ΕΛΛΗΝΙΚΗ ΟΥΡΟΛΟΓΙΚΗ ΕΤΑΙΡΕΙΑ

Διατήρηση του οργάνου σε ουρογεννητικές κακοήθειες

Στον καρκίνο του νεφρού

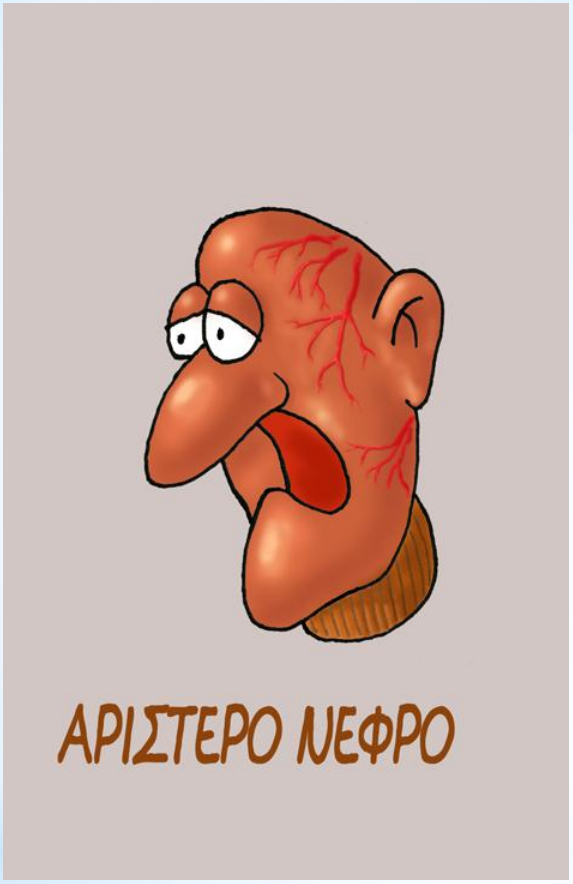
Κωνσταντίνος Γ. Στραβοδήμος

Αναπληρωτής Καθηγητής Ουρολογίας

ΕΘΝΙΚΟ & ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ ΙΑΤΡΙΚΗ ΣΧΟΛΗ

"ΛΑΪΚΟ" ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ ΑΘΗΝΩΝ από το 1933

ΕΕΟΟΓΕΚ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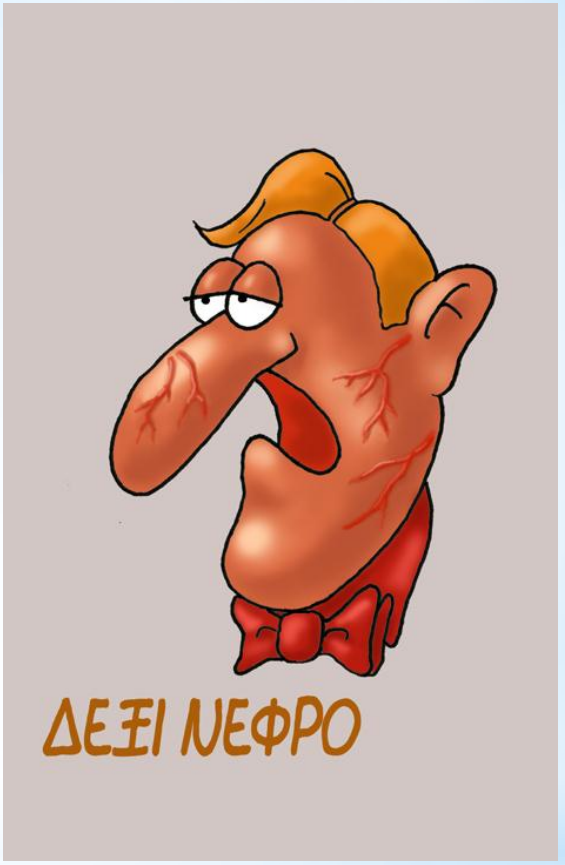
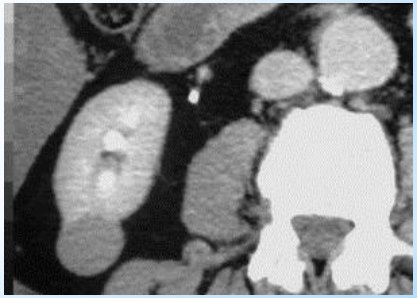

ΔΕΞΙ ΝΕΦΡΟ

Υπερηχογράφημα

- Τυχαία το 50- 80% ασυμπτωματικών όγκων
- 80% ευαισθησία (<3εκ)
- 1,5 εκ όριο διάγνωσης



Luciani LG, Urology 2000

Bach AM, Zhang J. Urol Clin North Am 2008

JOURNAL OF ENDOUROLOGY
Volume 28, Number 7, July 2014

Pp. 861–870
DOI: 10.1089/end.2013.0724

Current Patterns of Presentation and Treatment of Renal Masses: A Clinical Research Office of the Endourological Society Prospective Study

M. Pilar Laguna, MD,[1] Ferran Algaba, MD,[2] Jeffrey Cadeddu, MD,[3] Ralph Clayman, MD,[4] Inderbir Gill, MD,[5] Guillermo Gueglio, MD,[6] Markus Hohenfellner, MD,[7] Adrian Joyce, MD,[8] Jaime Landman, MD,[4] Benjamin Lee, MD,[9] Hein van Poppel, MD,[10] on behalf of the Clinical Research Office of the Endourological Society Renal Mass Study

67% τυχαίο εύρημα (σε 4815 όγκους)

Clinical tumor size (mm), median [range, IQR]	44 [2–300, 29–70]
Clinical tumor size, *n* (%)	
>40 mm	2194 (50.4)
≤40 mm	1960 (45.0)
Missing	201 (4.6)

Όγκος νεφρού – ριζική νεφρεκτομή

Ριζική νεφρεκτομή: ↑ ρίσκου ΧΝΑ

→ καρδιαγγειακή νοσηρότητα και θνητότητα

Huang WC, Lancet Oncol 2006

Go AS, N Eng J Med 2004

Thompson RH, J Urol 2008

20%-30% των όγκων <4εκ είναι καλοήθεις

Kutikov A, BJU Int 2008

Pahernik S, J Urol 2007

AJCC TNM
(7th edition, January 2010)

* **TX:** The primary tumor cannot be evaluated.
* **T0:** There is no evidence of a primary tumor in the kidney(s).
* **T1:** The tumor is found only in the kidney and is 7 centimeters (cm) or smaller in size at its largest area.
* **T1a:** The tumor is found only in the kidney and is 4 cm or smaller in size at its largest area.
* **T1b:** The tumor is found only in the kidney and is between 4 cm and 7 cm at its largest area.
* **T2:** The tumor is found only in the kidney and is larger than 7 cm in size at its largest area.
* **T2a:** The tumor is only in the kidney and is more than 7 cm but 10cm or less at its largest area.
* **T2b:** The tumor is only in the kidney and is more than 10 cm at its largest area.
* **T3:** The tumor has grown into major veins or perinephric tissue. It has not grown into the adrenal gland and it has not spread beyond Gerota's fascia
* **T3a:** The tumor has spread to the renal vein, or the muscles of the vein, or it has spread to the fat surrounding the kidney and/or the fat inside the kidney. The tumor has not grown beyond Gerota's fascia.
* **T3b:** The tumor has grown into vena cava, below the diaphragm
* **T3c:** The tumor has spread to the vena cava above the diaphragm or the walls of the vena cava.
* **T4:** The tumor has spread to areas beyond Gerota's fascia and extends into the adrenal gland on the same side of the body as the tumor.
* **NX:** The regional lymph nodes cannot be evaluated.
* **N0:** The cancer has not spread to the regional lymph nodes.
* **N1:** The cancer has spread to regional lymph nodes.
* **M0:** The disease has not metastasized.
* **M1:** The cancer has spread to other parts of the body beyond the kidney area.

Διατήρηση οργάνου Πώς?

- Παρακολούθηση (ενεργητική)

- Μερική νεφρεκτομή

- Μικρής επεμβατικότητας παρεμβάσεις (κρυοθεραπεία, RF)

Παρακολούθηση??

Study (yr)	Study Type	No. of Patients	Age (yrs)		Tumor Size (cm)		Follow-up (yrs)		Growth Rate (cm/yr)		Progression[a] Rate (%)	Metastasis Rate (%)	CSS (%)	OS (%)	Received Definitive Management (%)
			Mean	Median	Mean	Median	Mean	Median	Mean	Median					
Abou Youssif[94] (2007)	Retro	35	71.8	—	2.2	2.2	4.0	3.4	0.21	0.17	—	5.7	100	74.3	22.9
Kouba[100] (2007)	Retro	43	67.0	69.0	2.9	2.9	3.0	—	0.7	0.35	0	—	100	90.7	30.2
Abouassaly[95] (2008)	Retro	110	—	81.0	—	2.5	—	2.0	0.26	0.08	3.6	—	100	69	3.6
Crispen[96] (2008)	Retro	109	69.8	73.0	2.6	2.0	—	2.2	0.28	0.21	4.3	1.4	—	—	36.0
Haramis[97] (2011)	Retro	44	—	71.7	—	2.7	—	6.4	—	0.15	0	0	100	97.7	4.5
Jewett[98] (2011)	Prosp	178	73.0	74.0	2.1	2.1	—	—	0.13	—	13.1	1.1	100	94.4	5.1
Mason[99] (2011)	Prosp	82	74.0	—	—	2.3	—	3.0	0.25	—	—	1.2	98.8	91.4	14.6

Μεγαλύτερες ηλικίες >70

Μικροί όγκοι <3 εκ

Ρυθμός ανάπτυξης <0,25 cm/ έτος

Ανάγκη για αντιμετώπιση σε 3-36%

Cancer Control July 2013,

EAU Guidelines

Conclusions	LE
Population-based analyses show a significantly lower cancer-specific mortality for patients treated with surgery compared to non-surgical management. However, the same benefit in cancer-specific mortality is not confirmed in analyses focusing on older patients (> 75 years).	3
In active surveillance cohorts, the growth of small renal masses is low in most cases and progression to metastatic disease is rare (1-2%).	3

Recommendations	GR
Due to the low quality of available data no recommendation can be made on RFA and cryoablation.	C
In the elderly and/or comorbid patients with small renal masses and limited life expectancy, active surveillance, RFA and cryoablation can be offered.	C

Ενδείξεις Μερικής Νεφρεκτομής

1. Απόλυτες: Ανατομικά ή Λειτουργικά Μονήρης Νεφρός.

2. Σχετικές: - Λειτουργικός έτερος νεφρός που όμως πάσχει από πάθηση που θα μπορούσε να επιφέρει έκπτωση της νεφρικής λειτουργίας στο μέλλον.
   - Κληρονομικές μορφές νεφροκυτταρικού καρκίνου με υψηλό κίνδυνο εμφάνισης όγκου στον άλλο νεφρό (π.χ. Σύνδρομο VHL).

3. Εκλεκτικές: - Εντοπισμένος όγκος στον ένα νεφρό με υγιή τον άλλο νεφρό.

Μερική νεφρεκτομή όγκοι < 4 εκ, T1a

Διατήρηση νεφρικής λειτουργίας
Καλύτερη συνολική επιβίωση

Zorn et al Urology 2007
Houston Thompson, J Urol 2008

Ίδιες επιπλοκές

Joudi et al J Urol 2007
Corman et al BJU Int 2000

Ισοδύναμο ογκολογικό αποτέλεσμα

Fergany et al. J Urol 2000
Patard et al. J Urol 2004

Σειρές μερικής νεφρεκτομής

Study (yr)	Study Type	No. of Patients	Approach	Conversion to RN (%)	Ischemia Time (min)	Operative Time (min)	EBL (mL)	Positive Margin (%)	Overall Rate of Complications (%)	Transfusion Rate (%)	Urinary Leak (%)	Delayed Bleed (%)	Length of Stay (days)
Patard[34] (2007)	Retro	600	OPN	—	19.3	147	386	1.5	10.8	6.3	1.7	—	7.7
Van Poppel[43] (2007)	Prosp RCT	26	OPN	14.6	—	—	—	1.9	—	—	4.4	—	—
Gill[35] (2007)	Retro	1,023	OPN	0	20.1	266	376	0	20.2	5.1	2.4	1.6	5.8
		771	LPN	0.1	30.7	201	300	0.9	26.7	4.5	3.1	4.2	3.3
Pierorazio[36] (2011)	Retro	102	LPN	—	18	193	245	1	16.7	4.9	5.9	—	—
Marszalek[37] (2011)	Retro	105	LPN	3.8	23.2	102	—	—	12.3	—	1.9	6.6	5.7
Benway[38] (2009)	Retro	118	LPN	0.8	28.4	174	196	1	10.2	—	3.4	—	2.7
		129	RALPN	0	19.7	189	155	3.9	8.5	—	2.3	—	2.4
Spana[39] (2011)	Retro	450	RALPN	1.1	20.2	188	206	—	15.8	4	1.6	0.4	—
Dulabon[40] (2011)	Retro	446	RALPN	1.5	20.21	188	213	1.6	5.1	4	1.6	—	2.9

Study (yr)	Study Type	No. of Patients	Median Age (yrs)	Median Tumor Size (cm)	Median Follow-up (yrs)	Progression (%)				CSS (%)	OS (%)	10-yr Rates (%)		
						Overall	Local	Distant	Local and Distant			Progression	CSS	OS
Herr[41] (1999)	Retro	70	57	3	10	3	1.5	1.5	—	97	93	—	—	65
Fergany[42] (2000)	Retro	107	73[a]	4.7[a]	8.7	32	4	21.5	6.5	74	31	—	73	45
Van Poppel[44] (2011)	Prosp RCT	268	62	3	9.3	4.5	4	—	—	97	75	4.1	—	75.7

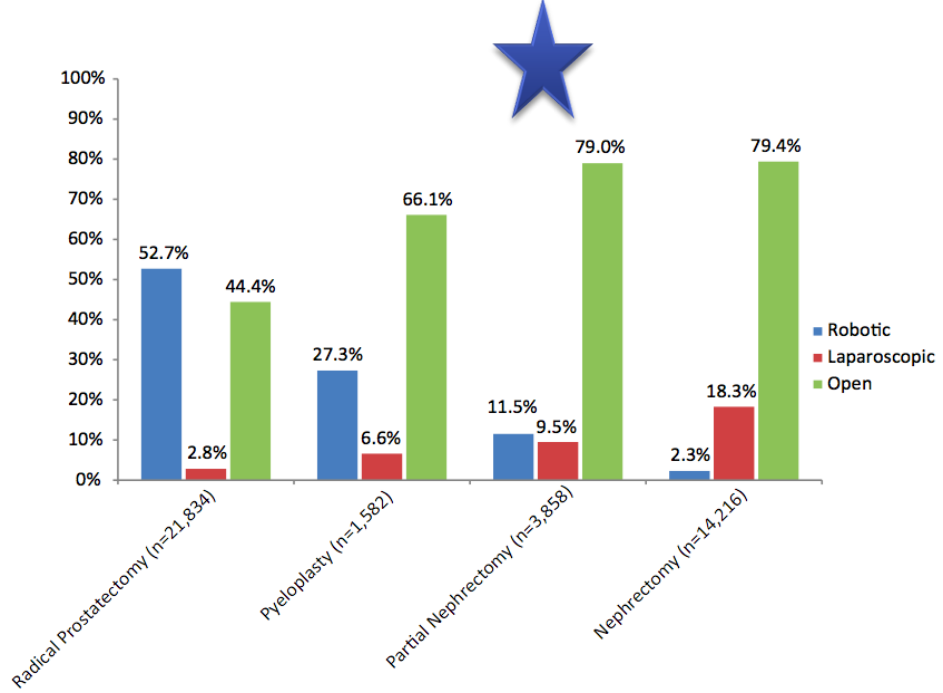
EAU Guidelines

Conclusions	LE
PN achieves similar oncological outcomes to RN for clinically localised tumours (cT1).	1b
Ipsilateral adrenalectomy during RN or PN has no survival advantage	3
In patients with localised disease without evidence of LN metastases, there is no survival advantage of LND in conjunction with RN.	1b
In patients unfit for surgery with massive haematuria or flank pain, embolisation can be a beneficial palliative approach.	3

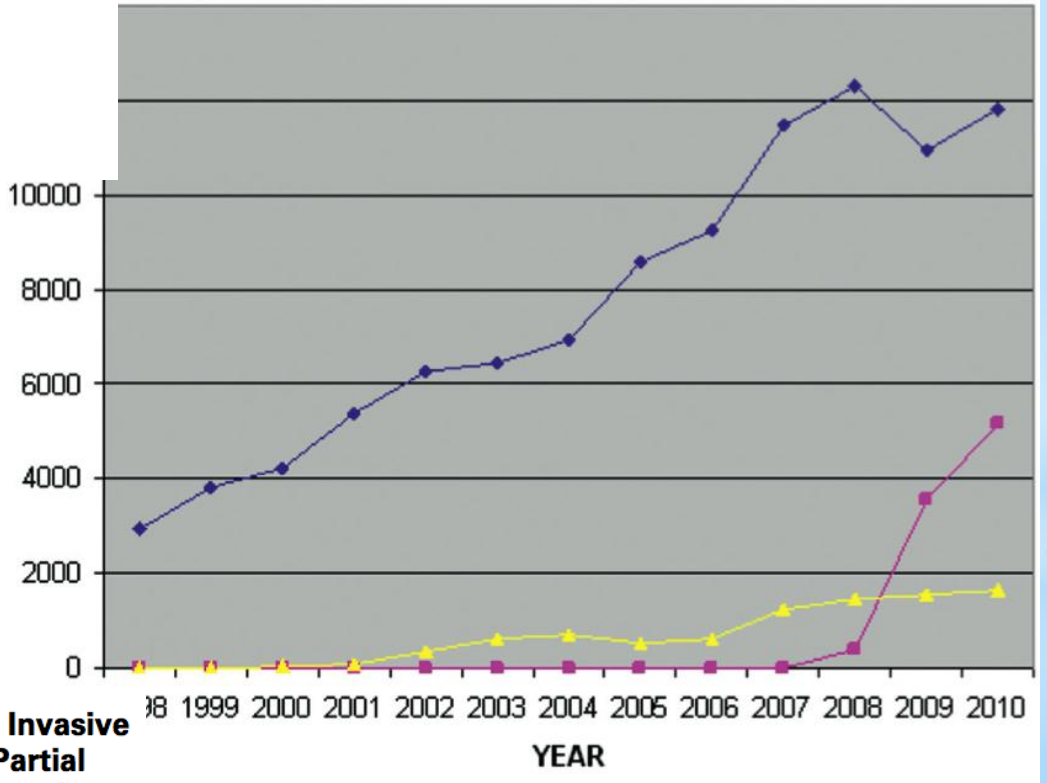
Recommendations	GR
Surgery is recommended to achieve cure in localised RCC.	B
PN is recommended in patients with T1a tumours.	A
PN should be favoured over RN in patients with T1b tumour, whenever feasible.	B
Ipsilateral adrenalectomy is not recommended when there is no clinical evidence of invasion of the adrenal gland.	B
LND is not recommended in localised tumour without clinical evidence of LN invasion.	A

EAU Guidelines

PN can be performed, either with an open, pure laparoscopic or robot-assisted approach, based on surgeon's expertise and skills.	2b



J UROL 2012



Practice Patterns and Outcomes of Open and Minimally Invasive Partial Nephrectomy Since the Introduction of Robotic Partial Nephrectomy: Results from the Nationwide Inpatient Sample

Khurshid R. Ghani,*,† Shyam Sukumar,† Jesse D. Sammon, Craig G. Rogers,‡ Quoc-Dien Trinh‡ and Mani Menon

J UROL 2014

OPEN ACCESS Freely available online

PLOS ONE

Robotic versus Open Partial Nephrectomy: A Systematic Review and Meta-Analysis

Zhenjie Wu[1☯], Mingmin Li[2☯], Bing Liu[1☯], Chen Cai[3], Huamao Ye[1], Chen Lv[1], Qing Yang[1], Jing Sheng[2], Shangqing Song[1], Le Qu[1], Liang Xiao[1], Yinghao Sun[1*], Linhui Wang[1*]

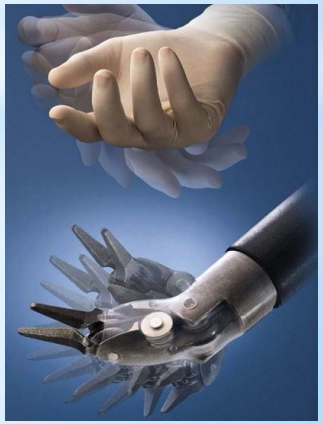
1 Department of Urology, Changhai Hospital, Second Military Medical University, Shanghai, P. R. China, **2** Department of Radiology, Changhai Hospital, Second Military Medical University, Shanghai, P. R. China, **3** Department of Special Clinic, Changhai Hospital, Second Military Medical University, Shanghai, P. R. China

April 2014

Λιγότερες: Επιπλοκές
Χρόνος νοσηλείας
Απώλεια αίματος

Ιδιες πιθανότητες : Μετατροπή σε ριζική νεφρεκτομή
Θετικά Χειρουργικά όρια
Χρόνος ισχαιμίας

Περισσότερος: Χειρουργικός χρόνος
Κόστος?



BJUI
BJU International

Comparison of peri-operative outcomes of robot-assisted vs laparoscopic partial nephrectomy: a meta-analysis

2013

C

Study or sub-category	Total	RAPN Mean (SD)	Total	LPN Mean (SD)	WMD (random) 95% CI	Weight %	WMD (random) 95% CI
Jeong	31	20.90 (14.90)	26	17.20 (15.60)		8.41	3.70 [−4.27, 11.67]
Kural	11	26.45 (8.86)	20	30.50 (15.19)		7.73	−4.05 [−12.52, 4.42]
Haber	75	18.20 (12.32)	75	20.30 (10.43)		17.97	−2.10 [−5.75, 1.55]
Pierorazio	48	14.10 (6.30)	102	18.00 (12.50)		19.91	−3.90 [−6.91, −0.89]
Seo	13	35.30 (8.50)	14	36.40 (6.80)		12.23	−1.10 [−6.93, 4.73]
Williams	27	18.50 (7.60)	59	28.00 (7.60)		18.55	−9.50 [−12.96, −6.04]
Masson	220	20.40 (9.70)	45	24.30 (15.20)		15.20	−3.90 [−8.52, 0.72]
Total (95% CI)	425		341			100.00	−3.65 [−6.46, −0.83]

Test for heterogeneity: $Chi^2 = 15.19$, df = 6 (P = 0.02), $I^2 = 60.5\%$
Test for overall effect: Z = 2.54 (P = 0.01)

−100 −50 0 50 100
Favours RAPN Favours LPN

Χρόνος ισχαιμίας

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

2012

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

difference between the two groups regarding operative times ($p = 0.58$), estimated blood loss ($p = 0.76$), or conversion rates ($p = 0.84$). The RPN group had significantly less warm ischaemic time than the LPN group ($p = 0.0008$). There was no difference regarding postoperative length of hospital stay ($p = 0.37$), complications ($p = 0.86$), or positive margins ($p = 0.93$).

An increased use of laparoscopic radical nephrectomy is observed at the expense of partial nephrectomy, which experienced a decrease in use of 12% per year over the same time period.

Abouassaly R, et al. Unintended consequences of laparoscopic surgery on partial nephrectomy for kidney cancer. J Urol 2010;183:467–472.

The advent of robotic technology has resulted in a sharp increase in the use of partial nephrectomy, from 50% in the laparoscopic era to roughly 90% of all pT1a lesions at the present time

Benway BM, Bhayani SB
Re: Cost Comparison of Robotic, Laparoscopic, and Open Partial Nephrectomy (From: Mir SA, Cadeddu JA, Sleeper, JP, Lotan, Y. J Endourol 2011;25:00-00).
J Endourol 2011 Jul 28. [Epub ahead of print]

Καθημερινή πρακτική

Η μερική νεφρεκτομή ΔΕΝ γίνεται όσο συχνά θα έπρεπε

cT1a RCC, NSS → 22% in 2005

→ 53% in 2011

cT1b NSS → 2% in 2005

→ 10% in 2011

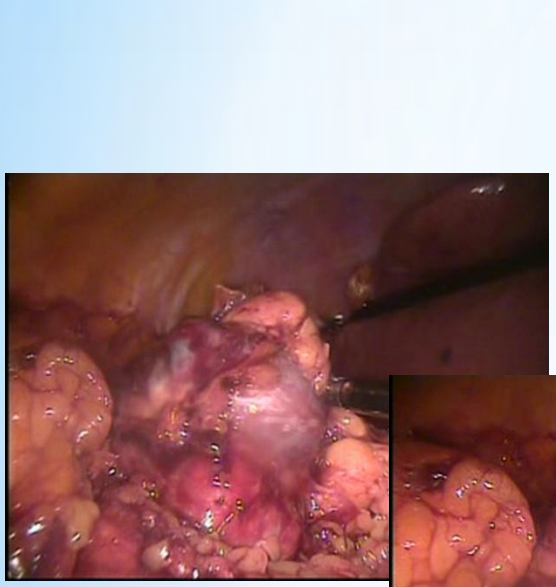
Ljungberg Scand J Urol. 2014

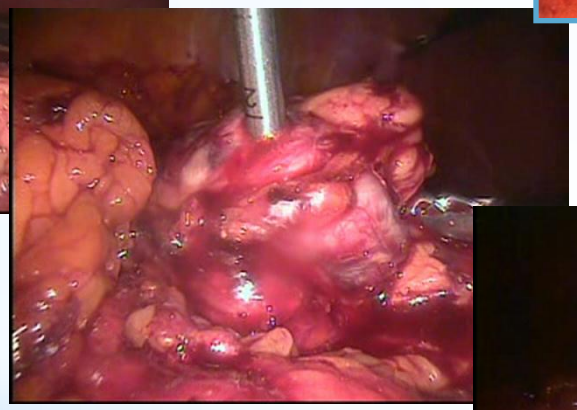
Εναλλακτικές Θεραπείες μικρής επεμβατικότητας

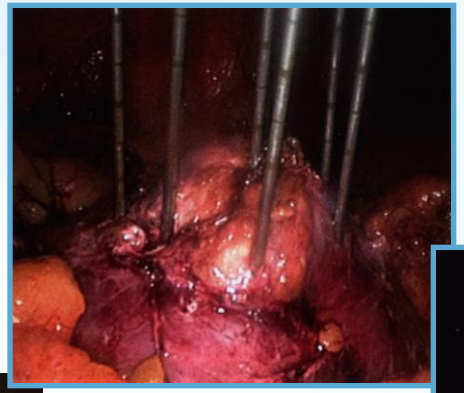
* Κρυοθεραπεία
* Radiofrequency ablation (RFA)

* Διαδερμικά
* Λαπαροσκοπικά
* Ανοικτά??

Λαπαροσκοπική κρυοθεραπεία







KJU
Korean Journal of Urology

www.kjurology.org
http://dx.doi.org/10.4111/kju.2014.55.12.780

Review Article

Current Status of Cryotherapy for Prostate and Kidney Cancer

2014

TABLE 2. Current literature on laparoscopic renal cryotherapy

Source	Case	Age (y)	Follow-up (mo)	Tumor size (cm)	RCC, n (%)	No. of recurrences (% in RCC)	Major complication
Wyler et al (2006) [63]	15	68	21	2.8	10 (67)	1 (10.0)	No major complications
Weld et al. (2007) [64]	31	65	45.7	2.1	22 (71)	1 (4.5)	3: one urine leak, one open conversion, one heart failure
Wright et al. (2007) [65]	32	67	18	1.9	18 (56)	2 (11.1)	No major complications
Derweesh et al. (2008) [66]	34	67	25	2.1	24 (71)	1 (4.2)	No major complications
Ko et al. (2010) [67]	39	63	23.5	2.5	27 (60)	1 (3.7)	No major complications
Aron et al. (2010) [54]	80	66	95	2.3	55 (69)	11 (20.0)	6: two pneumonia, one pneumothorax, one heart failure, one retroperitoneal bleeding, one intercostal artery injury requiring re-operation
Guazzoni et al. (2010) [68]	44	62	46	2.14	44 (100)	0 (0)	3: two significant blood loss, one UPJ obstruction
Tsivian et al. (2010) [53]	163	66	20	2.4	118 (72.4)	7 (4.3)	1: one open conversion
Tanagho et al (2012) [55]	62	67	76	2.52	35 (57)	6 (17.1)	2: two significant blood loss

Current Management Considerations for the Incidentally Detected Small Renal Mass

David D. Buethe, MD, and Philippe E. Spiess, MD

Cancer Control July 2013, V

Study (yr)	Study Type	No. of Patients	Approach	Modality	Age (yrs)		Tumor Size (cm)		Follow-up (yrs)		Rate of Local Recurrence (%)	Metastasis Rate (%)	CSS (%)	OS (%)	Complication Rate (%)
					Mean	Median	Mean	Median	Mean	Median					
del Cura[77] (2010)	Retro	65	Perc	RFA	68.0	—	3.1	—	2.2	—	7.7	—	—	89.7	13
Ferakis[78] (2010)	Retro	39	Perc	RFA	61.4	—	3.1	—	5.1	—	10.2	—	—	—	—
Tracy[89] (2010)	Retro	208	Perc/Lap/Open	RFA	64.0	—	2.4	—	2.3	—	4.4	1.4	99.5	—	—
Zagoria[90] (2011)	Retro	41	Perc	RFA	—	72	—	2.6	—	4.7	12.2	7	97.6	59	8
Ji[91] (2011)	Retro	106	Lap	RFA	58.1	—	—	—	2.7	—	0.9	—	100	100	6.6
Chalasani[92] (2010)	Retro	19	Lap/Open	Cryo	56.7	—	2.6	—	3.5	—	21	—	94.7	89.5	0
Strom[80] (2011)	Retro	61	Perc	Cryo	68.6	—	2.7	—	2.6	—	16.4	—	93.7	88.9	14.8
		84	Lap	Cryo	65.7	—	2.5	—	3.5	—	5.9	—	91.7	89.3	15.5

Συγκριτικές μελέτες μερικής νεφρεκτομής, κρυοθεραπείας, RFA σε μικρούς όγκους νεφρού

	NSS	Cryoablation	RFA
N studies	50	19	21
Mean age [years]	60.1*	65.7	67.2
Tumor size [cm]	3.4*	2.56	2.69
FU [month]	54*	18.3	16.4
Pathological confirmation	100%*	82.3%#	57.2%
% Malignant	87.6%	75,8%	88.3%
Local recurrence (%)	2.6%*	4.6%	11.7%
Progression to M+	5.6%	1.2%	2.3%

*Significant difference between NSS and cryoablation/RFA
Significant difference between cryoablation and RFA

Kunkle DA et al J Urol 2008

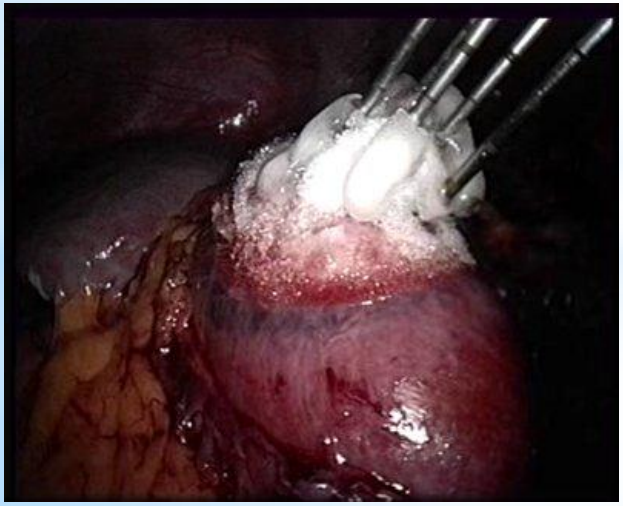
Εναλλακτικές θεραπείες Συμπεράσματα

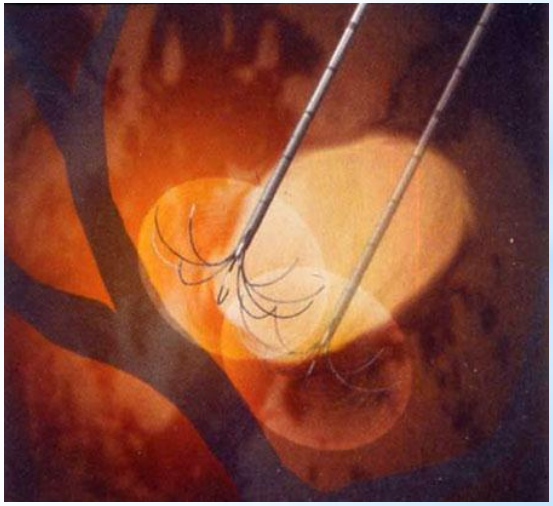
- **ΠΛΕΟΝΕΚΤΗΜΑΤΑ**
  - ✓Λιγότερες επιπλοκές
  - ✓Ελάχιστα επεμβατικές
    - ✓Τοπική αναισθησία
    - ✓Πόνος
    - ✓Βραχύτερη νοσηλεία
    - ✓Ασθενείς με υψηλό ASA
  - ✓Καλύτερη διατήρηση νεφρικής λειτουργίας
- **ΜΕΙΟΝΕΚΤΗΜΑΤΑ**
  - ✓Ογκολογικά αποτελέσματα (?)
    - ✓Μικρές σειρές
    - ✓Βραχύ FU
  - ✓Κόστος (?)

EAU Guidelines

Quality of the available data does not allow definitive conclusions regarding morbidity and oncological outcomes of cryoablation and RFA.	3
Low quality studies suggest a higher local recurrence rate for minimally invasive therapies compared to PN.	3

Recommendations	**GR**
Due to the low quality of available data no recommendation can be made on RFA and cryoablation.	C
In the elderly and/or comorbid patients with small renal masses and limited life expectancy, active surveillance, RFA and cryoablation can be offered.	C





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Current Patterns of Presentation and Treatment of Renal Masses: A Clinical Research Office of the Endourological Society Prospective Study

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Management, *n* (%)	
Interventional[b]	4096 (94.1)
Active surveillance	156 (3.6)
Medical management only	68 (1.6)

TABLE 2. TREATMENT MODALITY AND APPROACH FOR CASES (%) TREATED INTERVENTIONALLY*

	Radical nephrectomy	*Partial nephrectomy*	*Nephroureterectomy*	*Enucleation*	*Cryoablation*	*Radiofrequency*	*Other*	*NA*	*Total*
Open[a]	1167 (28.5)	813 (19.8)	24 (0.6)	131 (3.2)	1 (0.0)	1 (0.0)	9 (0.2)	3 (0.1)	2149 (52.4)
Laparoscopic	926 (22.6)	412 (10.0)	22 (0.5)	93 (2.3)	47 (1.1)	2 (0.0)	1 (0.0)	0	1503 (36.7)
Robotic	31 (0.8)	262 (6.4)	0	20 (0.5)	1 (0.0)	0	1 (0.0)	0	315 (7.7)
NOTES	0	0	0	0	0	0	0	0	0 (0.0)
LESS	8 (0.2)	3 (0.1)	0	1 (0.0)	2 (0.0)	0	0	0	14 (0.3)
Percutaneous	0	0	0	0	20 (0.5)	70 (1.7)	3 (0.1)	0	93 (2.3)
NA	7 (0.2)	0	1 (0.0)	0	0	2 (0.0)	4 (0.1)	12 (0.3)	26 (0.6)
Total	2139 (52.2)	1490 (36.3)	47 (1.1)	245 (6.0)	71 (1.7)	75 (1.8)	18 (0.4)	15 (0.4)	4100

55% ανοικτή ριζική ή μερική

NS 46%

Νέα τεχνολογία

Ανάγκη για

- εκπαίδευση ουρολόγων
- απόκτηση δεξιοτήτων
- εφαρμογή στην καθημερινή κλινική πρακτική

The hospital did not purchase this robotic arm so that you could scratch your back with it, doctor !

Πρόγραμμα εκπαίδευσης «Ρομποτική υποβοήθηση στην Ουρολογία» Λαϊκό Νοσοκομείο

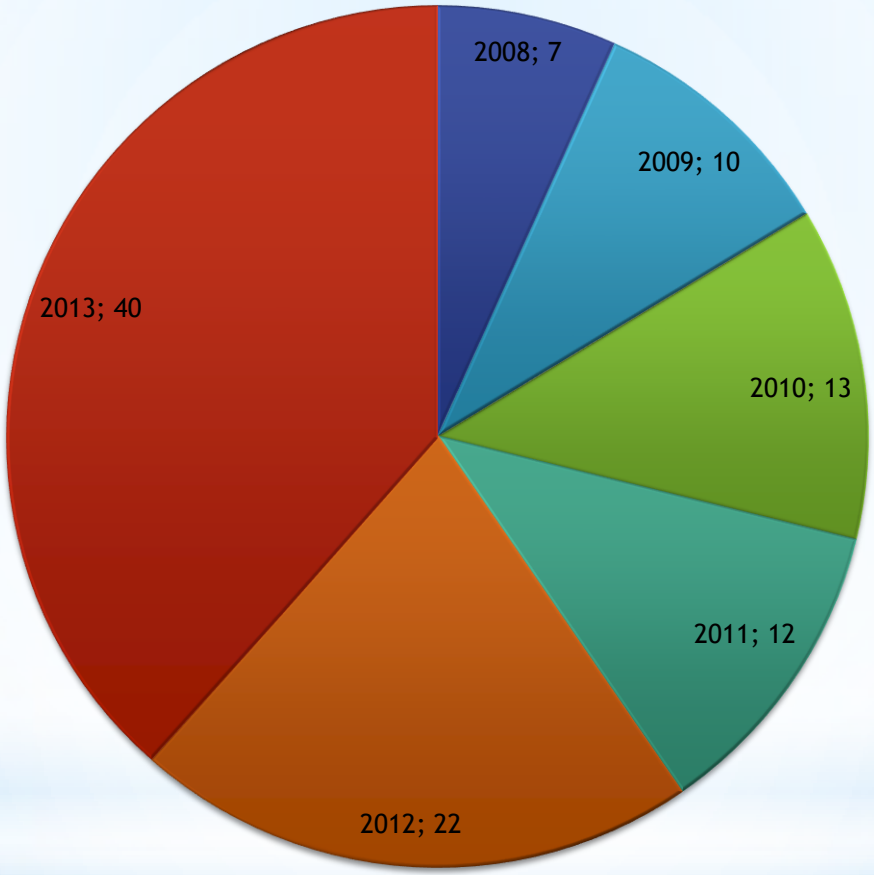
* Μάρτιος 2013: mini fellowship πρόγραμμα για εκπαίδευση στη ρομποτική ουρολογία
* Για νέους ειδικούς ή ειδικευόμενους
* Διάρκεια: δύο μήνες
* Χωρίς οικονομική επιβάρυνση
* Επιλογή

  → επίσημη ανακοίνωση από ΕΟΕ:

  -C.V.

  -Συνέντευξη

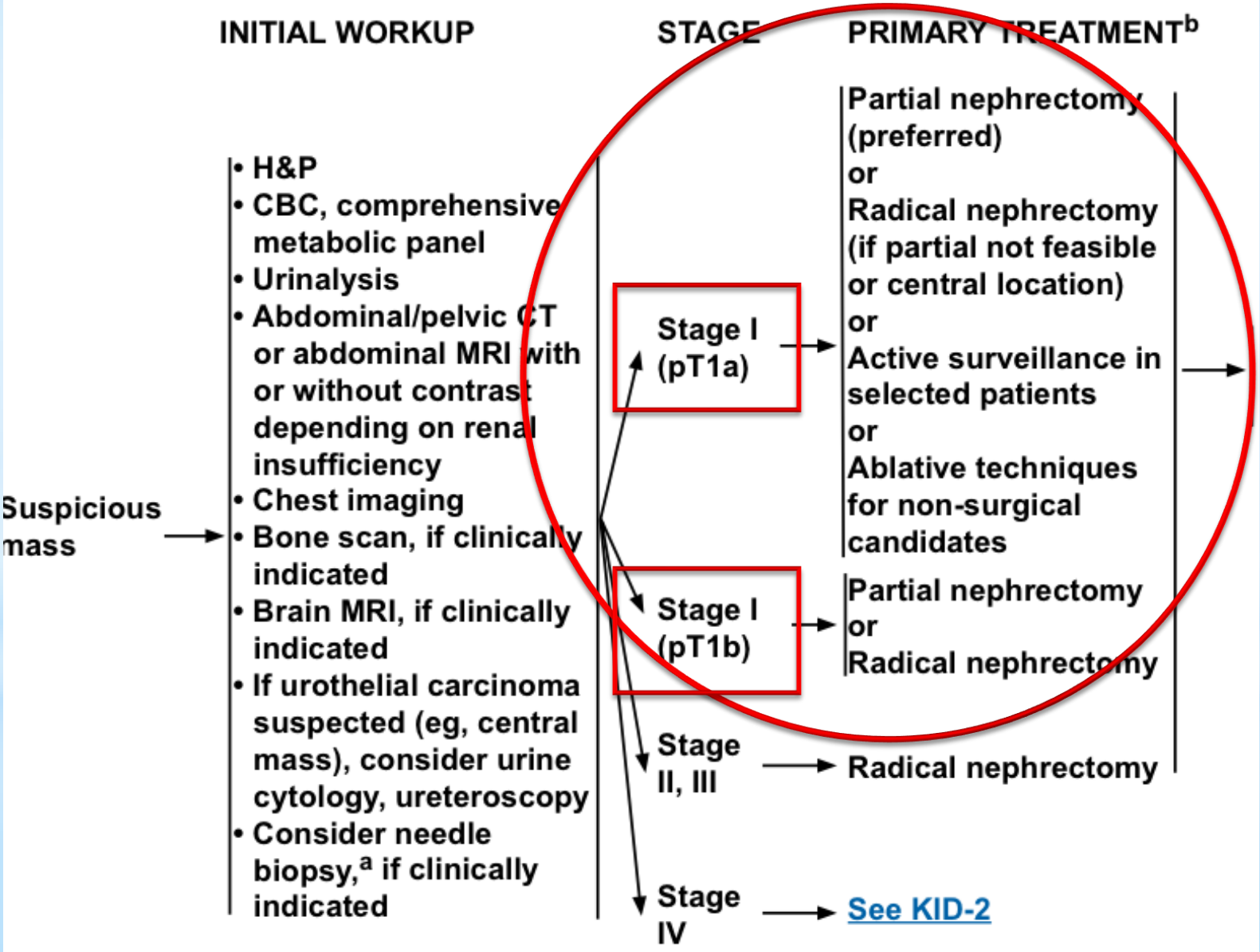
Λαϊκό Νοσοκομείο

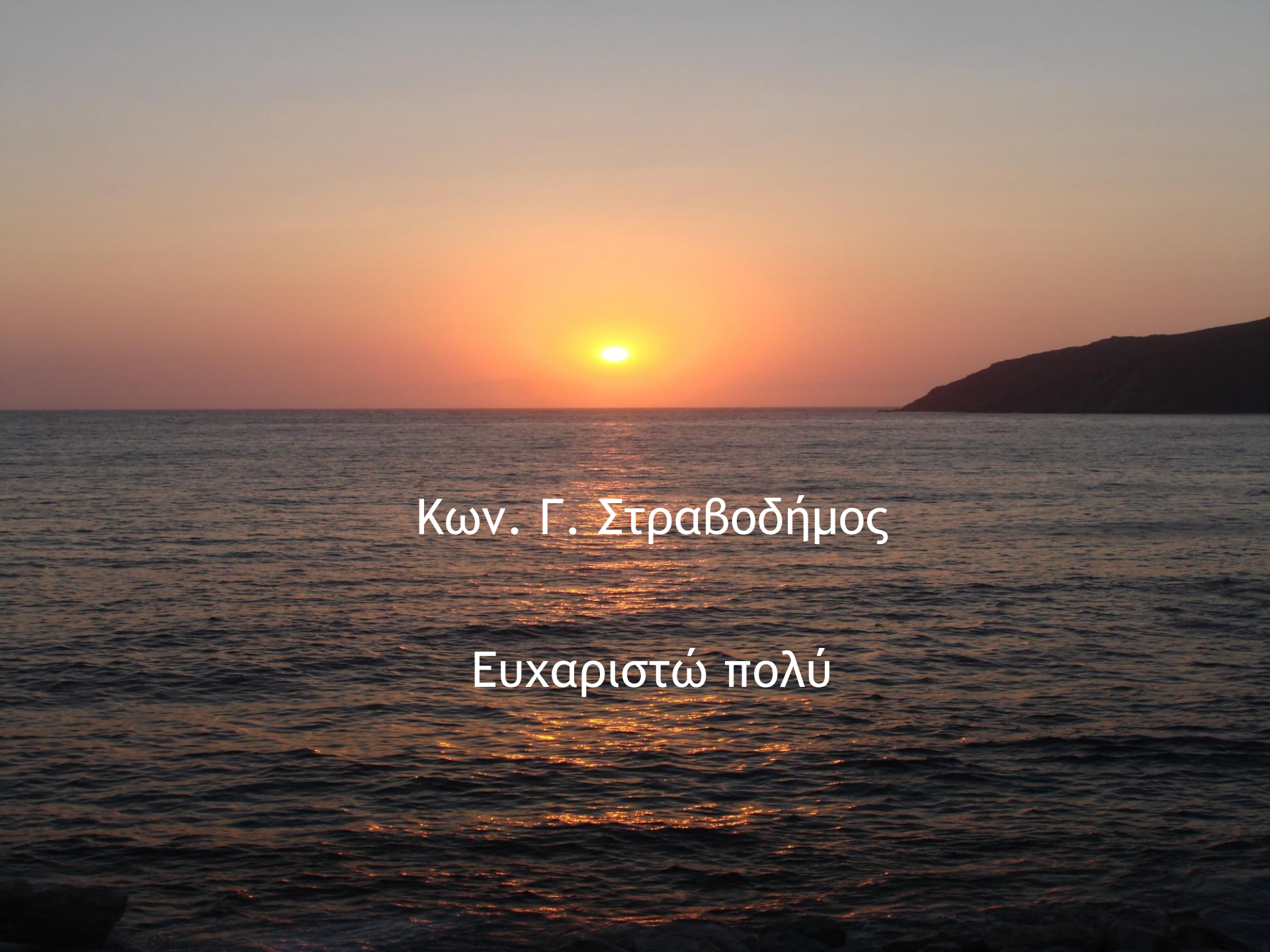


% ποσοστό λαπ-ρομποτικών επεμβάσεων σε σχέση με τις ανοικτές
2008: 7%, 2010: 13%, 2013: 40%

NCCN National Comprehensive Cancer Network®

NCCN Guidelines Version 2.2014
Kidney Cancer




Κων. Γ. Στραβοδήμος
Ευχαριστώ πολύ