 62.5 +/- 51.8 months. Recurrence data were available on 544 patients. There were no significant differences in local or distant recurrence rates between patients undergoing partial or radical nephrectomy for either T1a (p = 0.6) or T1b tumors (p = 0.5). For patients with T1a tumors, there was no significant difference in the rate of cancer specific deaths between the partial (314) and radical (499) nephrectomy groups (2.2% versus 2.6%, respectively, p = 0.8). For patients with T1b tumors there was also no significant difference in the rate of cancer specific deaths between patients undergoing partial (65) and patients undergoing radical (576) nephrectomy (6.2% versus 9%, respectively, p = 0.6).

# Cerrahi tedavi

## Evre 3

Stage III	T3	N0	M0
	T1, T2, T3	N1	M0

- Radikal nefrektomi en çok tercih edilen tedavidir.

# Cerrahi tedavi

## Evre 4

Stage IV	T4	Any N	M0
	Any T	N2	M0
	Any T	Any N	M1

- Nefrektomi
  - Semptomların palyasyonu
  - Sistemik tedaviye yardımcı

# Cerrahi tedavi

## Radikal nefrektomi

### Laparoskopik nefrektomide açığa göre

- Analjezik ihtiyacı
- Hastanede kalış süresi
- İyileşme süresi
- Kanama

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## Laparoscopic Versus Open Radical Nephrectomy for Large Renal Tumors: A Long-Term Prospective Comparison

A. K. Hemal,\* A. Kumar, R. Kumar, P. Wadhwa, A. Seth and N. P. Gupta

*From the Department of Urology, All India Institute of Medical Sciences, New Delhi, India*

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Mean $\pm$ SD analgesic requirement (mg morphine equivalent)	16.4 $\pm$ 3.35	35.0 $\pm$ 8.01	<0.001 (significant)
Mean $\pm$ SD hospital stay (days)	3.6 $\pm$ 0.79	6.6 $\pm$ 1.06	<0.001 (significant)
Mean $\pm$ SD convalescence (wks)	1.56 $\pm$ 0.5	3.3 $\pm$ 0.69	<0.001 (significant)
blood transfusion (%)	6 (14.63)	23 (32.4)	0.04 (significant)

# Cerrahi tedavi

## Radikal nefrektomi

### Açık cerrahide laparoskopiye göre

- Operasyon zamanı daha kısa

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### Laparoscopic Versus Open Radical Nephrectomy for Large Renal Tumors: A Long-Term Prospective Comparison

**A. K. Hemal,\* A. Kumar, R. Kumar, P. Wadhwa, A. Seth and N. P. Gupta**

*From the Department of Urology, All India Institute of Medical Sciences, New Delhi, India*

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Mean  $\pm$  SD operative time (mins)

180.8  $\pm$  21.5

165.3  $\pm$  40.9

0.029 (significant)

# Cerrahi tedavi

## Radikal nefrektomi

### Hem açık hem laparoskopi grubunda

- QoL skorları benzer

**BJUI**  
BJU INTERNATIONAL

Quality of life and perioperative outcomes after retroperitoneoscopic radical nephrectomy (RN), open RN and nephron-sparing surgery in patients with renal cell carcinoma

Christian Gratzke, Michael Seitz, Florian Bayrle, Boris Schlenker, Patrick J. Bastian, Niko Haseke, Markus Bader, Derya Tilki, Alexander Roosen, Alexander Karl, Oliver Reich, Wael Y. Khoder, Stephen Wyler\*, Christian G. Stief, Michael Staehler and Alexander Bachmann\*

*Departments of Urology, Ludwig-Maximilians-University Munich, Germany; and \*Basel University Hospital, Switzerland*



# Cerrahi tedavi

## Radikal nefrektomi

### Transperitoneal veya retroperitoneal laparoskopik yaklaşımda

- Onkolojik sonuçlar
- QoL skorları benzer

Desai MM et al, J Urol 2005 Jan;173(1):38-41  
Nadler RB et al, J Urol 2006 Apr;175(4):1230-3.

# Cerrahi Tedavi

## 6.2.3 *Conclusions and recommendations*

<b>Conclusions</b>	<b>LE</b>
Laparoscopic radical nephrectomy has lower morbidity compared to open surgery.	1b
Oncological outcomes for T1-T2a tumours are equivalent between laparoscopic and open radical nephrectomy.	2a
Partial nephrectomy can be performed, either with an open, pure laparoscopic or robot-assisted approach, based on surgeon's expertise and skills.	2b

<b>Recommendations</b>	<b>GR</b>
Laparoscopic radical nephrectomy is recommended for patients with T2 tumours and localized renal masses not treatable by nephron-sparing surgery.	B
Laparoscopic radical nephrectomy should not be performed in patients with T1 tumours for whom partial nephrectomy is indicated.	A

# Cerrahi Tedavi

## Parsiyel Nefrektomi

Progresyonsuz sağkalım  
laparoskopik ve açık grupta benzer

### Comparison of 1,800 Laparoscopic and Open Partial Nephrectomies for Single Renal Tumors

[Inderbir S. Gill](#), [Louis R. Kavoussi](#), [Brian R. Lane](#), [Michael L. Blute](#), [Denise Babineau](#), [J. Roberto Colombo Jr.](#), [Igor Fra Sompol Permpongkosol](#), [Christopher J. Weight](#), [Jihad H. Kaouk](#), [Michael W. Kattan](#), [Andrew C. Novick](#) 

Mean cm (range)

2.7 (0.5–7.0)

similar oncological outcomes (p not significant).

# Cerrahi Tedavi

## Parsiyel Nefrektomi

- Laparoskopik ve açık grupta
  - Postoperatif komplikasyon
  - DVT
  - Pulmoner emboli oranları benzer
    - Gill IS et al, J Urol 2007 Jul;178(1):41-6.
    - Gong EM et al, J Endourol 2008 May;22(5):953-7.

# Cerrahi Tedavi

## Parsiyel Nefrektomi

Operasyon süresi laparoskopik grupta daha uzun

EUROPEAN UROLOGY 55 (2009) 1171–1178

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



Kidney Cancer

### Laparoscopic and Open Partial Nephrectomy: A Matched-Pair Comparison of 200 Patients

Martin Marszalek<sup>a,b,\*</sup>, Herbert Meixl<sup>b</sup>, Marko Polajnar<sup>b</sup>, Michael Rauchenwald<sup>a</sup>,  
Klaus Jeschke<sup>b</sup>, Stephan Madersbacher<sup>a</sup>

	Laparoscopic	(n = 100)	Open	(n = 100)	p value
Mean age (range)	62.3	(22.9–83.4)	62.5	(21.9–84.6)	0.9
Sex (male:female), %	60.0:40.0	–	60.0:40.0	–	–
Laterality (right:left), %	54.0:46.0	–	53.0:47.0	–	0.9
Location, %					0.8
Upper segment	30.0	–	29.0	–	–
Middle segment	45.0	–	43.0	–	–
Lower segment	25.0	–	28.0	–	–
Median total operative time, min (IQR)	85	(70:105)	150	(127:185)	≤0.001
Median arterial occlusion, min (IQR)	23	(19:27)	31	(24:45)	<0.001
LPN: WIT					
OPN: CIT					
Median hospitalisation, d (IQR)	5	(5:6)	7	(6:8)	<0.001
Blood loss, % (mean decline in % of baseline haemoglobin)	15.4	–	13.6	–	0.2
Pathologic diagnosis, %					
Benign (n)	19.0	19	34.0	34	0.02
Malignancies–RCC	81.0	81	66.0	66	–
Clear cell	64.2	52	74.2	49	–
Papillary	18.5	15	15.2	10	–
Other	17.3	14	10.6	7	–
PSM, %	4.0	–	2.0	–	0.4
Median tumor size, cm (IQR)	2.8	(2.0:3.2)	2.9	(2.3:3.5)	0.2
Overall complication rate, %	24.0	–	22.0	–	0.7

# Cerrahi Tedavi

## Parsiyel Nefrektomi

İskemi süresi laparoskopik  
grupta daha uzun

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journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



European Association of Urology



Kidney Cancer

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Klaus Jeschke<sup>b</sup>, Stephan Madersbacher<sup>a</sup>

JJCO Japanese Journal of  
Clinical Oncology

*Jpn J Clin Oncol* 2012;42(7):619–624  
doi:10.1093/jjco/hys061  
Advance Access Publication 4 May 2012

### The Benefit of Laparoscopic Partial Nephrectomy in High Body Mass Index Patients

Gou Kaneko, Akira Miyajima\*, Eiji Kikuchi, Ken Nakagawa and Mototsugu Oya

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35 Shinanomachi, Shinjuku-ku, Tokyo 160-8582, Japan. E-mail: [akiram@a8.keio.jp](mailto:akiram@a8.keio.jp)



# Cerrahi Tedavi

## Parsiyel Nefrektomi

Laparoskopik grupta GFR açık  
cerrahiye göre daha fazla düşmekte

EUROPEAN UROLOGY 55 (2009) 1171–1178

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)

**EAU**  
European Association of Urology



Kidney Cancer

### Laparoscopic and Open Partial Nephrectomy: A Matched-Pair Comparison of 200 Patients

Martin Marszalek<sup>a,b,\*</sup>, Herbert Meixl<sup>b</sup>, Marko Polajnar<sup>b</sup>, Michael Rauchenwald<sup>a</sup>,  
Klaus Jeschke<sup>b</sup>, Stephan Madersbacher<sup>a</sup>

**Table 3 – Renal function outcomes in patients after laparoscopic and open nephron-sparing surgery**

	Laparoscopic		Open		p value
Mean preoperative GFR ml per min/1.72 m <sup>2</sup>	88.9 ± 2.4	(26.6–147.7)	84.9 ± 2.0	(26.8–129.9)	0.2
Mean postoperative GFR ml per min/1.72 m <sup>2</sup>	80.9 ± 2.6	(24.1–142.5)	83.5 ± 2.3	(22.8–130.1)	0.5
Mean GFR ml per min/1.72 m <sup>2</sup> at follow-up*	79.3 ± 2.8	(10.8–138.8)	76.7 ± 3.0	(10.2–122.4)	0.5
% decline in GFR from pre- to postoperative	8.8		0.8		<0.001
% decline in GFR from preoperative to follow-up*	10.9		10.6		0.8

GFR = glomerular filtration rate; SE = standard error.  
\* Mean follow-up: 3.6 yr. Values given as mean + SE (range).

# Cerrahi Tedavi

## Parsiyel Nefrektomi

Parsiyel nefrektomide seçilecek teknik  
kronik renal yetmezlik için prediktif  
değildir

Current  
Urology

Original Paper

Curr Urol 2012;6:129-135  
DOI: 10.1159/000343526

Received: March 22, 2012  
Accepted: May 11, 2012  
Published online: December 21, 2012

### Prognostic Factors Influencing Postoperative Development of Chronic Kidney Disease in Patients with Small Renal Tumors who Underwent Partial Nephrectomy

Mototsugu Muramaki Hideaki Miyake Iori Sakai Masato Fujisawa

Division of Urology, Kobe University Graduate School of Medicine, Kobe, Japan

**Table 1.** Patient characteristics according to surgical procedure

	OPN (n = 73)	LPN (n =36 )	Overall (n = 109)	p
Age, years	58.5 ± 12.8	55.8 ±9.8	57.4 ± 11.9	0.087
Gender, %				0.094
Male	58 (79.5)	23 (63.9)	81 (74.3)	
Female	15 (20.5)	13 (36.1)	28 (25.7)	
Hypertension, %				0.75
Yes	7 (9.6)	5 (13.9)	12 (11.0)	
No	66 (90.4)	31 (86.1)	97 (89.0)	
Diabetes, %				0.82
Yes	9 (12.3)	5 (13.9)	14 (12.8)	
No	64 (87.7)	31 (86.1)	95 (87.2)	
Maximal tumor diameter, mm	25.6 ± 16.4	21.8 ± 7.5	24.1 ± 10.9	0.14
Preoperative eGFR, ml/min/1.73 m <sup>2</sup>	79.1 ± 15.5	80.5 ± 14.8	80.5 ± 14.8	0.54

# Cerrahi Tedavi

## Parsiyel Nefrektomi

Robotik parsiyel grubunda laparoskopiye göre Hb düşüş oranı ve sıcak iskemik zamanı daha iyi

BJUI  
BJU International



Robotics and Laparoscopy

**A prospective comparison of surgical and pathological outcomes obtained after robot-assisted or pure laparoscopic partial nephrectomy in moderate to complex renal tumours: results from a French multicentre collaborative study**

Alexandra Masson-Lecomte<sup>1,2,3</sup>, Karim Bensalah<sup>5,6</sup>, Elise Seringe<sup>2,3</sup>,  
Christophe Vaessen<sup>1,2</sup>, Alexandre de la Taille<sup>4,7</sup>, Nicolas Doumerc<sup>8,9</sup>,  
Pascal Rischmann<sup>8,9</sup>, Franck Bruyère<sup>10,11</sup>, Laurent Soustelle<sup>12,13</sup>, Stéphane Droupy<sup>12,13</sup>  
and Morgan Rouprêt<sup>1,2</sup>

<sup>1</sup>Department of Urology, Pitié Salpêtrière, Assistance Publique – Hôpitaux de Paris, Paris, <sup>2</sup>Université Paris 6, Paris, <sup>3</sup>Department of Statistics, Pitié Salpêtrière, Assistance Publique – Hôpitaux de Paris, Paris, <sup>4</sup>Department of Urology, Henri Mondor, Assistance Publique – Hôpitaux de Paris, Paris, <sup>5</sup>Department of Urology, CHU de Reims, Reims, <sup>6</sup>Université de Reims Champagne-Ardenne, Marne, <sup>7</sup>Université Paris-Est Creteil, Marne, <sup>8</sup>Department of Urology, CHU Rangueil, Toulouse, <sup>9</sup>Université Toulouse 3, Toulouse, <sup>10</sup>Department of Urology, CHU Bretonneau, Tours, <sup>11</sup>Université François-Rabelais, Tours, <sup>12</sup>Department of Urology, CHU Caremeau, Nîmes, <sup>13</sup>Université Montpellier 1, Montpellier, France

# Cerrahi Tedavi

## Parsiyel Nefrektomi

EUROPEAN UROLOGY 62 (2012) 1023–1033

Robotik parsiyel grubunda laparoskopiyeye göre sıcak iske mi zamanı daha iyi

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



Platinum Priority – Review – Kidney Cancer

Editorials by Alexandre Mottrie, Marco Borghesi and Vincenzo Ficarra on pp. 1034–1036  
and by Anthony T. Corcoran, Alexander Kutikov and Robert G. Uzzo on pp. 1037–1038 of this issue

### Robotic Versus Laparoscopic Partial Nephrectomy: A Systematic Review and Meta-Analysis

Omar M. Aboumarzouk<sup>a,b,\*</sup>, Robert J. Stein<sup>c</sup>, Remi Eyraud<sup>c</sup>, Georges-Pascal Haber<sup>c</sup>,  
Piotr L. Chlosta<sup>d</sup>, Bhaskar K. Somani<sup>e</sup>, Jihad H. Kaouk<sup>c</sup>

<sup>a</sup>Wales Deanery, Urology Department, Cardiff, Wales, UK; <sup>b</sup>Islamic University of Gaza, College of Medicine, Gaza, Palestine; <sup>c</sup>Cleveland Clinic, Glickman Urologic and Kidney Institute, Cleveland, OH, USA; <sup>d</sup>Department of Urology, Institute of Oncology, UJK University, Kielce, Poland and Department of Urology, the Medical Centre of Postgraduate Education, Warsaw, Poland; <sup>e</sup>University Hospitals Southampton NHS Trust, Southampton, UK

Table 2 – Study results of robotic versus laparoscopic partial nephrectomy of studies excluded

Study	Tumour size, RPN vs LPN, mm (mean)	Patients, RPN vs LPN, no.	Age, RPN vs LPN, yr	Male: female, RPN vs LPN	Right: left, RPN vs LPN	Operating time, RPN vs LPN, min (mean)	Warm ischaemia time, RPN vs LPN, min (mean)	Blood loss, RPN vs LPN, ml (mean)	Length of stay, RPN vs LPN, d (mean)	Location U/M/L pole, RPN vs LPN	Positive surgical margins, RPN vs LPN	Pathology, malignant: benign, RPN vs LPN
Benway and Bhayani [6]	28 vs 25	129 vs 118	59.2 vs 59.2	NA	NA	189 vs 174	19.7 vs 28.4	155 vs 196	2.4 vs 2.7	NA	5 vs 1	87:42 vs 89:29
Deane et al. [17]	31 (25–40) vs 23 (17–62)	11 vs 11	53.2 vs 54	10:1 vs 7:4	4:7 vs 4:7	228.7 (98–375) vs 289.5 (145–369)	32.1 (30–45) vs 35.3 (15–49)	115 (75–500) vs 198 (25–300)	2 vs 3.1	8/0/3 vs 3/3/5	0 vs 0	11:0 vs 8:3
Caruso et al. [15]	19.5 vs 21.8	10 vs 10	58 vs 61	NA	NA	279 vs 253	26.4 vs 29.3	240 vs 200	2.6 vs 2.65	3/3/4 vs 4/1/5	0 vs 1	8:2 vs 5:5
DeLong et al. [18]	26 vs 28	13 vs 15	59.7 vs 53.6	8:5 vs 8:7	7:6 vs 8:7	344 vs 254	29.7 (21–45) vs 39.9 (24–51)	Median: 100 vs 150	Not clear	NA	NA	13:0 vs 9:6
Cho et al. [16]	27 (9–35) vs 28 (15–35)	10 vs 10	63 (36–78) vs 56 (31–79)	8:2 vs 5:5	3:7 vs 5:5	376 (179–470) vs 361 (197–477)	31 (26–36) vs 40 (27–50)	329 (50–700) vs 328 (200–550)	7 (5–12) vs 14 (6–51)	3/4/3 vs 5/5/0	0 vs 0	9:1 vs 8:2

LPN = laparoscopic partial nephrectomy; RPN = robotic partial nephrectomy; U = upper; M = middle; L = lower; NA = not available.

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

### Laparoscopic Radical Versus Partial Nephrectomy for Tumors >4 cm: Intermediate-term Oncologic and Functional Outcomes

Matthew N. Simmons, Christopher J. Weight, Inderbir S. Gill 

Center for Laparoscopic and Robotic Surgery, Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio

This retrospective analysis compared patients undergoing LRN (n = 75) or LPN (n = 35) at a tertiary referral center from April 2001 to December 2005 for Stage T1b-T3N0M0 renal cell carcinoma. The endpoints included radiologically verified systemic and local recurrence, cancer-specific mortality, overall mortality, and chronic kidney disease as determined from the calculated glomerular filtration rate and Kidney Foundation Dialysis Outcomes Quality Initiative diagnostic criteria.

The LRN group had larger tumors (5.3 vs 4.9 cm;  $P = .03$ ), more T3a tumors (33% vs 9%;  $P = .006$ ), and more clear cell pathologic features (85% vs 66%;  $P = .03$ ). No surgical margins in either group were positive. The median follow-up was 57 months (range 27-79) for the LRN group and 44 months (range 27-85) for the LPN group ( $P = .1$ ). The overall mortality (11% vs 11%), cancer-specific mortality (3% vs 3%), and recurrence (3% vs 6%) rates ( $P = .4$ ) were equivalent. The postoperative decrease in the estimated glomerular filtration rate was less in the LPN group than in the LRN group at 13 and 24 mL/min, respectively ( $P = .03$ ). Postoperatively, 2-stage increases in the chronic kidney disease stage occurred in 12% vs 0% of patients in the LRN and LPN groups, respectively ( $P < .001$ ).

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi



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### Long-term survival following partial versus radical nephrectomy among older patients with early-stage kidney cancer

Hung-Jui Tan, MD<sup>1</sup>, Edward C. Norton, PhD<sup>2,3,4,5</sup>, Zaojun Ye, MS<sup>1</sup>, Khaled S. Hafez, MD<sup>6</sup>, John L. Gore, MD, MS<sup>7</sup>, and David C. Miller, MD, MPH<sup>1,5,6</sup>

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<sup>5</sup>Center for Healthcare Outcomes & Policy, University of Michigan, Ann Arbor, MI

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<sup>7</sup>Department of Urology, University of Washington, Seattle, WA

those treated with radical nephrectomy (HR 0.34, 95% CI 0.34-0.85). We found no difference in kidney cancer-specific survival between treatment groups (HR 0.82, 95% CI 0.19-3.49). Figure 3 presents model-predicted survival probabilities for patients treated with



# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

**Hastanade kalış süresi ve  
ortalama Hb düşüş oranları  
benzer**

**BJUI**  
BJUI INTERNATIONAL

Quality of life and perioperative outcomes after retroperitoneoscopic radical nephrectomy (RN), open RN and nephron-sparing surgery in patients with renal cell carcinoma

Christian Gratzke, Michael Seitz, Florian Bayrle, Boris Schlenker, Patrick J. Bastian, Niko Haseke, Markus Bader, Derya Tilki, Alexander Roosen, Alexander Karl, Oliver Reich, Wael Y. Khoder, Stephen Wyler\*, Christian G. Stief, Michael Staehler and Alexander Bachmann\*

*Departments of Urology, Ludwig-Maximilians-University Munich, Germany; and \*Basel University Hospital, Switzerland*

Comparison of costs and complications of radical and partial nephrectomy for treatment of localized renal cell carcinoma

[Bijan Shekariz](#), [Jyoti Upadhyay](#), [Hodjat Shekariz](#), [Aziz Goes Jr](#), [Fernando J Bianco Jr](#), [Rabi Tiguert](#), [E Gheiler](#), [David P Wood Jr](#)

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

Parsiyel nefrektomide renal fonksiyonlar daha iyi

**RESULTS:** The radical and nephron-sparing surgical groups were well matched for patient age, sex, renal function, diabetes, hypertension, tumor size, tumor location, and tumor stage. All patients in both groups had low pathologic stage RCC. There was no difference between the two groups in terms of the mean hospital stay, the requirement for blood transfusions, or the occurrence of surgical complications. There was no difference in the mean preoperative and postoperative serum creatinine levels for patients in the nephron-sparing surgery group. However, the mean postoperative serum creatinine levels were significantly higher than the mean preoperative levels for patients in the radical nephrectomy group ( $P < 0.001$ ). A single patient in each group developed recurrent RCC postoperatively. The cancer-specific 5-year survival rate for patients in the radical and nephron-sparing surgical groups is 97% and 100%, respectively.

Urology. 1995 Jan;45(1):34-40; discussion 40-1.

**Management of small unilateral renal cell carcinomas: radical versus nephron-sparing surgery**

Butler BP<sup>1</sup>, Novick AC, Miller DP, Campbell SA, Licht MR.

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

Parsiyel nefrektomide renal fonksiyonlar daha iyi

### Comparison of outcomes in elective partial vs radical nephrectomy for clear cell renal cell carcinoma of 4–7 cm

ATREYA DASH\*, ANDREW J. VICKERS\*†, LEE R. SCHACHTER‡, ARIADNE M. BACH¶, MARK E. SNYDER\* and PAUL RUSSO\*  
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Accepted for publication 9 November 2005

#### OBJECTIVE

To compare the outcomes of patients who had a elective partial nephrectomy (PN) or radical nephrectomy (RN) for clear cell renal cell carcinoma (RCC) of 4–7 cm.

#### PATIENTS AND METHODS

From March 1998 to July 2004, 45 and 151 patients underwent PN and RN, respectively, for clear cell RCC. A multivariate Cox model was constructed for disease-free survival with adjustment for markers of disease severity, and a propensity-score approach used as a confirmatory analysis.

#### RESULTS

In the PN and RN cohorts the treatment failed in one and 20 patients, respectively; the median follow-up was 21 months. The hazard ratio (95% confidence interval) for PN after adjusting for disease severity was 0.36 (0.05–2.82;  $P=0.3$ ). Using planned PN as a predictor (intent-to-treat analysis) the hazard ratio was 1.06 (0.32–3.53;  $P=0.9$ ). In the propensity-score model, planned PN was associated with a hazard ratio of 1.75 (0.50–6.14;  $P=0.4$ ). The serum creatinine level 3 months after surgery was significantly lower in patients who had PN, with a difference between the means of 0.36 (0.22–0.48;  $P<0.001$ ).

#### CONCLUSIONS

Renal function was preserved after PN for 4–7 cm clear cell RCC tumours. When comparing the outcomes of PN and RN it is important to consider the intended operation as an independent variable. There was no clear evidence that PN was associated with worse cancer control, although a continued follow-up of this and other cohorts is warranted.

#### KEYWORDS

clear cell adenocarcinoma, nephrectomy, renal cell carcinoma

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

Parsiyel nefrektomide renal fonksiyonlar daha iyi

### Laparoscopic Radical Versus Partial Nephrectomy for Tumors >4 cm: Intermediate-term Oncologic and Functional Outcomes

[Matthew N. Simmons](#), [Christopher J. Weight](#), [Inderbir S. Gill](#) 

Center for Laparoscopic and Robotic Surgery, Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio

#### Results

The LRN group had larger tumors (5.3 vs 4.9 cm;  $P = .03$ ), more T3a tumors (33% vs 9%;  $P = .006$ ), and more clear cell pathologic features (85% vs 66%;  $P = .03$ ). No surgical margins in either group were positive. The median follow-up was 57 months (range 27-79) for the LRN group and 44 months (range 27-85) for the LPN group ( $P = .1$ ). The overall mortality (11% vs 11%), cancer-specific mortality (3% vs 3%), and recurrence (3% vs 6%) rates ( $P = .4$ ) were equivalent. The postoperative decrease in the estimated glomerular filtration rate was less in the LPN group than in the LRN group at 13 and 24 mL/min, respectively ( $P = .03$ ). Postoperatively, 2-stage increases in the chronic kidney disease stage occurred in 12% vs 0% of patients in the LRN and LPN groups, respectively ( $P < .001$ ).

# Cerrahi Tedavi

## Parsiyel ve Radikal nefrektomi

Parsiyel nefrektomide QoL skoru daha iyi

Quality of life after surgery for localized renal cell carcinoma: comparison between radical nephrectomy and nephron-sparing surgery

[Vassilis Poulakis](#), [Ulrich Witzsch](#), [Rachelle de Vries](#), [Matthias Moeckel](#), [Eduard Becht](#)

### Conclusions

Patients without evidence of disease have relatively normal physical and mental health after operative treatment for localized renal cell carcinoma, independent of the kind of surgery. The QOL correlates proportionally with the size of tumor and is significantly better for patients undergoing NSS for tumor less than 4 cm with a normal contralateral kidney.

□            □

# Cerrahi tedavi

**T1a tümörlerde PN, RN, Ablatif  
tedavilerde kanser spesifik sağkalım oranı  
%100**

Date: 27 Jul 2010

## Midterm results of radiofrequency ablation versus nephrectomy for T1a renal cell carcinoma

Haruyuki Takaki, Koichiro Yamakado, Norihito Soga, Kiminobu Arima, Atsuhiro Nakatsuka,  
Masataka Kashima, Junji Uraki, Tomomi Yamada, Kan Takeda, Yoshiki Sugimura



# Cerrahi tedavi

## Adrenelektomi

- Üst pol yerleşim prediktif değil
- Büyük kitle prediktif
- Tutlum oranı<%5
- BT+/-MRI da tulum varsa

## Management of the Adrenal Gland During Partial Nephrectomy

[Brian R. Lane†](#) , [Ho-Yee Tiong†](#), [Steven C. Campbell§](#), [Amr F. Fergany†](#), [Christopher J. Weight†](#), [Benjamin T. Larson†](#),  
[Andrew C. Novick†](#), [Stuart M. Flechner||](#)

# Cerrahi tedavi

## Adrenalektomi

### Conclusions

Ipsilateral adrenalectomy during radical or partial nephrectomy does not provide a survival advantage.	3
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### Recommendations

Ipsilateral adrenalectomy is not recommended when there is no clinical evidence of invasion of the adrenal gland.	B
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# Cerrahi tedavi

## Lenfadenektomi

- Diafragma ile bifurkasyon arası
- Bölgesel metastazda kür şansı
- Adjuvan tedavi için risk belirlemede
- T1a LN(+) oranı %2,5

- Clinical significance of lymph node dissection in renal cell carcinoma, Matsuyama H et al, Scand J Urol Nephrol.2005

# Cerrahi tedavi

## Lenfadenektomi

- cN(+) olanların yalnızca %20 pN(+)

EUROPEAN UROLOGY 55 (2009) 28–34

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



European Association of Urology



### Platinum Priority – Kidney Cancer

*Editorial by Urs E. Studer and Frédéric D. Birkhäuser on pp. 35–37 of this issue*

## Radical Nephrectomy with and without Lymph-Node Dissection: Final Results of European Organization for Research and Treatment of Cancer (EORTC) Randomized Phase 3 Trial 30881

Jan H.M. Blom<sup>a,\*</sup>, Hein van Poppel<sup>b</sup>, Jean M. Maréchal<sup>c</sup>, Didier Jacqmin<sup>d</sup>, Fritz H. Schröder<sup>e</sup>,  
Linda de Prijck<sup>f</sup>, Richard Sylvester<sup>f</sup>, for the EORTC Genitourinary Tract Cancer Group

# Cerrahi tedavi

## Lenfadenektomi

- cN(+)(BT/MR veya intraoperatif palpasyonla) ise LND uygun

EUROPEAN UROLOGY 60 (2011) 1212–1220

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



European Association of Urology



Collaborative Review – Kidney Cancer

## Lymph Node Dissection in Renal Cell Carcinoma

*Umberto Capitanio<sup>a,\*</sup>, Frank Becker<sup>b</sup>, Michael L. Blute<sup>c</sup>, Peter Mulders<sup>d</sup>, Jean-Jacques Patard<sup>e</sup>, Paul Russo<sup>f</sup>, Urs E. Studer<sup>g</sup>, Hein Van Poppel<sup>h</sup>*

# Cerrahi tedavi

## Lenfadenektomi

- Yüksek risk (2 ve üzeri kriter varsa )
  - Tümör çapı> 10 cm
  - Yüksek fuhrman grade
  - pT3-pT4
  - Sakomatoid komponent varlığı
  - Nekroz varlığı

EUROPEAN UROLOGY 60 (2011) 1212–1220

available at [www.sciencedirect.com](http://www.sciencedirect.com)  
journal homepage: [www.europeanurology.com](http://www.europeanurology.com)



European Association of Urology



Collaborative Review – Kidney Cancer

## Lymph Node Dissection in Renal Cell Carcinoma

*Umberto Capitanio<sup>a,\*</sup>, Frank Becker<sup>b</sup>, Michael L. Blute<sup>c</sup>, Peter Mulders<sup>d</sup>, Jean-Jacques Patard<sup>e</sup>, Paul Russo<sup>f</sup>, Urs E. Studer<sup>g</sup>, Hein Van Poppel<sup>h</sup>*

# Cerrahi tedavi

## Lenfadenektomi

### Conclusions

In patients with localized disease and no clinical evidence of lymph-node metastases, no survival advantage of a lymph-node dissection in conjunction with a radical nephrectomy was demonstrated.	1b
In patients with localized disease and clinically enlarged lymph nodes the survival benefit of lymph node dissection is unclear. In these cases lymph node dissection can be performed for staging purposes.	3

### Recommendations

Lymph node dissection is not recommended in localized tumour without clinical evidence of lymph node invasion.	A
In patients with clinically enlarged lymph nodes, lymph node dissection can be performed for staging purposes or local control.	C

# Cerrahi tedavi

## Embolizasyon

- Rutin olarak önerilmez
  - Subramanian VS et al, Urology 2009 Jul;74(1):154-9
- Cerrahiye uygun olmayan hastalarda
  - Flank ağrısı
  - Hematüri varsa
    - Maxwell NJ et al, Br J Radiol 2007 Feb;80(950):96-102
    - Hallscheidt P et al, Rofo 2006 Apr;178(4):391-9.



# Cerrahi tedavi

## Sonuç ve öneriler

Conclusions	LE
Partial nephrectomy achieves similar oncological outcomes of radical nephrectomy for clinically localized renal tumours (cT1).	1b
Ipsilateral adrenalectomy during radical or partial nephrectomy does not provide a survival advantage.	3
In patients with localized disease and no clinical evidence of lymph-node metastases, no survival advantage of a lymph-node dissection in conjunction with a radical nephrectomy was demonstrated.	1b
In patients with localized disease and clinically enlarged lymph nodes the survival benefit of lymph node dissection is unclear. In these cases lymph node dissection can be performed for staging purposes.	3
In patients unfit for surgery and suffering from massive haematuria or flank pain, embolization can be a beneficial palliative approach.	3

# Cerrahi tedavi

## Sonuç ve öneriler

Recommendations	GR
Surgery is recommended to achieve cure in localized RCC.	B
Nephron-sparing surgery is recommended in patients with T1a tumours.	A
Nephron-sparing surgery should be favoured over radical nephrectomy in patients with T1b tumour, whenever technically feasible.	B
Ipsilateral adrenalectomy is not recommended when there is no clinical evidence of invasion of the adrenal gland.	B
Lymph node dissection is not recommended in localized tumour without clinical evidence of lymph node invasion.	A
In patients with clinically enlarged lymph nodes, lymph node dissection can be performed for staging purposes or local control.	C

## RCC ve Venöz Trombüs

- Venöz trombüs %4-10
- Agresif cerrahi
- Teknik konusunda konsensus yok

## RCC ve Venöz Trombüs

### 6.4.3 *Conclusions and recommendations*

Conclusions	LE
Low quality data suggests that tumour thrombus in the setting of non-metastatic disease should be excised.	3
Adjunctive procedures such as tumour embolization or IVC filter do not appear to offer any benefits.	3

Recommendations	GR
Excision of the kidney tumour and caval thrombus is recommended in patients with non-metastatic RCC.	C

# Metastazik RCC

## Sitoredüktif Cerrahi Tedavi

**Sitoredüktif cerrahi yapılanlarda ortalama sağkalım oranı daha iyi**

### Cytoreductive Nephrectomy in Patients With Metastatic Renal Cancer: A Combined Analysis

ROBERT C. FLANIGAN\*, G. MICKISCH, RICHARD SYLVESTER, CATHY TANGENT†, H. VAN POPPEL, E. DAVID CRAWFORD

From the Southwest Oncology Group and European Organization for the Research and Treatment of Cancer Genitourinary Group, Loyola University Medical Center (RCF), Maywood, Illinois, Centrum Fuer Operative Urologie (GM), Bremen, Germany, European Organization for the Research and Treatment of Cancer Data Center (RS), Brussels and UZ Gasthuisberg (HVP), Leuven, Belgium, Southwest Oncology Group Statistical Center (CT), Seattle, Washington, and University of Colorado Medical Center (EDC), Denver, Colorado

### Results

The combined analysis of these 2 trials yielded a median survival of 13.6 months for nephrectomy plus interferon vs 7.8 months for interferon alone. This difference represents a 31% decrease in the risk of death ( $p = 0.002$ ). There was no evidence of a difference in the size of the treatment effect according to pre-randomization stratification factors.

# Metastazik RCC

## Sitoredüktif Cerrahi Tedavi

### 6.6.1 *Conclusions and recommendation*

Conclusions	LE
Cytoreductive nephrectomy in combination with interferon-alpha (IFN- $\alpha$ ) improves the survival of patients with mRCC and good performance status.	1a
Cytoreductive nephrectomy for patients with simultaneous complete resection of a single metastasis or oligometastases may improve survival and delay systemic therapy.	3

Recommendation	GR
Cytoreductive nephrectomy is recommended in appropriately selected patients with metastatic RCC.	C

# Metastazik RCC

## Metastazektomi

Metastazik RCC kötü prognozlu

Özellikle komplet rezeksiyon  
hem genel sağkalımı hemde  
kanser spesifik sağkalımı artırır

Original Article

### Survival After Complete Surgical Resection of Multiple Metastases From Renal Cell Carcinoma

Angela L. Alt, MD<sup>1</sup>; Stephen A. Boorjian, MD<sup>1</sup>; Christine M. Lohse, MS<sup>2</sup>; Brian A. Costello, MD<sup>3</sup>;  
Bradley C. Leibovich, MD<sup>1</sup>; and Michael L. Blute, MD<sup>4</sup>

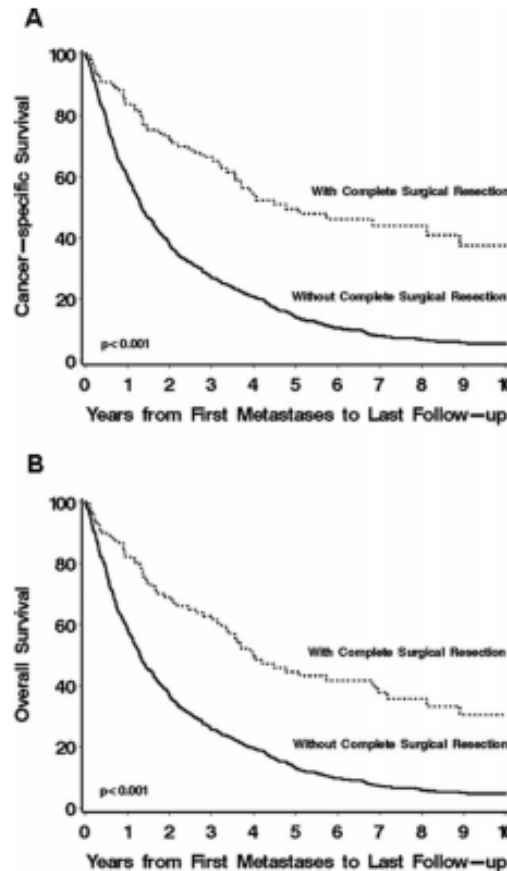


Figure 1. These charts illustrate the outcome of patients who had multiple metastases from renal cell carcinoma stratified according to whether they underwent complete metastasectomy. (A) Cancer-specific survival is illustrated. (B) Overall survival is illustrated.

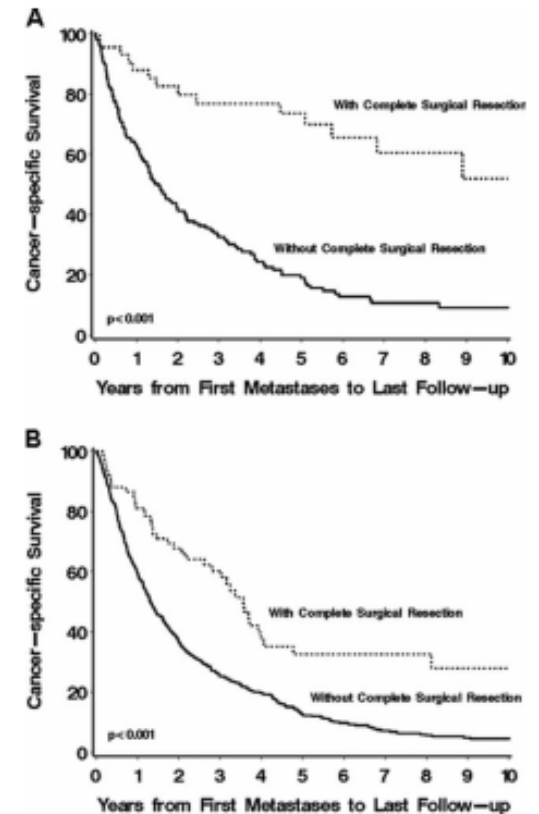


Figure 2. The impact of complete surgical resection for multiple renal cell carcinoma metastases on cancer-specific survival is illustrated for patients who had (A) lung-only metastases and (B) nonlung-only metastases.

with metastatic disease. These treatments included chem-

# Metastazik RCC

## Metastazektomi

- Akciğer metastazları
  - En sık
  - 33-61 ay sağkalım avantajı
    - Karam JA et al, Hematol-Oncol Clin North Am 2011;25(4):753-64.
  - Sağ kalımı en iyi belirleyen komplet-inkomplet?



# Metastazik RCC

## Metastazektomi

- Adrenal metastazları
  - İpsilateral tutulum %1-10
    - Suresh Bhat, Indian J Urol 2010;26(2):167-76
  - Yalnız adrenal tutulumunda sağ kalım 11,7 yıl
  - Sistemik+ adrenal sağ kalım 16 ay

# Metastazik RCC

## Metastazektomi

- Kemik metastazları
  - %30-40
  - 5 yıllık sağ kalım %15

- Jackson R. J, J Neurosurg 2001;94(1 Suppl):18-24.

# Metastazik RCC

## Metastazektomi

Conclusions	LE
All included studies were retrospective non-randomized comparative studies, resulting in a high risk of bias associated with non-randomization, attrition, and selective reporting.	3
With the exception of brain and possibly bone metastases, metastasectomy remains by default the most appropriate local treatment for most sites.	3
Retrospective comparative studies consistently point towards a benefit of complete metastasectomy in mRCC patients in terms of overall survival, cancer-specific survival and delay of systemic therapy.	3
Radiotherapy to bone and brain metastases from RCC can induce significant relief from local symptoms (e.g. pain).	3

Recommendations	GR
No general recommendations can be made. The decision to resect metastases has to be taken for each site, and on a case-by-case basis; performance status, risk profiles, patient preference and alternative techniques to achieve local control, must be considered.	C
In individual cases, stereotactic radiotherapy for bone metastases, and stereotactic radiosurgery for brain metastases can be offered for symptom relief.	C

## Cerrahi Tedavide Sonuç:

- Etiyolojide en önemli risk faktörleri sigara, obezite ve hipertansiyondur.
- Böbrek tümörlerinin küratif tedavisi cerrahi ile mümkündür.
- Radikal nefrektomide laparoskopik ve açık cerrahinin kendine has üstünlükleri vardır.
- 7 cm nin altındaki tümörlerde parsiyel nefrektomi gözardı edilmemelidir.
- Parsiyel nefrektomi açık, laparoskopik ya da robot yardımlı yapılabilir ancak cerrahın tecrubesi çok önemlidir.

## Cerrahi Tedavide Sonuç:

- Adrenal tutulumu yoksa adrenalektomi önerilmemektedir.
- Lenf tutulumu var ise lenfadenektomi yapılabilir ancak sürviye katkısı yoktur.
- Venöz tümör trombüsü olanlarda metastaz yok ise çıkarılması sürviye ciddi katkıda bulunur
- Metastatik tümörlerde metastazektomi yapılabiliyorsa sürviyi olumlu etkiler
- Yaygın metastazı olanlarda paliyatif amaçla nefrektomi ya da sitoredüktif nefrektomi yapılabilir



