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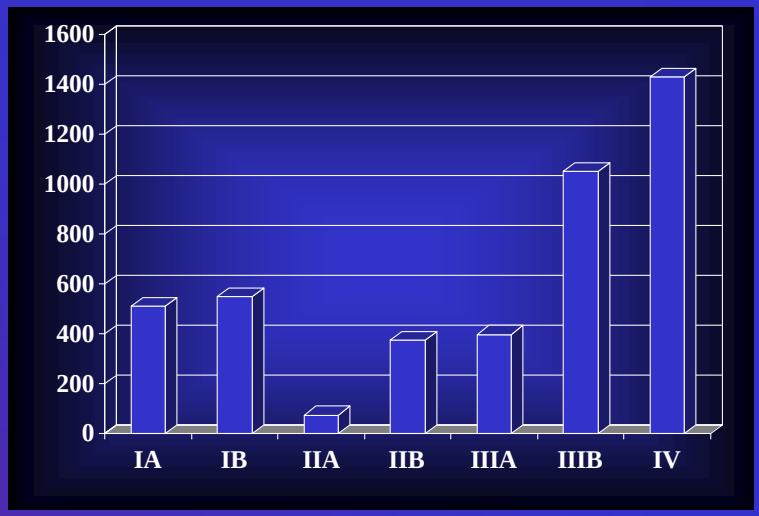
idcsalud Hospital Universitari Sagrat Cor

ESTADIOS PRECOCES

Laureano Molins, MD, PhD
Thoracic Surgery,
Hospital Clínic & Sagrat Cor
Barcelona University, Spain

Surgical Treatment of Early Stage Lung Cancer in Spain

Mountain CF, Chest 1997;111:1710



European Journal of Cardio-Thoracic Surgery 41 (2012) 1052–1058
doi:10.1093/ejcts/ezr184 Advance Access publication 4 January 2012

ORIGINAL ARTICLE

Sleeve lobectomy after induction chemoradiotherapy

Abel Gómez-Caro[a,*], Marc Boada[a], Noemí Reguart[b], Nuria Viñolas[b], Frances Casas[c] and Laureano Molins[a]

[a] General Thoracic Surgery Department, Hospital Clinic, University of Barcelona, Barcelona, Spain
[b] Medical Oncology Department, Hospital Clinic, University of Barcelona, Barcelona, Spain
[c] Radiotherapy Department, Hospital Clinic, University of Barcelona, Barcelona, Spain

Extended Sleeve Lobectomy: One More Step Toward Avoiding Pneumonectomy in Centrally Located Lung Cancer

Jean-Philippe Berthet, MD, Marina Paradela, MD, Maria Jose Jimenez, MD, PhD, Laureano Molins, MD, PhD, and Abel Gómez-Caro, MD, PhD

General Thoracic Surgery Department, Hospital Clinic, Universidad de Barcelona, Barcelona, Spain; and U1046, INSERM, Université Montpellier 1, Université Montpellier 2, Montpellier, France

Surgical Treatment of Early Stage Lung Cancer in Spain

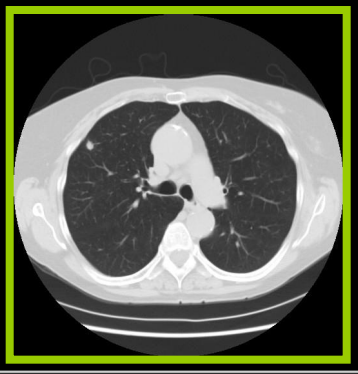
- 20.000 deaths/year in Spain (SEOM)
- 1 out of 4 diagnosed patients has resecable disease.
- Stage IA:

	Spain	Germany	USA	Japan
5year Survival	±70%	±70%	±70%	±80%
Incidence	12%	10%	27%	22%

Pulmonary Nodules

- Small Pulmonary nodules are very prevalent
  - 66% of smokers have a pulmonary nodule
  - 39% participants in NSLT had a positive finding

- Small pulmonary nodules commonly are benign
  - Probability of malignancy increases with the size
    - ≤ 4 mm → < 1% malignant
    - 8-20mm → 10-20% malignant
    - > 20 mm → 50% malignant



Henschke et al.Radiology 2004;231:164-8
Takashima et al. AJR 2003;180:1255-1263
Swensen et al.Radiology 2003;226:756-61

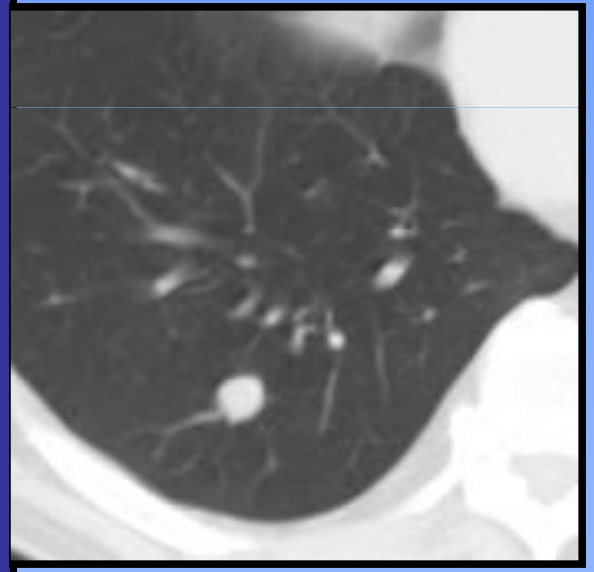
Courtesy Dr. M. Sánchez

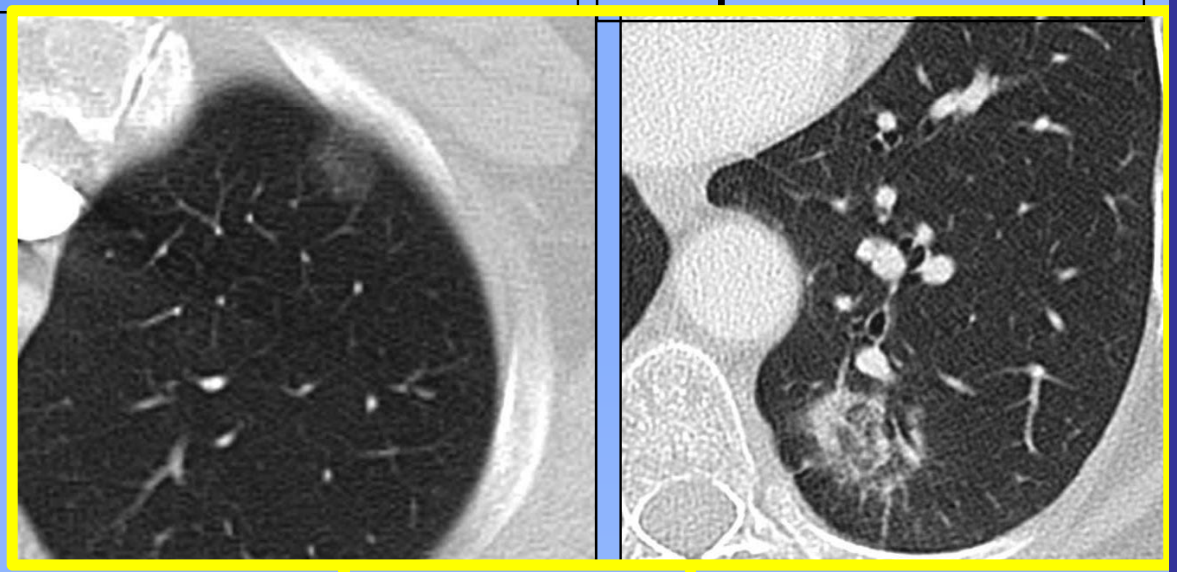
Pulmonary Nodule Density

Solid nodule:
homogenous soft-tissue attenuation

Non Solid nodule:
hazy increase in attenuation in the lung that does not obliterate the bronchial and vascular margins (ground glass)

Part Solid nodule:
both groundglass and solid soft-tissue attenuation components



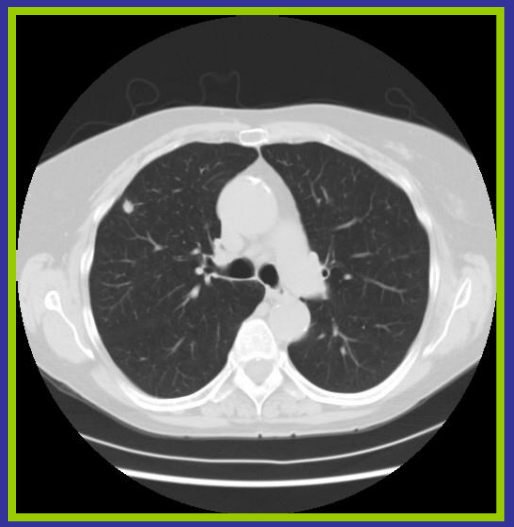


Likelihood of malignancy

SUBSOLID PULMONARY NODULES

Slow growth

Perioperative indentificaction of a pulmonary nodule



- *Digital palpation*
- Intraoperatory ultrasonography
- Metylen blue injection
- CT-guided Microcoil localization

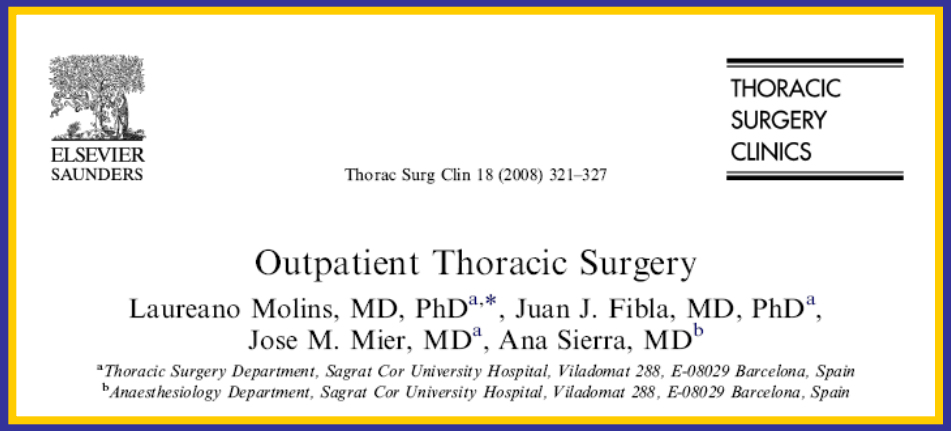
- CT-guided hookwire localization

Experience with CT-guided hook wire for localization of small pulmonary nodules prior to videothoracoscopic resection

Perioperative identification of pulmonary nodules

VATS RESECTION OF PN

- Difficulties in identification because of size and localization. Need of mini thoracotomy for digital palpation.
- The objective is to assess the results of the introduction of a CT-guided hook wire prior to the videothoracoscopic resection as a perioperative localization method


ELSEVIER SAUNDERS

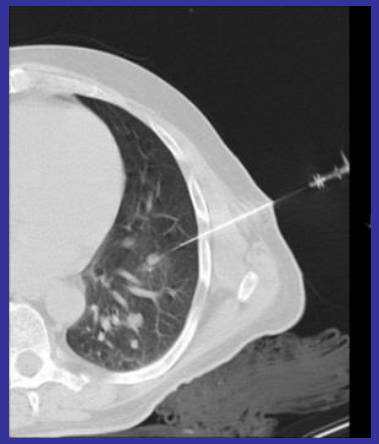
Thorac Surg Clin 18 (2008) 321–327

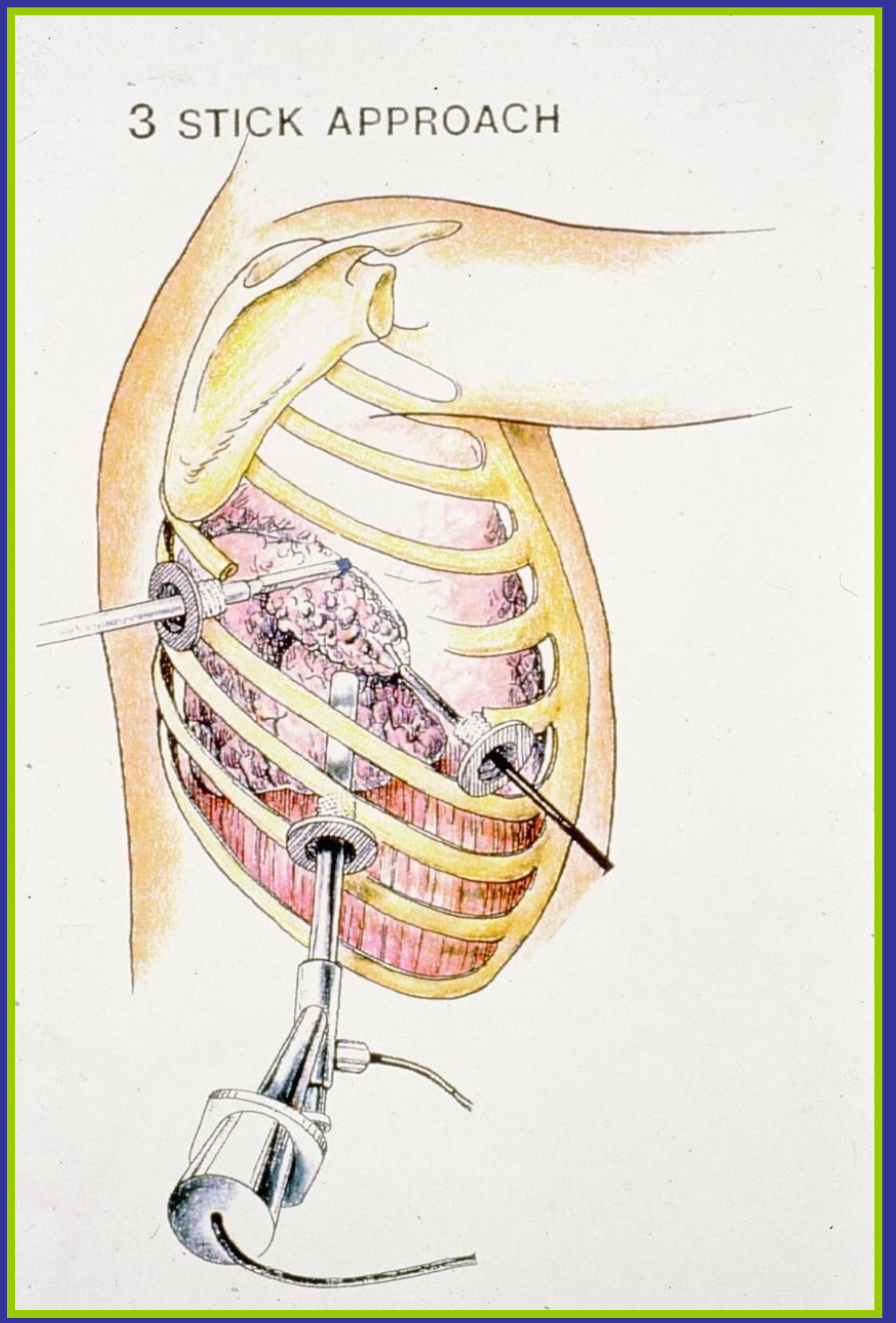
THORACIC SURGERY CLINICS

Outpatient Thoracic Surgery

Laureano Molins, MD, PhD[a,*], Juan J. Fibla, MD, PhD[a], Jose M. Mier, MD[a], Ana Sierra, MD[b]

[a]Thoracic Surgery Department, Sagrat Cor University Hospital, Viladomat 288, E-08029 Barcelona, Spain
[b]Anaesthesiology Department, Sagrat Cor University Hospital, Viladomat 288, E-08029 Barcelona, Spain




3 STICK APPROACH

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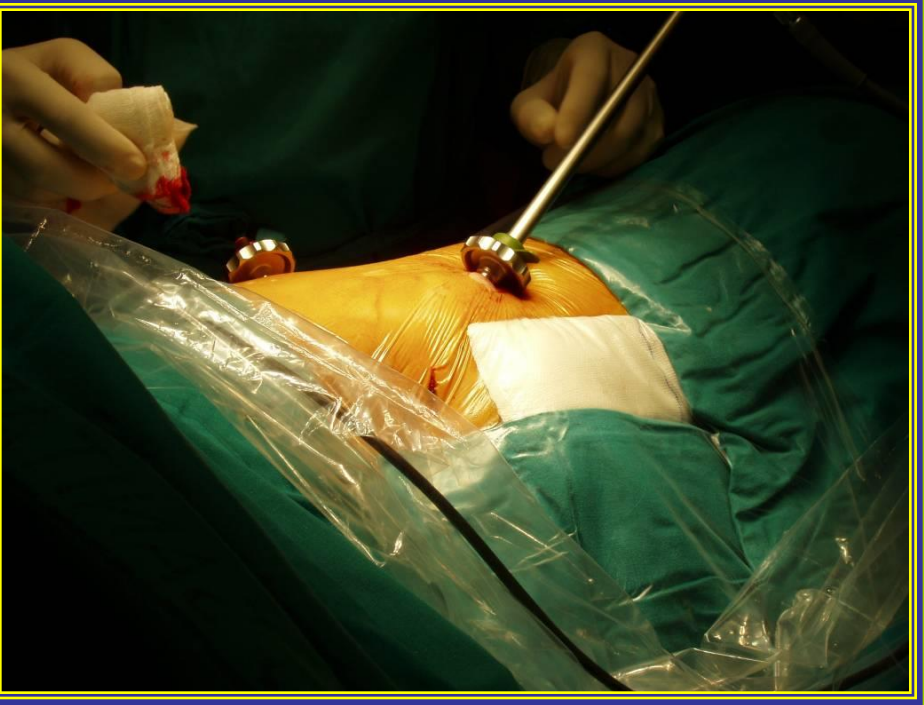
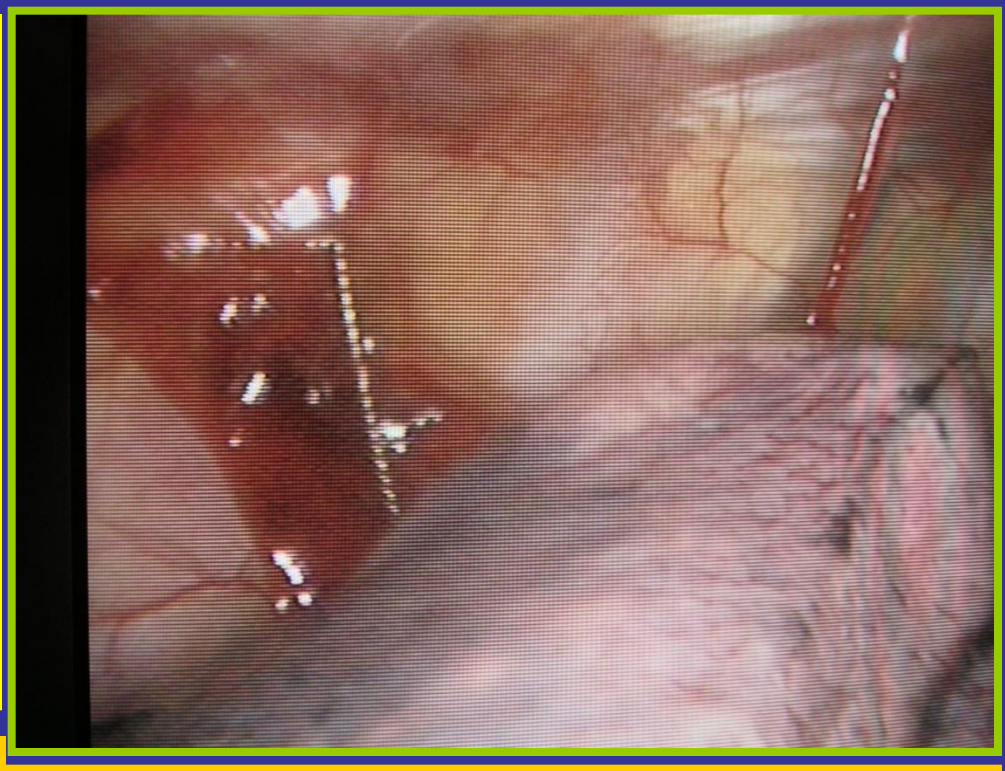
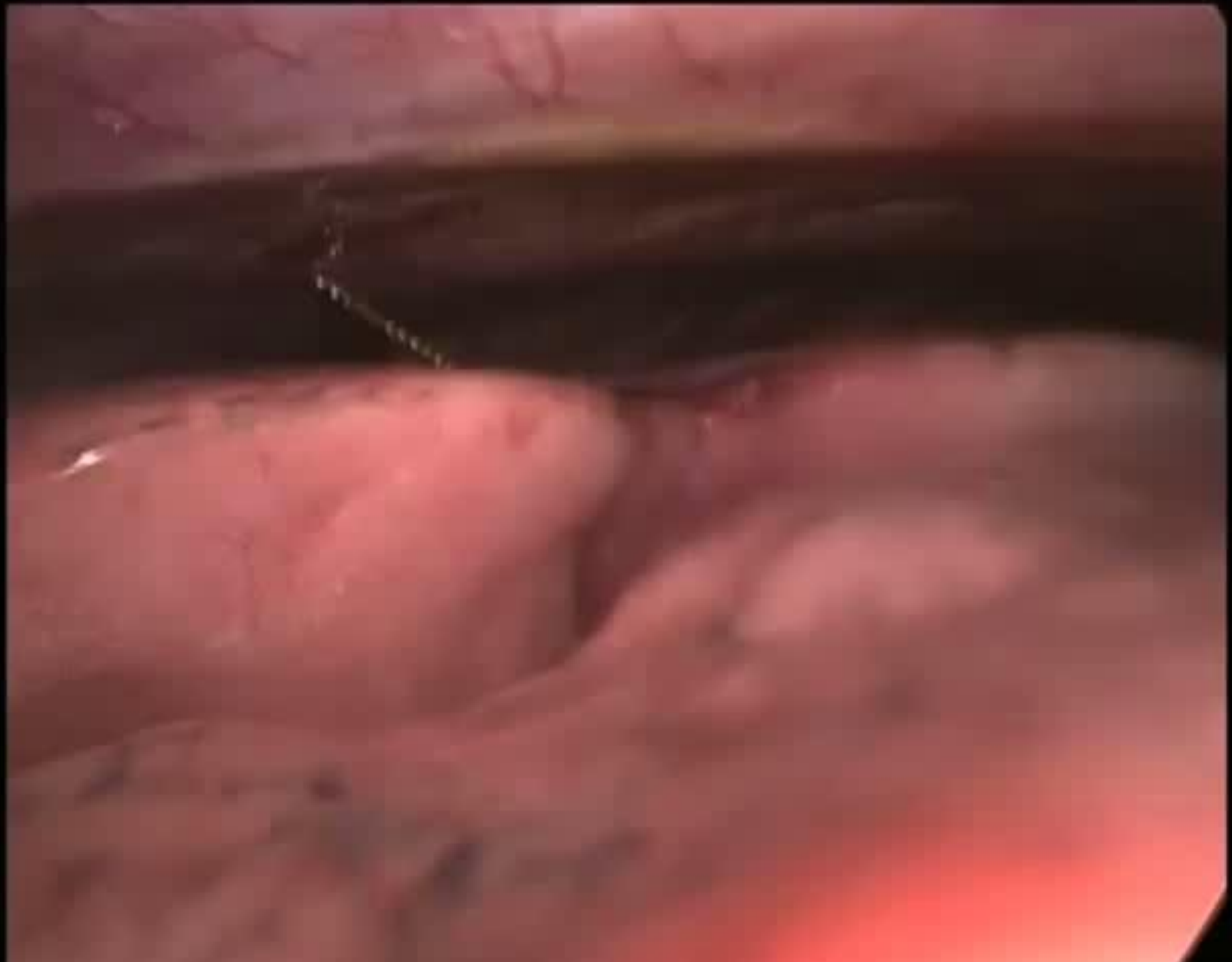
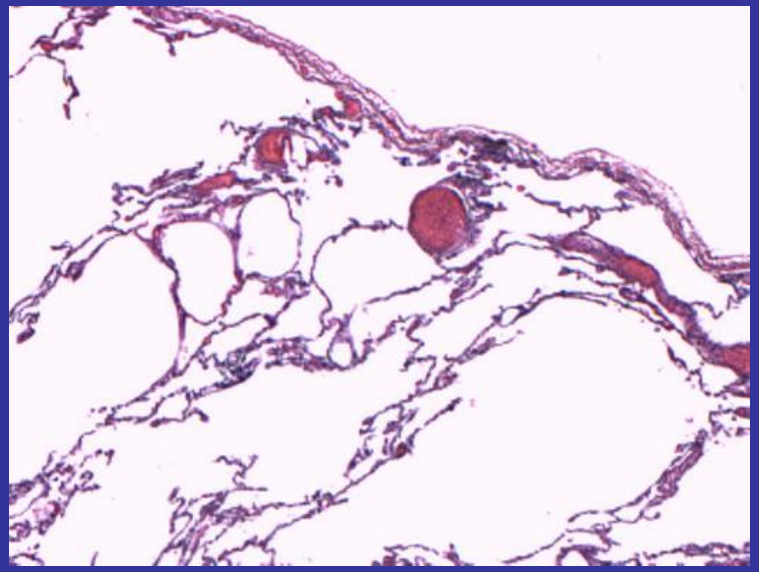
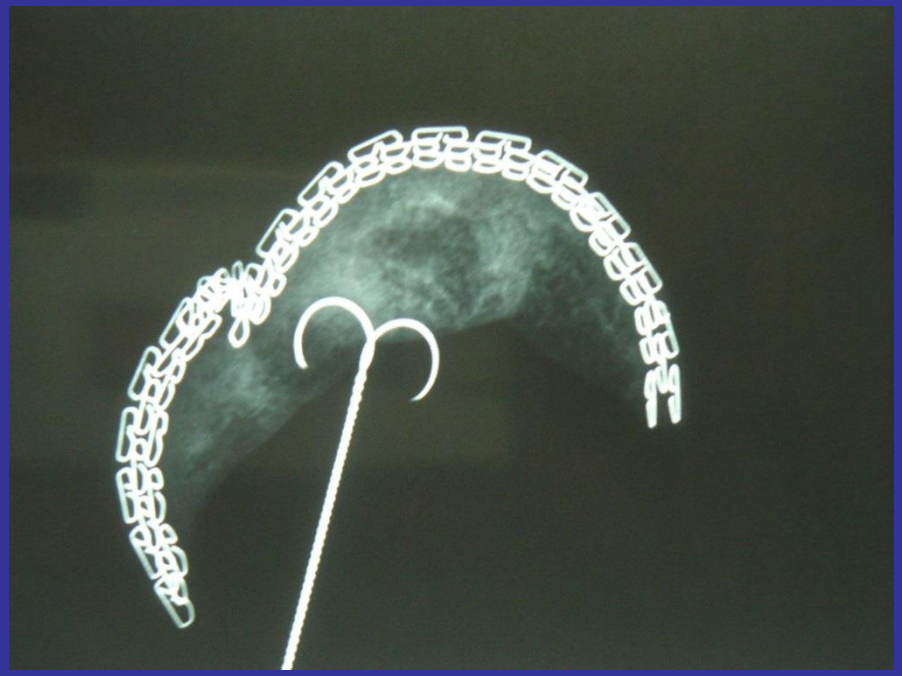


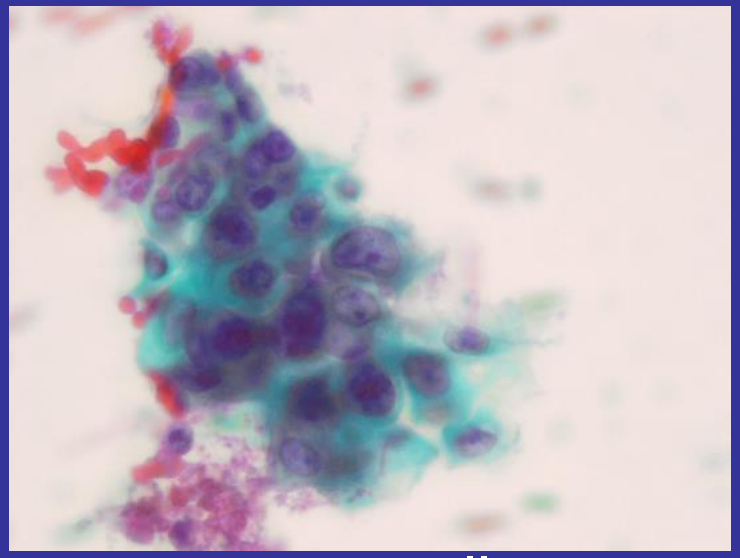






HE*40 Lymph node with antracosis and reactive adenitis





Large cell ca

Experience with CT-guided hook wire for localization of small pulmonary nodules prior to videothoracoscopic resection

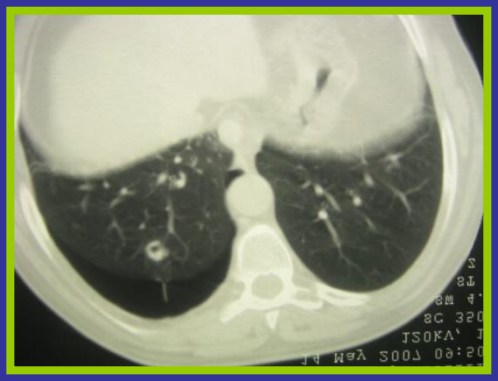
METHODS

Admission 1-2 hours prior surgery to the short-stay facility

- Transfer to the Radiology department to CT placement of the hook wire.
- Transfer to the OR
- SURGERY: VATS wedge resection + frozen section:

  - If (-) or M1: done (+/- LN sampling)

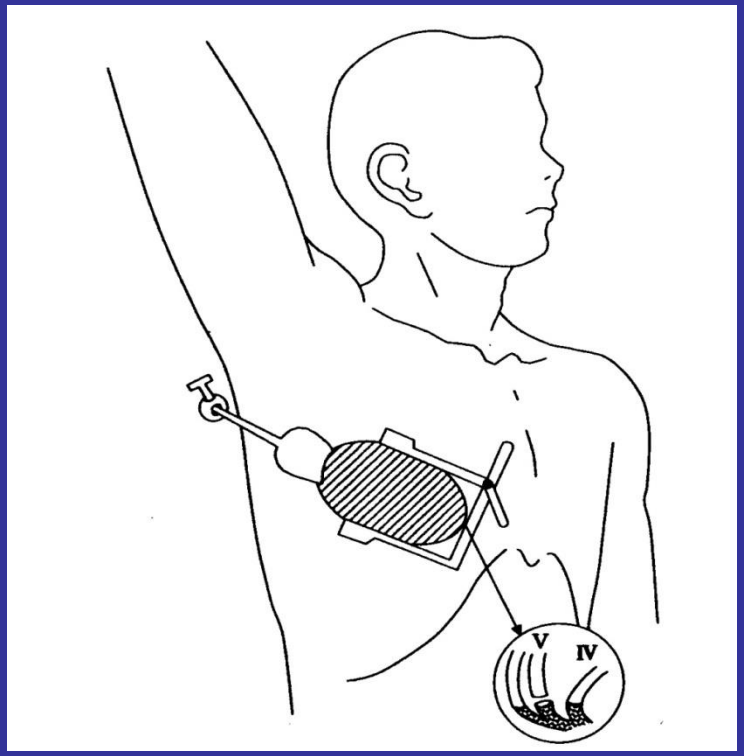
  - If lung ca: lobectomy if indicated



LOBECTOMY STILL THE STANDARD OF CARE IN THE SURGICAL TREATMENT OF NSCLC…

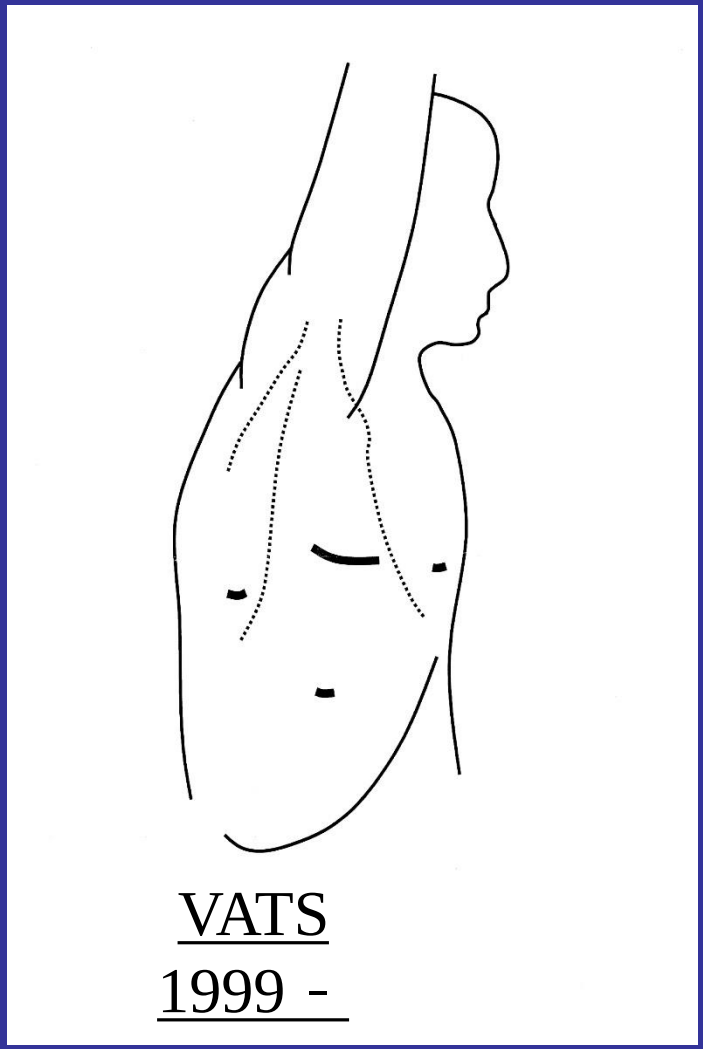
VATS vs Thoracotomy

Retrospective study for comparison between VATS and limited thoracotomy For clinical stage I NSCLC



Limited thoracotomy

1995 - 1998



VATS

1999 -

Nomori H, et al. Ann Thorac Surg, 2001

Numbers of resected lymph nodes In VATS and limited thoracotomy

Site	VATS	Limited thoracotomy	Difference
Right	20±8	18 ±5	p=0.23
Left	15±3	13±4	p=0.34

Nomori H, et al. Ann Thorac Surg, 2001

Patterns of recurrence and incidence of second primary tumors after lobectomy by means of video-assisted thoracoscopic surgery (VATS) versus thoracotomy for lung cancer

Raja M. Flores, MD,[a] Ugonna N. Ihekweazu, MD,[b] Nabil Rizk, MD,[b] Joseph Dycoco, BA,[b] Manjit S. Bains, MD,[b] Robert J. Downey, MD,[b] Prasad Adusumilli, MD,[b] David J. Finley, MD,[b] James Huang, MD,[b] Valerie W. Rusch, MD,[b] Inderpal Sarkaria, MD,[b] and Bernard Park, MD[b]

Objective: Reports have questioned the oncologic efficacy of video-assisted thoracoscopic surgery when compared with thoracotomy despite similar survival results. In response, we investigated the pattern of recurrent disease and the incidence of second primary tumors after lobectomy by means of video-assisted thoracoscopic surgery and thoracotomy.

Methods: All patients who underwent lobectomy for clinical stage IA lung cancer determined by means of computed tomographic and positron emission tomographic analysis were identified from a prospective database at a single institution. All patients were selected for video-assisted thoracoscopic surgery or thoracotomy by an individual surgeon. Patients' characteristics, perioperative results, recurrences, and second primary tumors were recorded. Variables were compared by using Student's t test, the Pearson χ^2 test, and Fisher's exact test. A logistic regression model was constructed to identify variables influencing the development of recurrent disease or metachronous tumors.

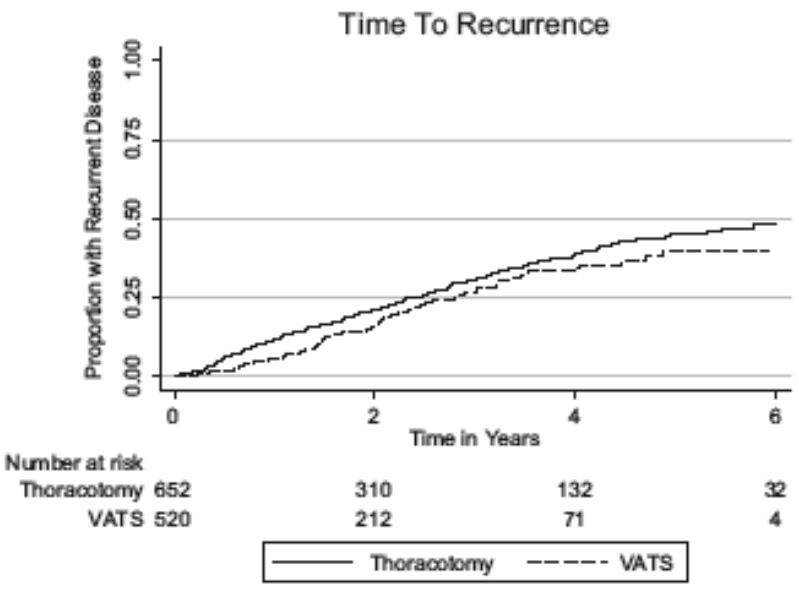
Results: From 2002 to 2009, 520 patients underwent lobectomy by means of video-assisted thoracoscopic surgery, and 652 underwent lobectomy by means of thoracotomy. Final pathological stage was similar in the video-assisted thoracoscopic surgery and thoracotomy groups. Logistic regression demonstrated a lower risk (odds ratio, 0.65; $P = .01$) of recurrent disease in patients undergoing video-assisted thoracoscopic surgery after adjusting for age, stage, sex, histology, tumor location, and synchronous primary tumors.

Conclusions: Recurrence rates for video-assisted thoracoscopic surgery appear to be at least equivalent to those for thoracotomy. This study supports lobectomy by means of video-assisted thoracoscopic surgery as an oncologically sound technique. (J Thorac Cardiovasc Surg 2011;141:59-64)

The oncologic efficacy of lobectomy by means of video-assisted thoracoscopic surgery (VATS) compared with thoracotomy for lung cancer remains controversial despite studies demonstrating similar survival results.[1,2] Those who advocate only thoracotomy believe VATS might leave unrecognized tumor within lymph node drainage areas and fissure staple lines and at the bronchial margins, can cause pleural tumor seeding from lung manipulation, and might fail to identify second primary cancers because of the lack of bimanual lung palpation.[3]

Large case series and comparative studies use survival as lobectomy.[1,2] However, survival results short of a prospective randomized controlled trial are subject to significant flaws in methodology and selection bias. Thoracic cooperative groups are not enthusiastic to perform prospective randomized controlled trials of sufficient power because of accrual concerns, lack of technique uniformity, and surgeon's bias. Although prolonged survival is the ultimate goal of most oncologic interventions, pattern of recurrence is another reasonable measure of oncologic efficacy. We undertook this study to investigate any differences in the patterns of recurrence after lobectomies performed by

The Journal of Thoracic and Cardiovascular Surgery • Volume 141, Number 1



VATS Lobectomy Has Better Perioperative Outcomes Than Open Lobectomy: CALGB 31001, an Ancillary Analysis of CALGB 140202 (Alliance)

Chukwumere E. Nwogu, MD, PhD, Jonathan D'Cunha, MD, PhD, Herbert Pang, PhD, Lin Gu, MS, Xiaofei Wang, PhD, William G. Richards, PhD, Linda J. Veit, MPH, Todd L. Demmy, MD, David J. Sugarbaker, MD, Leslie J. Kohman, MD, and Scott J. Swanson, MD, for the Alliance for Clinical Trials in Oncology

Roswell Park Cancer Institute, State University of New York at Buffalo, Buffalo, New York; University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; Alliance Statistics and Data Center, Duke University Medical Center, Durham, North Carolina; Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts; and State University of New York Upstate Medical Center, Syracuse, New York

(Ann Thorac Surg 2015;99:399–405)
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Methods. Five hundred nineteen patients whose tumors had been collected as part of CALGB 140202 (lung cancer tissue bank) were eligible. Propensity-scoring using age, race, sex, performance status, comorbidities, histology, tumor stage, and size as independent variables was used to create a 1:1 matched group of 175 pairs of patients.

Table 4. End Points: Matched Data

Variable	Open (n = 175)	VATS (n = 175)	Total (n = 350)	*p* Value
Length of hospital stay (days)				<0.0001
Mean (SD)	8.0 (6.0)	5.4 (4.7)	6.7 (5.5)	
Median (range)	6 (3.0–44.0)	4 (1.0–34.0)	5 (1.0–44.0)	
Number of patients with prolonged hospital stay (>14 days)	15 (8.6%)	11 (6.3%)	26 (7.5%)	<0.0001
Chest tube duration				<0.0001
Mean (SD)	5.0 (2.5)	3.3 (1.7)	4.1 (2.3)	
Median (range)	4 (1–19)	3 (1–11)	4 (1–19)	
Any surgical procedure complication				<0.0001
Yes	44 (25.1%)	26 (14.9%)	70 (20%)	
No	131 (74.9%)	149 (85.1%)	280 (80%)	
Discharge disposition				<0.0001
Home	158 (90.3%)	164 (93.7%)	322 (92%)	
Other	17 (9.7%)	11 (6.3%)	28 (8%)	

SD = standard deviation; VATS = video-assisted thoracoscopic surgery.

Results. The matched data on length of hospital stay, complications, and discharge dispositions significantly favored the video-assisted thoracoscopic surgery group. There was no statistically significant difference in survival between the two approaches.

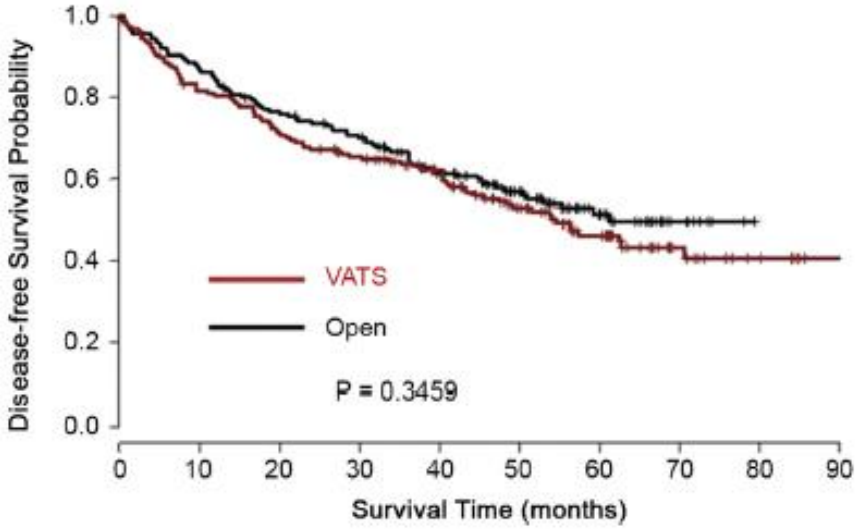


Fig 1. Kaplan-Meier plot of disease-free survival from matched data for open lobectomy (black line) versus video-assisted thoracoscopic surgery (VATS; red line).

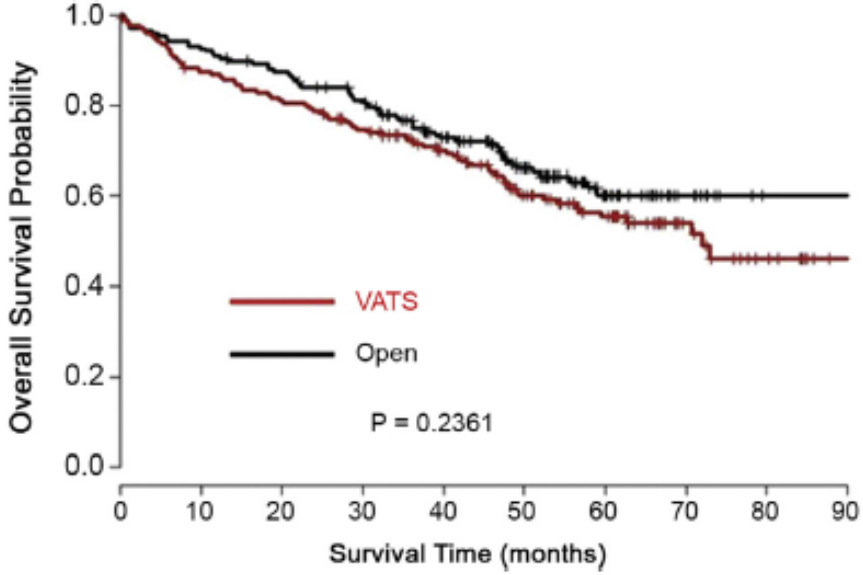


Fig 2. Kaplan-Meier plot of overall survival from matched data for open lobectomy (black line) versus video-assisted thoracoscopic surgery (VATS; red line).

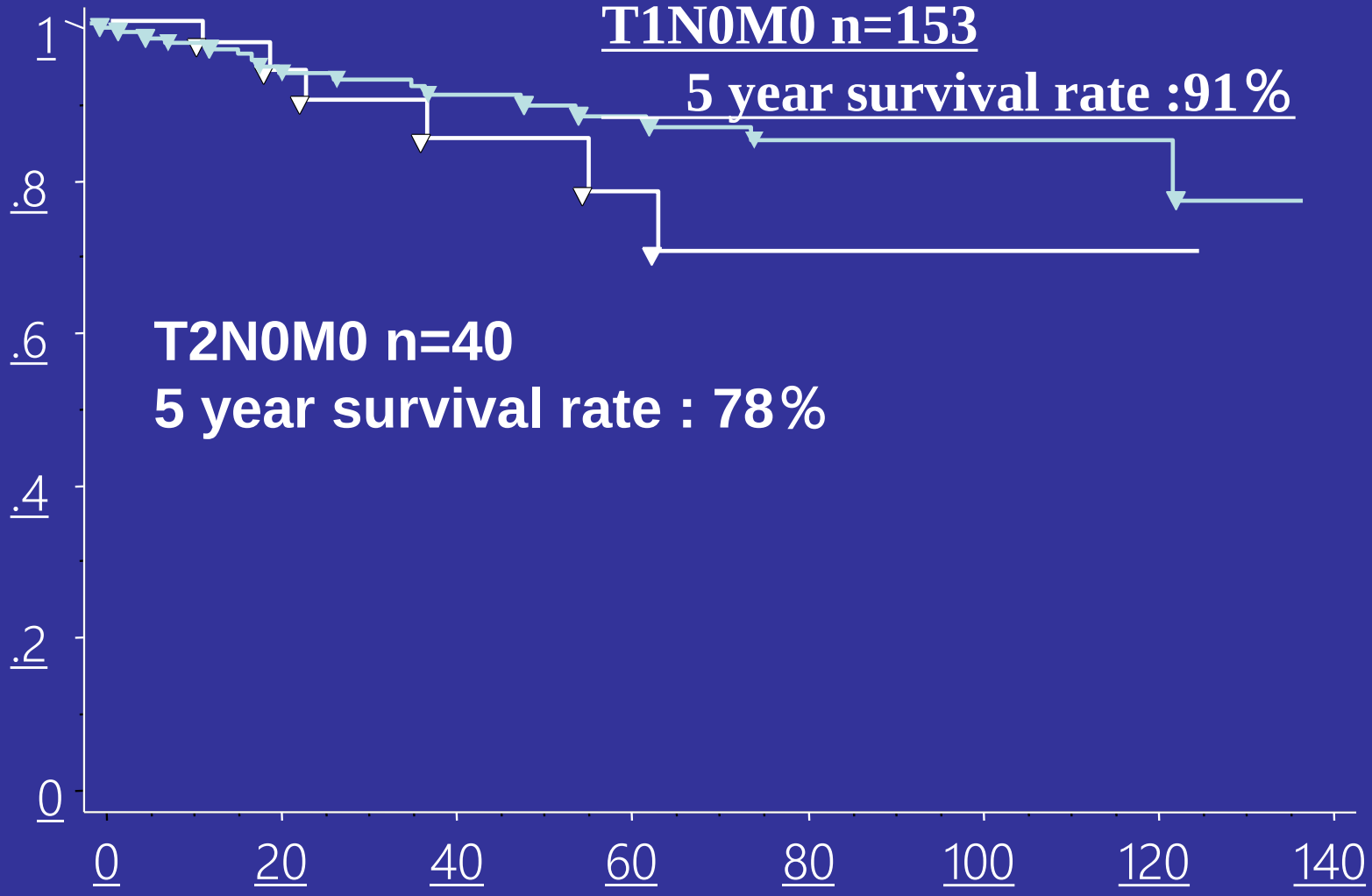
Conclusions. This multi-institutional study supports the assertion that thoracoscopic lobectomy results in shorter hospital length of stay, fewer perioperative complications, and greater likelihood of independent home discharge compared with open lobectomy for early-stage lung cancer. Survival was comparable between the two groups.

Thomas A. D'Amico, M.D.
Long-Term Outcomes of Thoracoscopic Lobectomy
Thorac Surg Clin 2008; 18:259-262

Table 1
Recent series of thoracoscopic lobectomy

Series	N	Operative (30-day) mortality	Survival stage I
Kaseda [14]	128	0.8%	94% (4 yr)
Sugi [15]	50	0	90% (5 yr, stage IA)
Solaini [16]	125	0%	90% (3 yr)
Walker [17]	158	1.8%	78% (5 yr)
Roviaro [18]	193	1%	64% (5 yr)
McKenna [6]	1,100	0.5%	77% (5 yr)
Onaitis [7]	500	1.2%	78% (4 yr)

Survival after VATS Lobectomy for pathological Stage 1 NSCLC 1999 - 2005 (n=193)



Ohtsuka T, Nomori H, et al. CHEST, 2004

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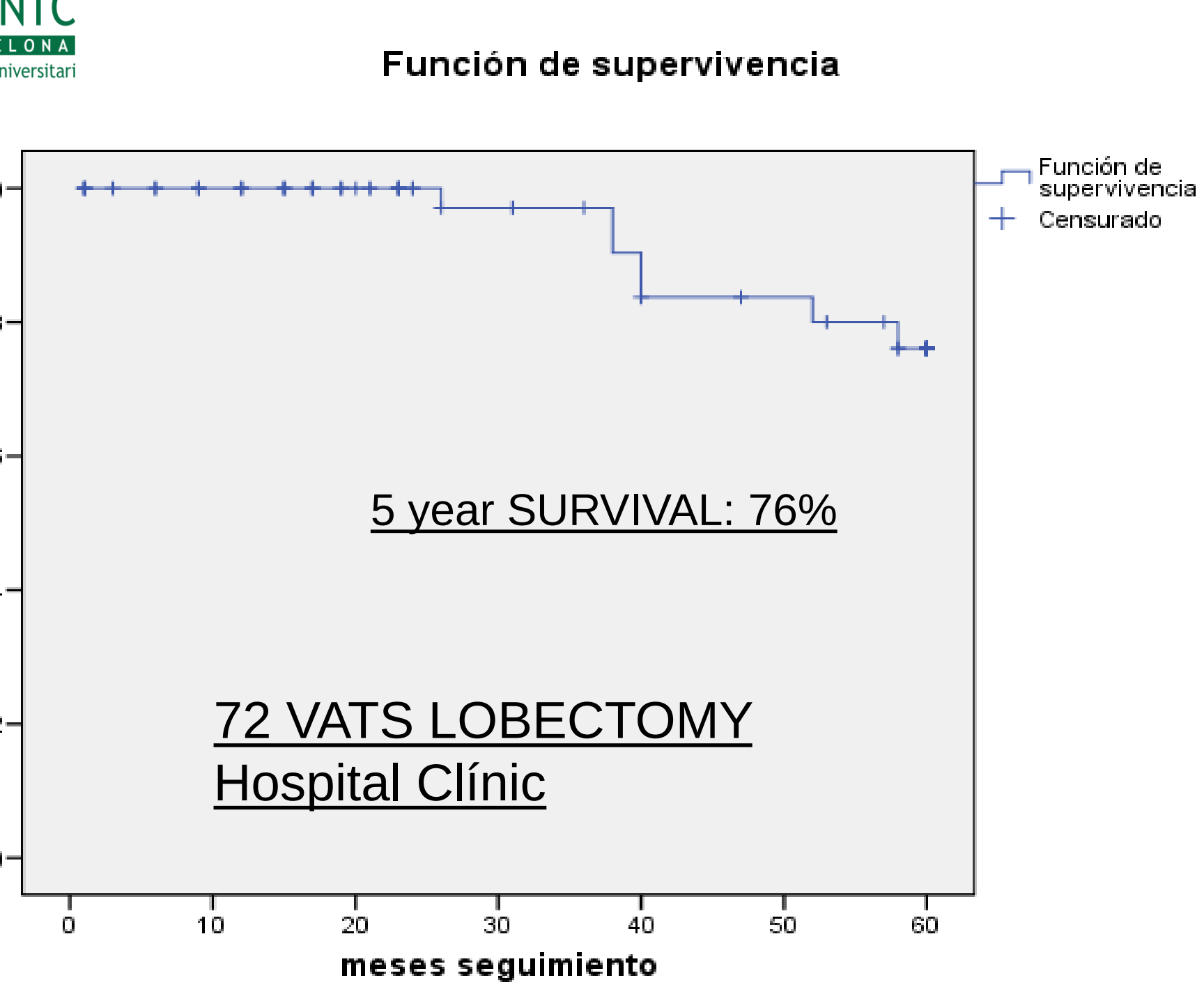

Función de supervivencia
Función de supervivencia
Censurado
5 year SURVIVAL: 76%
72 VATS LOBECTOMY
Hospital Clínic
0
10
20
30
40
50
60
meses seguimiento

VATS Lobectomy in the USA

- 1992: First VATS lobectomy
- 2003: < 5% lobectomies by VATS
- 2007: 20% lobs by VATS (STS database)
- 2010: 6% lobs by VATS (Non Federal Hosp)

VATS Lobectomy in UK

- 3879 lobectomies performed in 40 hospitals
- VATS lobectomy only in 6 hospitals, two of them accumulating more than 60%
- Only 3% of lobectomies were performed by VATS

Société Française
de Chirurgie Thoracique
et Cardio-Vasculaire

Bases de données
Chirurgie Thoracique
irurgie Cardio-vascul

Société Française de Chirurgie Thoracique et Cardio-vasculaire - French Society of Thoracic and Cardiovascular Surgery -

CINQUIEME RAPPORT : JUIN 2008

Interventions

Pneumonectomie	515	10%
Lobec_Totalisation	49	1%
Bilobectomie	192	4%
Lobectomie	2546	48%
Segmentectomie	186	4%
Exe_partielle	1081	20%
Biopsie	273	5%
Exploratrice	99	2%
Réduction	25	0.3%
Bullectomie	282	5%
Séquestration	5	0.1%
Suture	23	0.5%

Voies d'abord

Thoracotomie	4424	84%
Thoracoscopie	622	12%
TVA	235	4%
Sternotomie	6	0.1%
Cervico_thoraco	7	0.1%

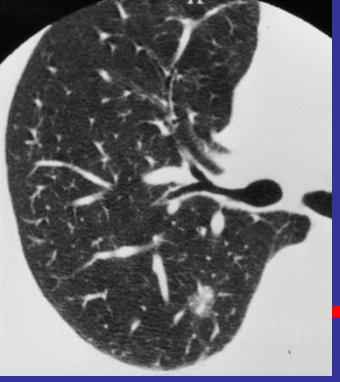
4% VATS LOBECTOMIES IN FRANCE -2008

Pathologie

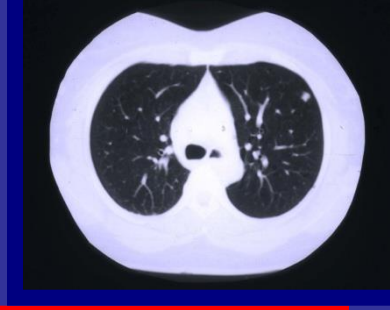
Complication	77	1%
Congénitale	36	0.5%
Dégénérative	458	9%
Infectieuse/Inflam	498	9%
Traumatique	25	0.5%
Tu Bénigne	180	3%
Tu Maligne I	3311	63%
Métastase	705	13%

Complications 37%

Décès per/post op	103	1.9%
Bullage > 7 jours	313	5.9%
Atélectasie (Fibro)	262	4.9%
Pneumopathies	237	4.4%
Tbles du rythme	168	3.1%
Caillotage post op	51	0.1%
Pyothorax	41	0.1%



Emerging concept "Small lung cancer"

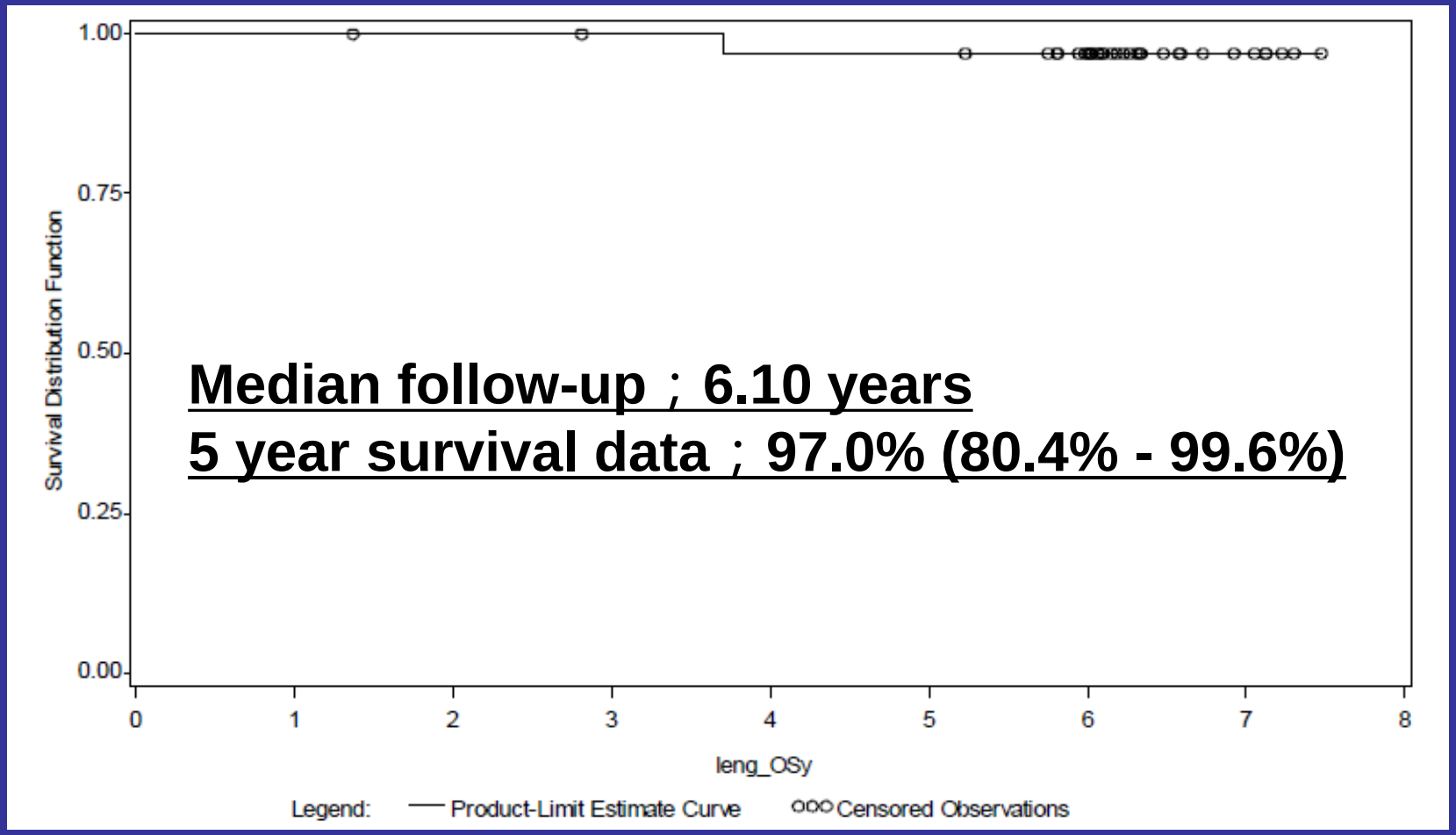


- The routine use of computed tomography (CT) in clinical practice and in some screening programmes increased the number of small peripheral lung cancers, both in the form of solid or partially solid lesions, and ground glass opacities (GGOs) for which a lobectomy seems excessive.

- Watanabe et al. reported that the rate of lung cancer 2 cm in diameter or smaller raised from 4.3% when CT was not used to 11% after introducing CT in their clinical practice, and to 17% after introducing high resolution CT (HRCT);

JCOG0201; OS of 289 cases

with Size; 2cm or less, Cons/T ratio; 25% or less



Median follow-up ; 6.10 years

5 year survival data ; 97.0% (80.4% - 99.6%)

Preoperative diagnosis; positive : unknown = 91 : 198

Mode of Operation in 2007

Japanese Thoracic Surgery Registry

	cases	30-day mortality	By VATS	1994
Lung cancer	**26,092**	**0.4**	**12,079**	**13,344**
pneumonectomy	**580↓ (2.2%)**	**2.8**	**33**	**703 (5.3%)**
lobectomy	**19,046↓ (73.0%)**	**0.4**	**8,348**	**10892 (81.6%)**
segmental	**2,041↑ (7.8%)**	**0.1**	**1,129**	**674 (5.1%)**
wedge	**3,279↑ (12.6%)**	**0.2**	**2,402**	**952 (7.1%)**

Reports of Japanese Thoracic Surgery Registry
by The Japanese Association for Thoracic Surgery, 2009

Sublobar resection in NSCLC

- Why not to follow a similar evolution than other cancer surgeries...?

- Anatomic Segmentectomy: resection of one or more pulmonary segments with the corresponding bronchovascular elements.

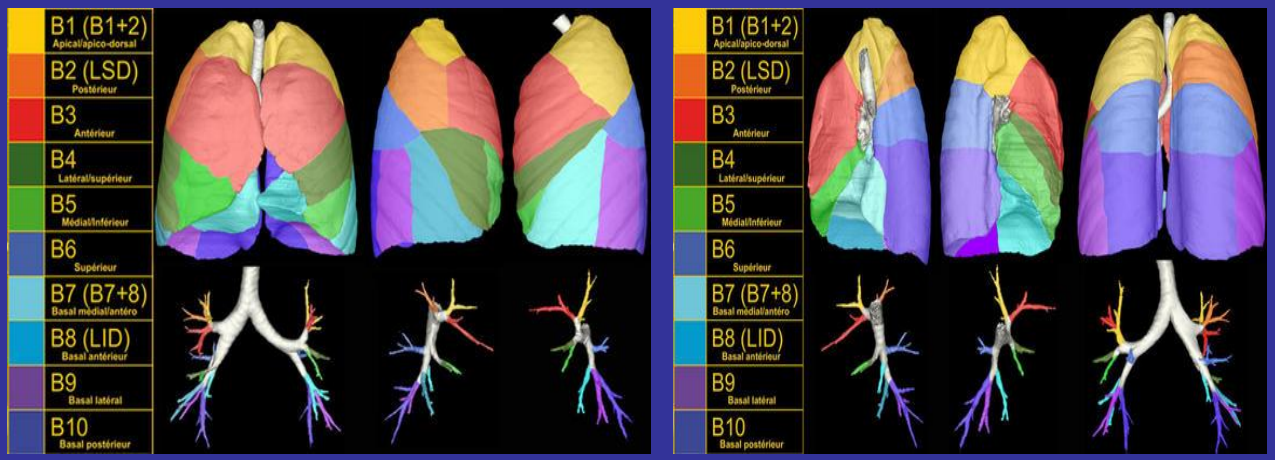
- Non-Anatomic Segmentectomy or atipical segmentectomy or Wedge Resection: without following the bronchovascular elements.

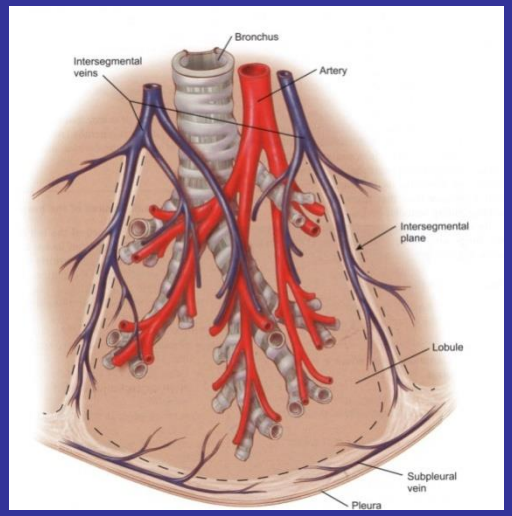
Background - Segmentectomy

- Jensik et al. (1973) – Anatomic segmentectomy for lung ca.

- Yoshikawa et al. (2002) – Extended segmentectomy – 82% 5-year survival for tumors less than 2 cm

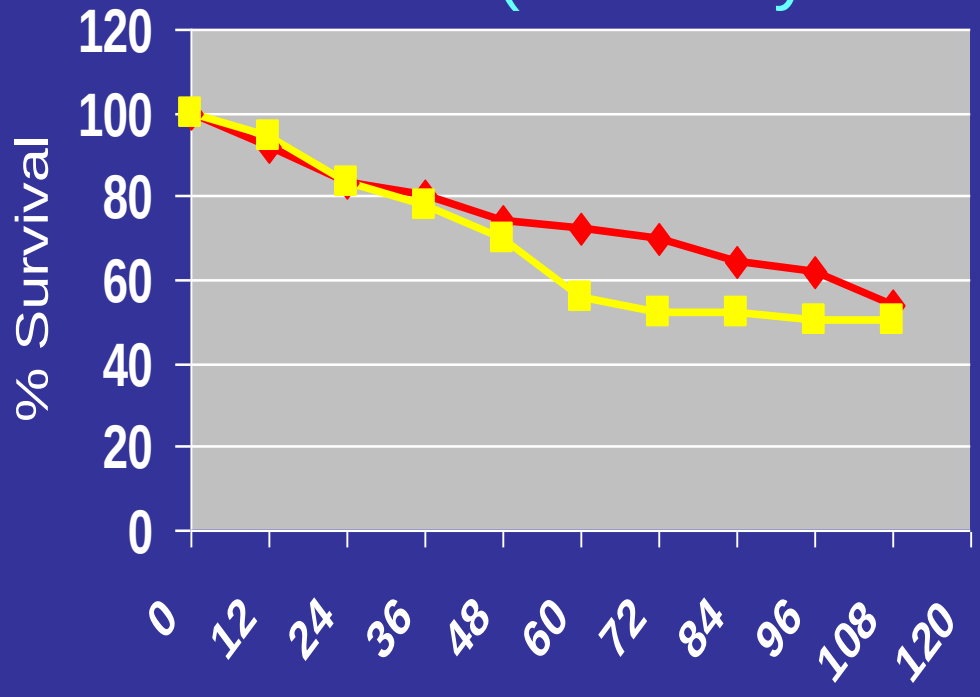
- Okada et al. (2005) – Equivalent 5 yr disease-free survival (≤ 2 cm) – 96.7 vs. 92.4%





Lobectomy vs Limited Resection for T1NO NSCLC. A Lung Cancer Study Group (1995)

Time to death (from any cause) by treatment



logrank p=0.088 (one-tailed)

* Limited difference in overall survival but…
* threefold increase in recurrence rate for sublobar resection (17.2% vs. 6.4%),

Ginsberg and Rubinstein
Ann Thorac Surg 1995

Lobectomy vs. Limited Resection for T1N0 NSCLC: A Lung Cancer Study Group

Ann Thorac Surg 1995; 60: 615-23

Criticism:

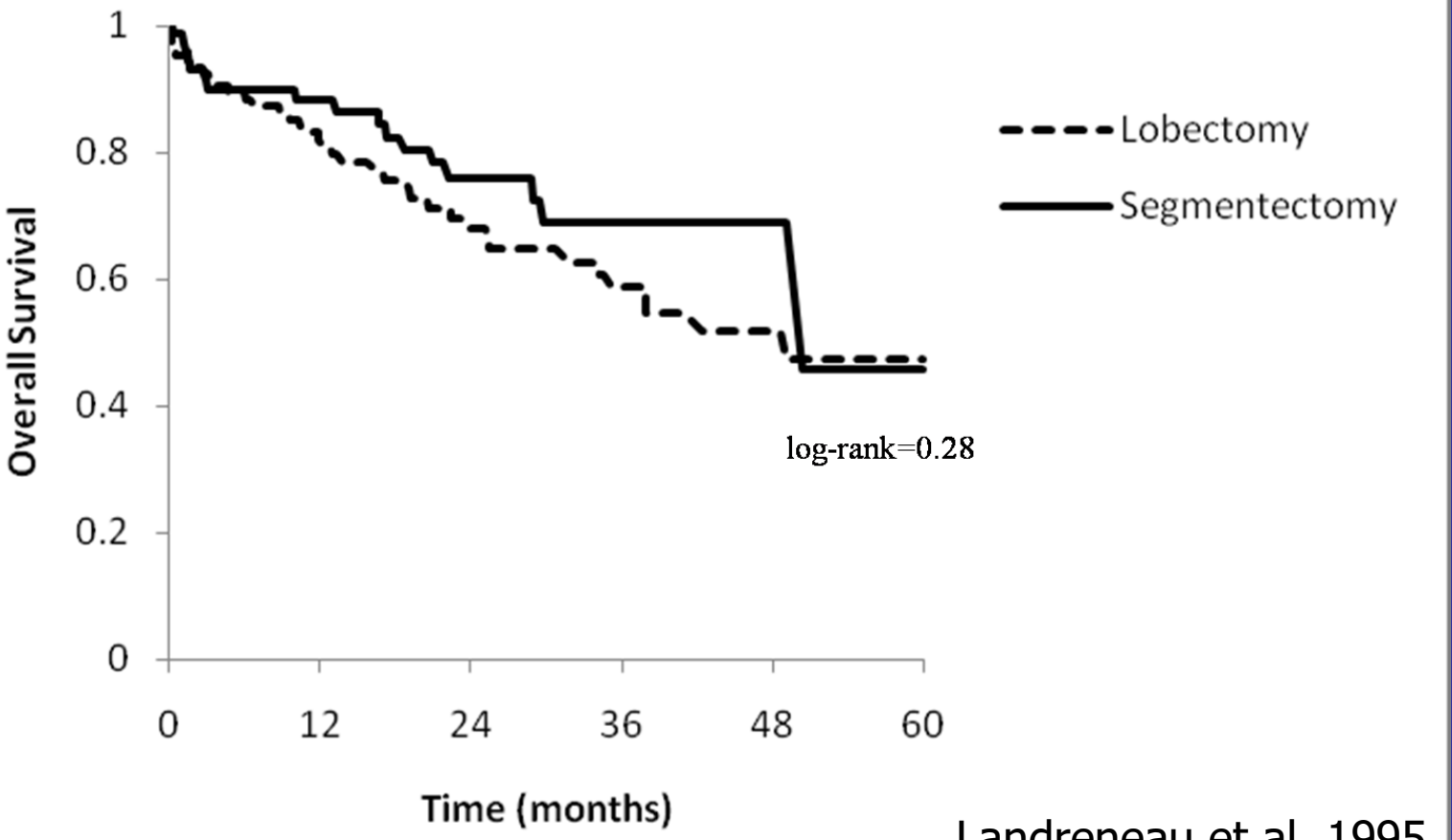
Study itself:

- Slow accrual: 276 pts. in almost 7 years
- Survival difference: borderline significance
- Enough statistical power?;
  - Superiority design was suitable?
- No available data regarding lung function

From present view point:

- Old study
- Earlier, smaller cases, not included, because of new diagnostic devices

Overall Survival – UPMC series



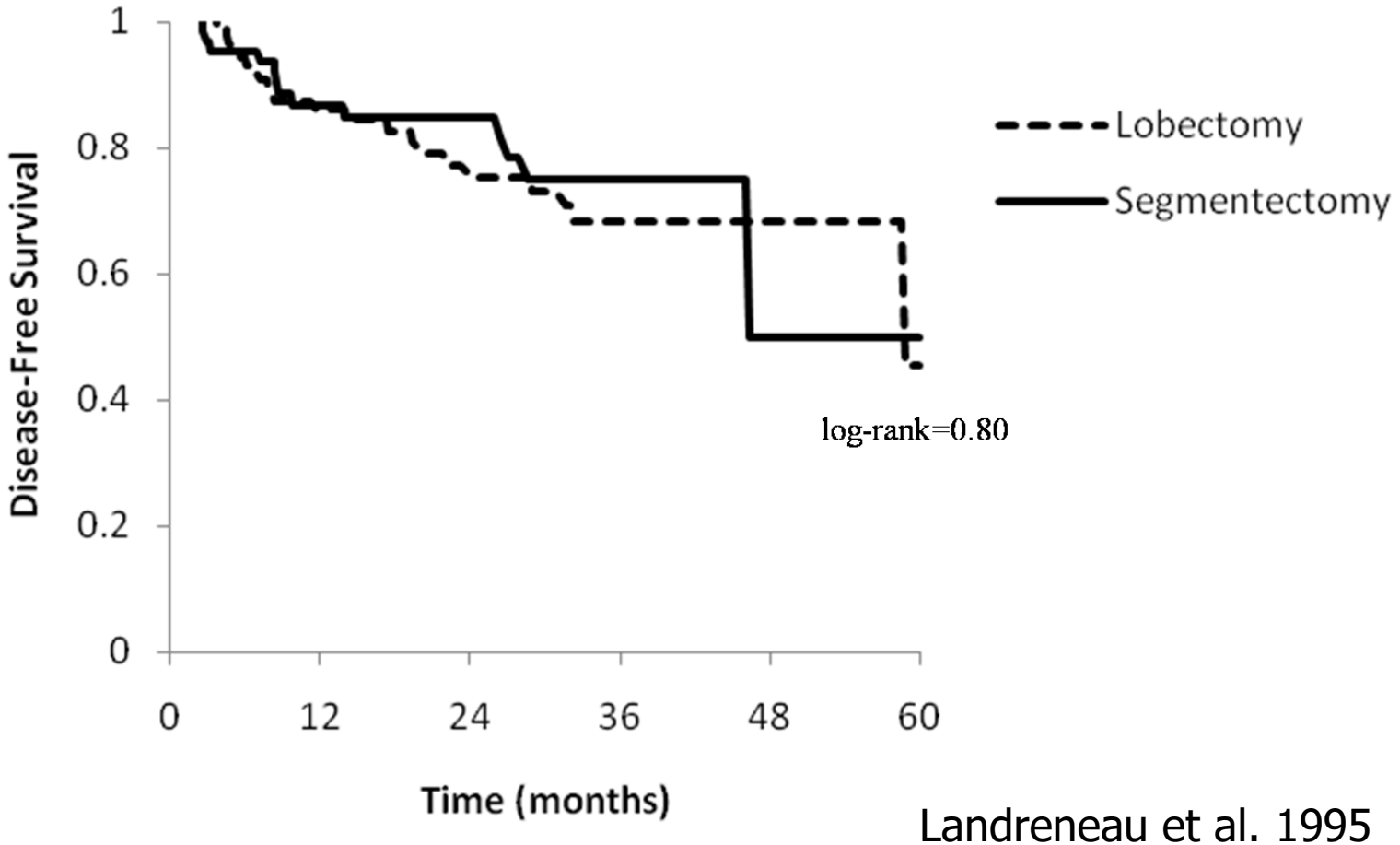
Landreneau et al. 1995

2-, 3-, and 5-Year Overall Survival:

Segmentectomy: 79%, 69%, 46%

Lobectomy: 68%, 59%, 47%

Recurrence-Free Survival - UPMC



Landreneau et al. 1995

Recurrence-Free Survival Stage-for-Stage:
IA- p=0.15 IB- p=0.16

Conclusions UPMC

- Anatomic segmentectomy can be performed safely with acceptable morbidity (18.3%) and mortality (0.9%)

- Anatomic segmentectomy is associated with similar recurrence rates compared with lobectomy, with no impact on disease-free survival.

- Segmentectomy may be associated with decreased blood loss and operative times compared with lobectomy.

- Margin: Tumor ratios <1 are associated with an increased rate of recurrence..

Landreneau et al. 1995

Anatomic Segmentectomy

Favorable Criteria for Anatomic Segmentectomy ***UPMC***

- Small Tumors: < 2 cm in diameter
- Peripheral location (outer 1/3)
- Pathologic Margin > 1 cm (Margin/Tumor ratio>1)
- Age >75
- Marginal pulmonary function
- Ground glass opacities

Landrenaeau et al. 1995

GENERAL THORACIC SURGERY:
The Annals of Thoracic Surgery CME Program is located online at http://cme.ctsnetjournals.org. To take the CME activity related to this article, you must have either an STS member or an individual non-member subscription to the journal.

Anatomic Segmentectomy for the Solitary Pulmonary Nodule and Early-Stage Lung Cancer

Matthew J. Schuchert, MD, Ghulam Abbas, MD, Omar Awais, MD, Arjun Pennathur, MD, Katie S. Nason, MD, MPH, David O. Wilson, MD, Jill M. Siegfried, PhD, James D. Luketich, MD, and Rodney J. Landreneau, MD

Division of Thoracic and Foregut Surgery, Department of Cardiothoracic Surgery, and Division of Pulmonary Medicine, University of Pittsburgh Medical Center; Department of Pharmacology and Chemical Biology, University of Pittsburgh, Pittsburgh, Pennsylvania

(Ann Thorac Surg 2012;93:1780–7)

Among patients with pathologic stage IA lung cancer, there was no difference in recurrence rates (14.5% vs 13.9%) or 5-year freedom from recurrence estimates (78% in each group, $p = 0.738$) when comparing segmentectomy and lobectomy.

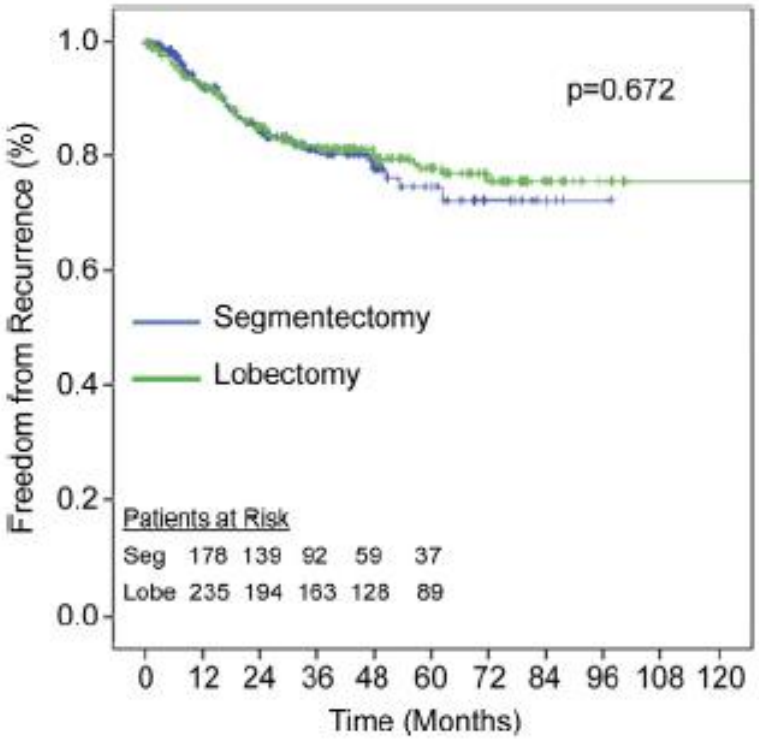


Fig 1. Freedom from recurrence after anatomic segmentectomy (blue) and lobectomy (green) after resection for solitary pulmonary lesions ultimately found to represent non-small cell lung cancer.

Table 4. Recurrence and Survival Patterns; Stage IA Non-Small Cell Lung Cancer

Variable	Segmentectomy (n = 325)	Lobectomy (n = 432)	Significance (*p* Value)
NED	84%	83%	0.77
Overall recurrence	47 (14.5%)	60 (13.9%)	0.83
Locoregional	17 (5.2%)	23 (5.3%)	1.00
Distant	30 (9.2%)	37 (8.6%)	0.80
Freedom from recurrence (5-year)	77%	79%	0.67

NED = no evidence of disease.

Segmentectomy for selected cT1N0M0 non–small cell lung cancer: A prospective study at a single institute

Hiroaki Nomori, PhD,[a] Takeshi Mori, PhD,[b] Koei Ikeda, PhD,[b] Kentaro Yoshimoto, PhD,[b] Kenichi Iyama, PhD,[c] and Makoto Suzuki, PhD[b]

J Thorac Cardiovasc Surg 2012; 144: 87-93.

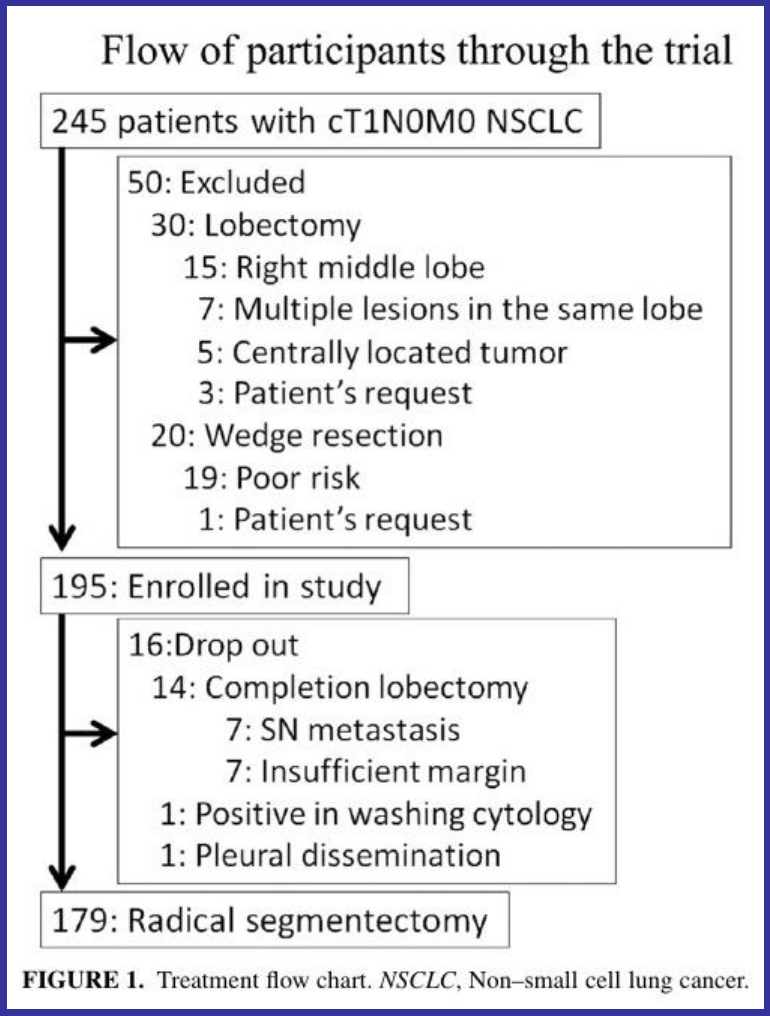


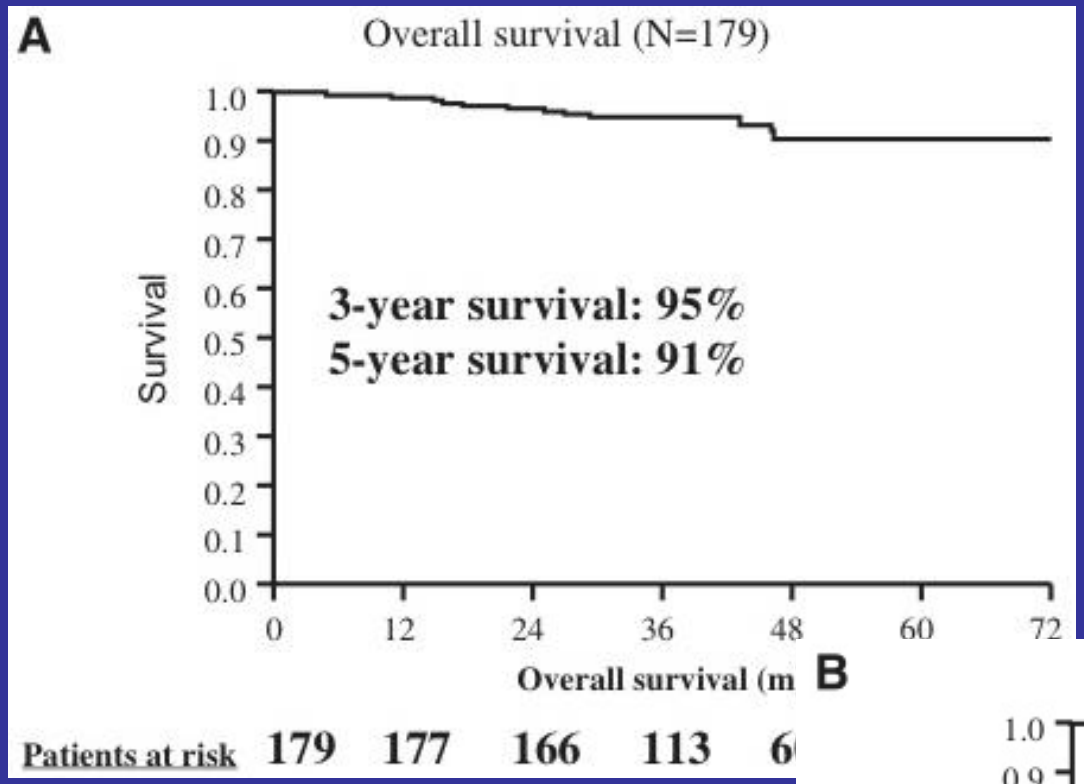
FIGURE 1. Treatment flow chart. *NSCLC*, Non–small cell lung cancer.

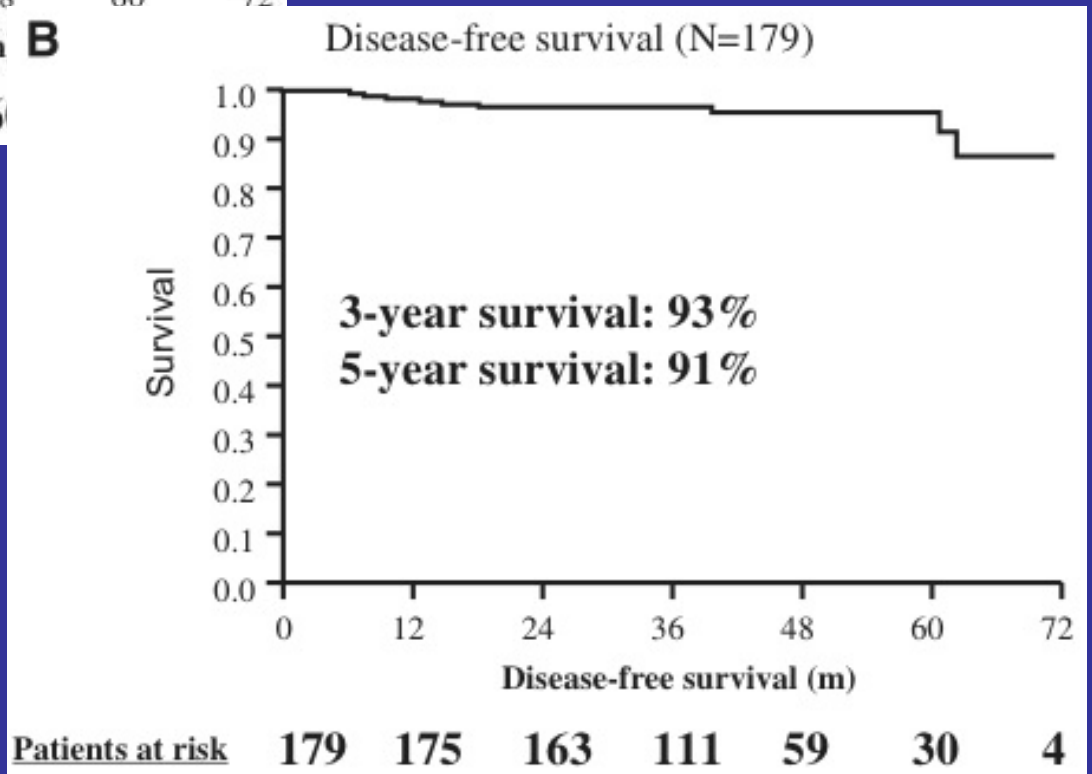
TABLE 4. Characteristics of tumors treated by segmentectomy

Characteristic	Tumor size (cm) ≤2	Tumor size (cm) 2.1–3	Total
Mean tumor size (cm)	1.4 ± 0.4	2.5 ± 0.3	1.7 ± 0.6
Tumor location			
Right upper lobe	43	14	57
Right lower lobe	35	9	44
Left upper lobe	40	17	57
Left lower lobe	16	5	21
Right upper and lower lobes	1	0	1
Right upper and left lower lobes	1	0	1
Resected segments (n)			
Mean	1.6 ± 0.6	1.5 ± 0.6	1.5 ± 0.6
Range	1–4	1–4	1–4
Histologic type			
Adenocarcinoma	51	25	76
Bronchioloalveolar carcinoma	77*	8	85
Squamous cell carcinoma	6	10	16
Adenosquamous carcinoma	2	2	4
Pathologic stage			
T1N0M0	131	39	170
T2N0M0	5	6	11
Total (n)	136	45	181

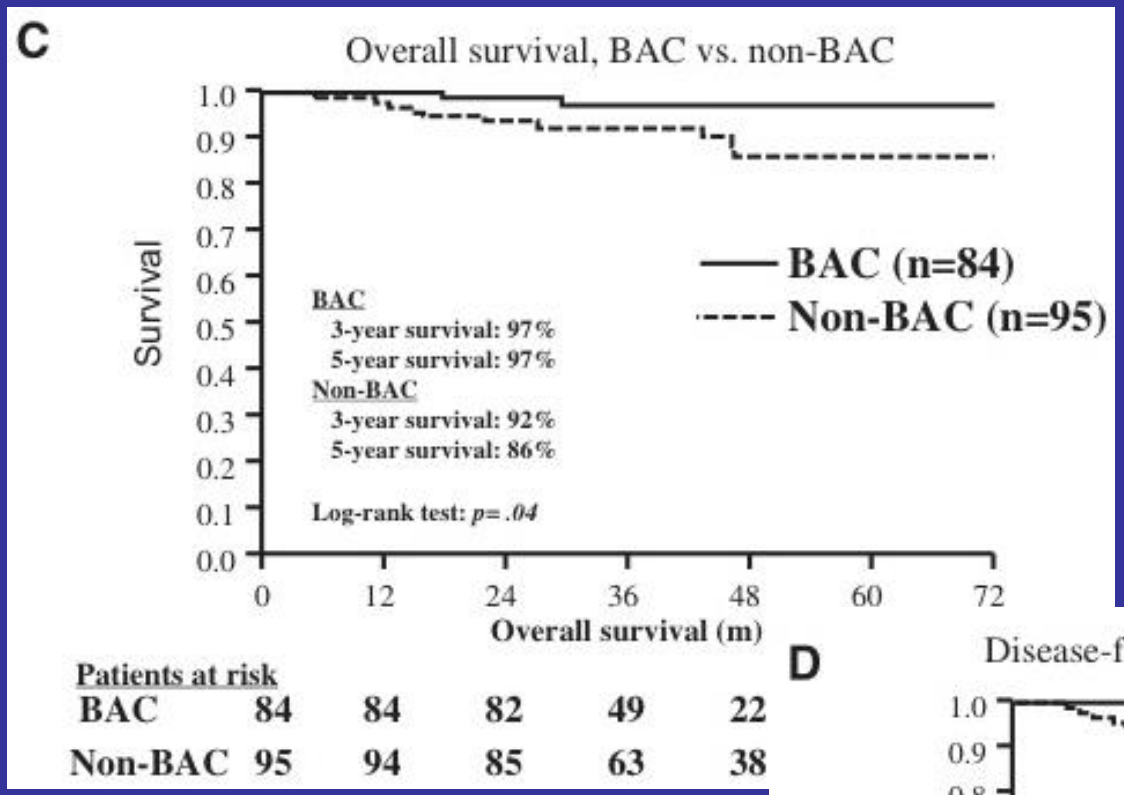
*Significant difference between the 2 groups ($P < .001$).

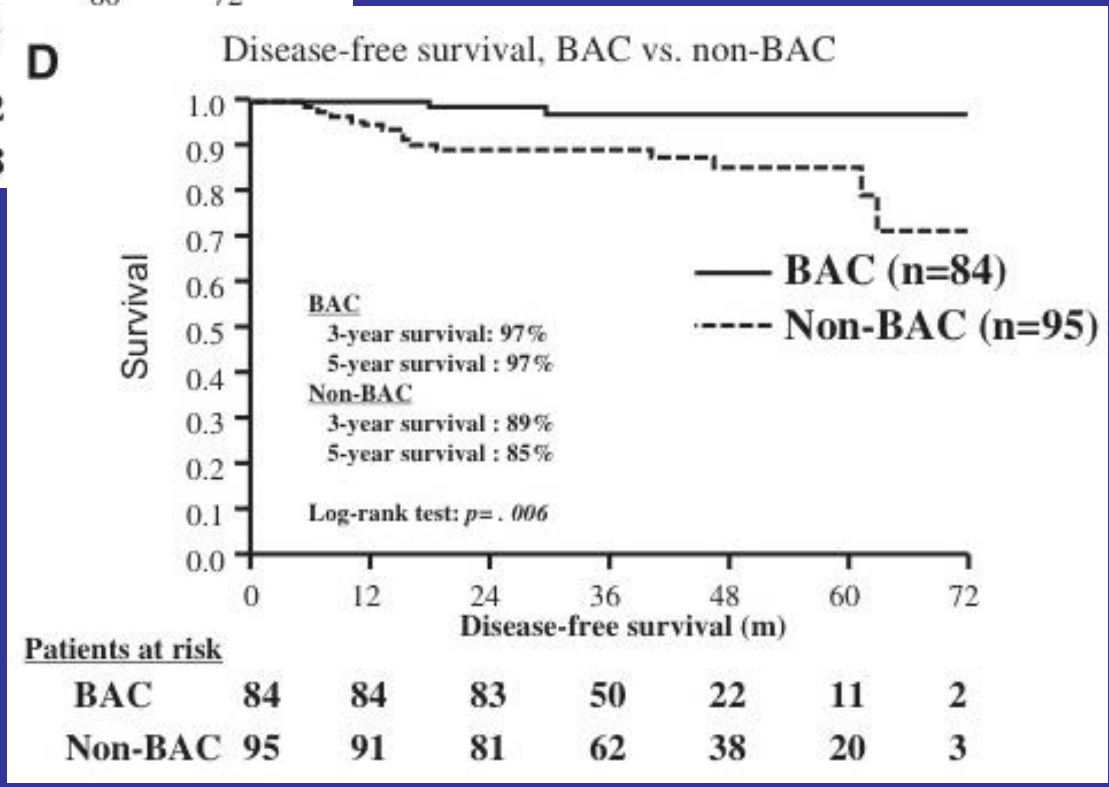
Results


A
Overall survival (N=179)
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
3-year survival: 95%
5-year survival: 91%
0
12
24
36
48
60
72
Overall survival (m
B
Patients at risk
179
177
166
113
6

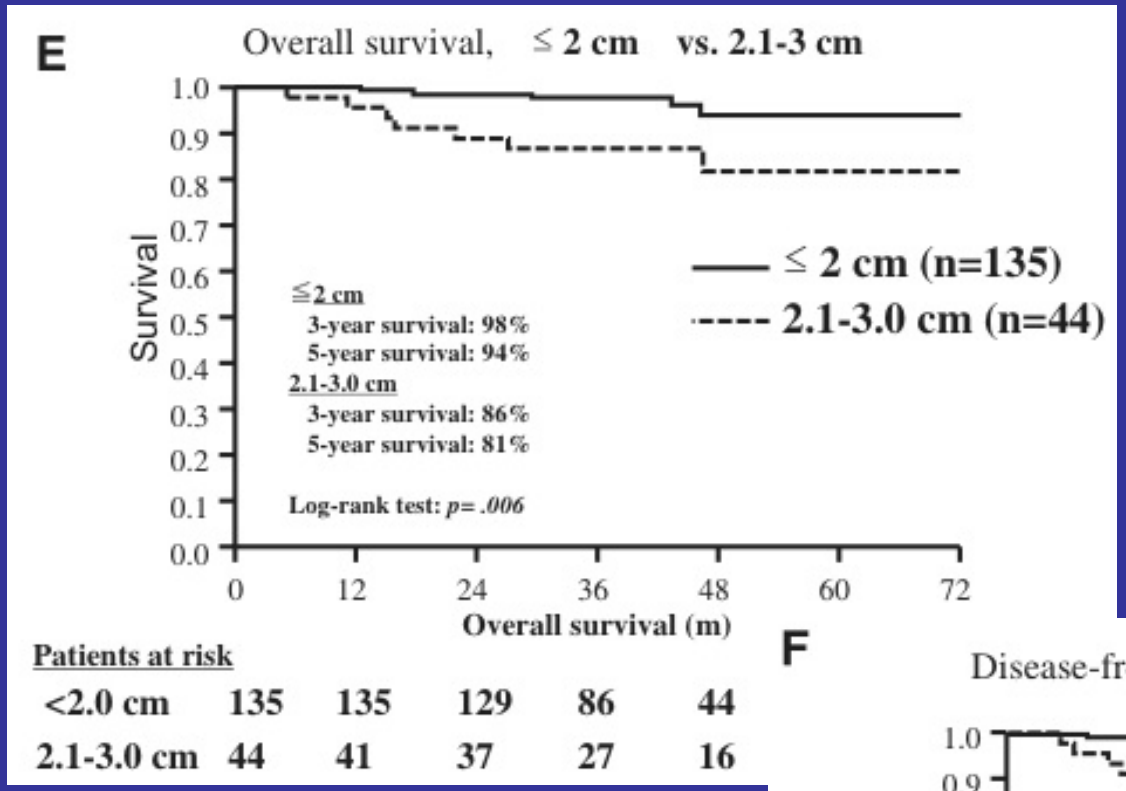

Disease-free survival (N=179)
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
3-year survival: 93%
5-year survival: 91%
0
12
24
36
48
60
72
Disease-free survival (m)
Patients at risk
179
175
163
111
59
30
4

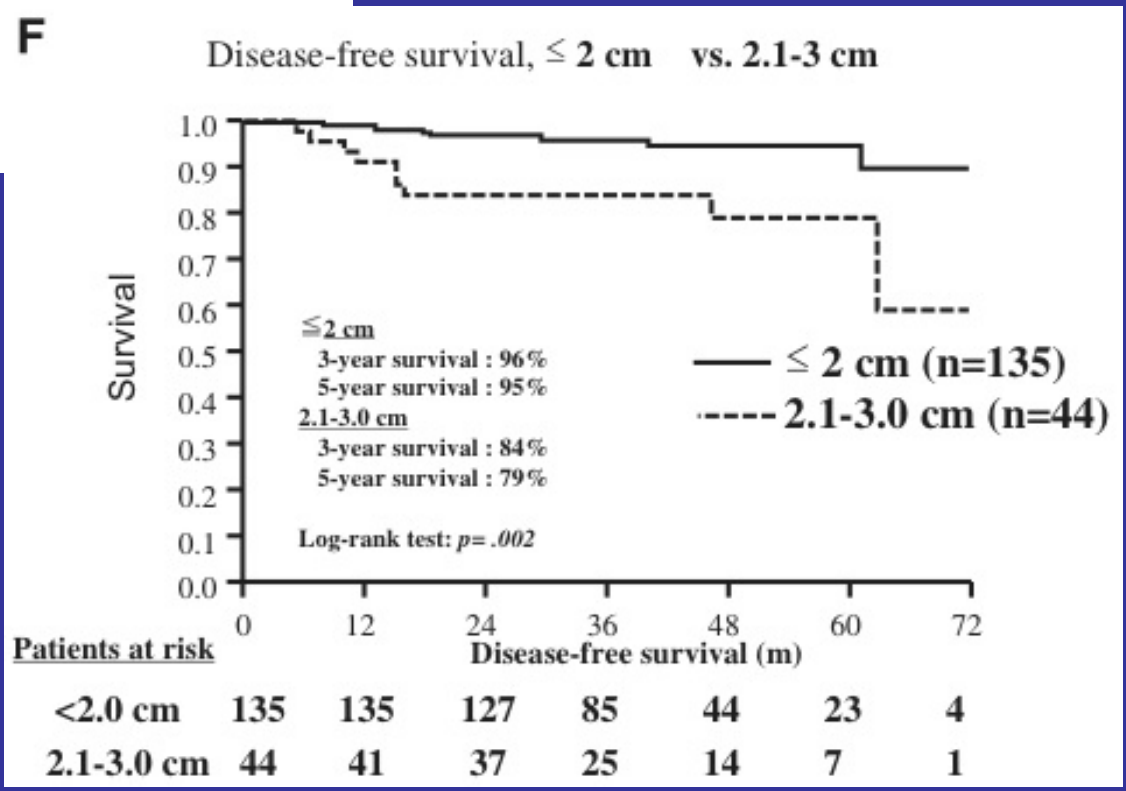
Results


C
Overall survival, BAC vs. non-BAC
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
BAC (n=84)
Non-BAC (n=95)
BAC
3-year survival: 97%
5-year survival: 97%
Non-BAC
3-year survival: 92%
5-year survival: 86%
Log-rank test: p= .04
0
12
24
36
48
60
72
Overall survival (m)
Patients at risk
BAC 84 84 82 49 22
Non-BAC 95 94 85 63 38

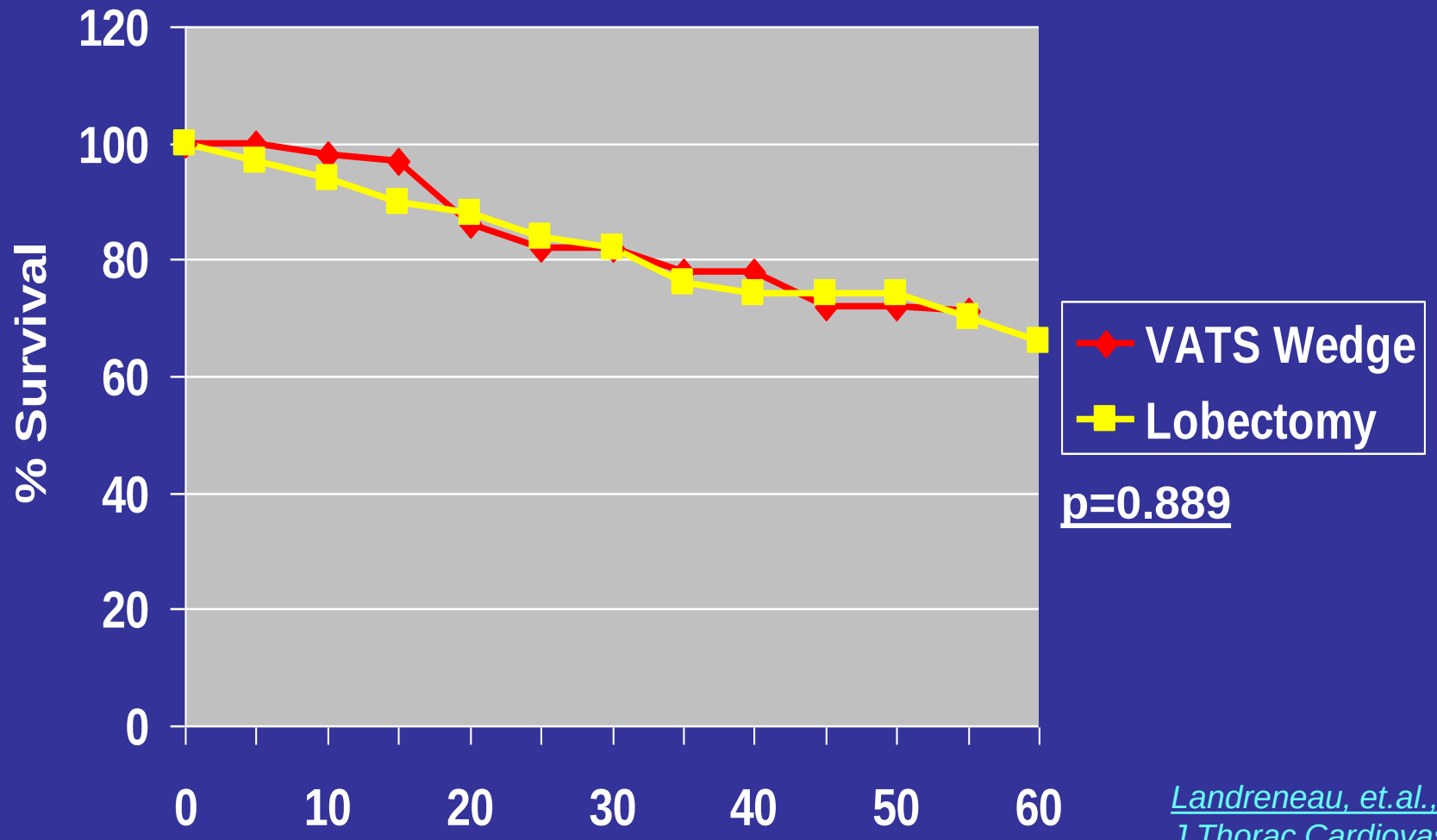

D
Disease-free survival, BAC vs. non-BAC
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
BAC (n=84)
Non-BAC (n=95)
BAC
3-year survival: 97%
5-year survival : 97%
Non-BAC
3-year survival : 89%
5-year survival : 85%
Log-rank test: p= . 006
0
12
24
36
48
60
72
Disease-free survival (m)
Patients at risk
BAC 84 84 83 50 22 11 2
Non-BAC 95 91 81 62 38 20 3

Results


E
Overall survival, ≤ 2 cm vs. 2.1-3 cm
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
12
24
36
48
60
72
Overall survival (m)
≤ 2 cm (n=135)
2.1-3.0 cm (n=44)
≤2 cm
3-year survival: 98%
5-year survival: 94%
2.1-3.0 cm
3-year survival: 86%
5-year survival: 81%
Log-rank test: p= .006
Patients at risk
<2.0 cm 135 135 129 86 44
2.1-3.0 cm 44 41 37 27 16


F
Disease-free survival, ≤ 2 cm vs. 2.1-3 cm
Survival
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
12
24
36
48
60
72
Disease-free survival (m)
≤ 2 cm (n=135)
2.1-3.0 cm (n=44)
≤2 cm
3-year survival : 96%
5-year survival : 95%
2.1-3.0 cm
3-year survival : 84%
5-year survival : 79%
Log-rank test: p= .002
Patients at risk
<2.0 cm 135 135 127 85 44 23 4
2.1-3.0 cm 44 41 37 25 14 7 1

VATS Wedge vs Lobectomy for Stage I NSCLC



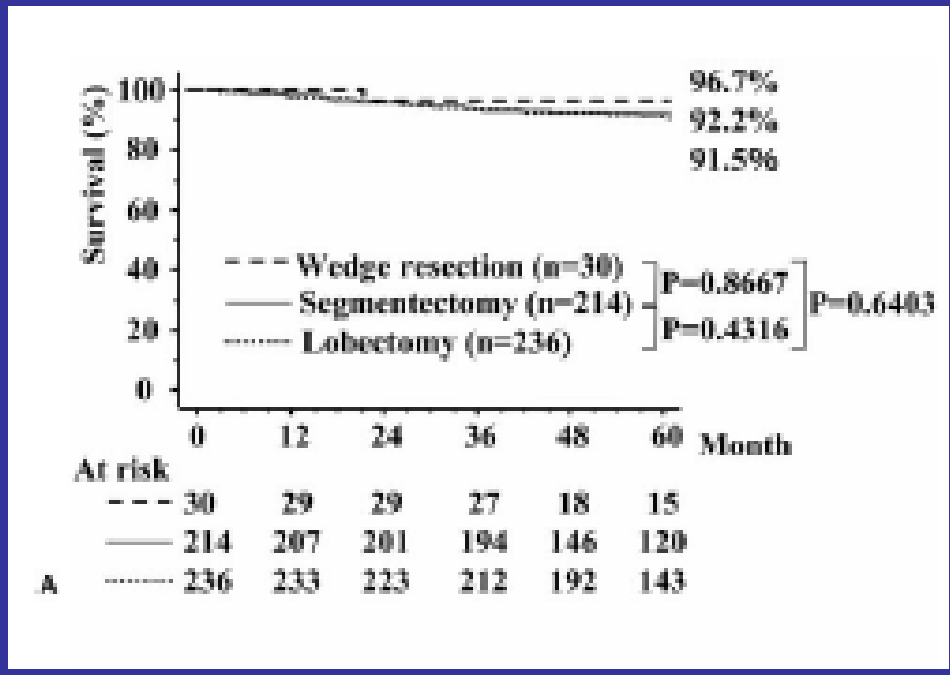
Landreneau, et.al.,
J Thorac Cardiovasc Surg
1997;113:691-700

Radical sublobar resection (including Wedge) for small-sized NSCLC: a multicenter study Okada et al JTCS 2006

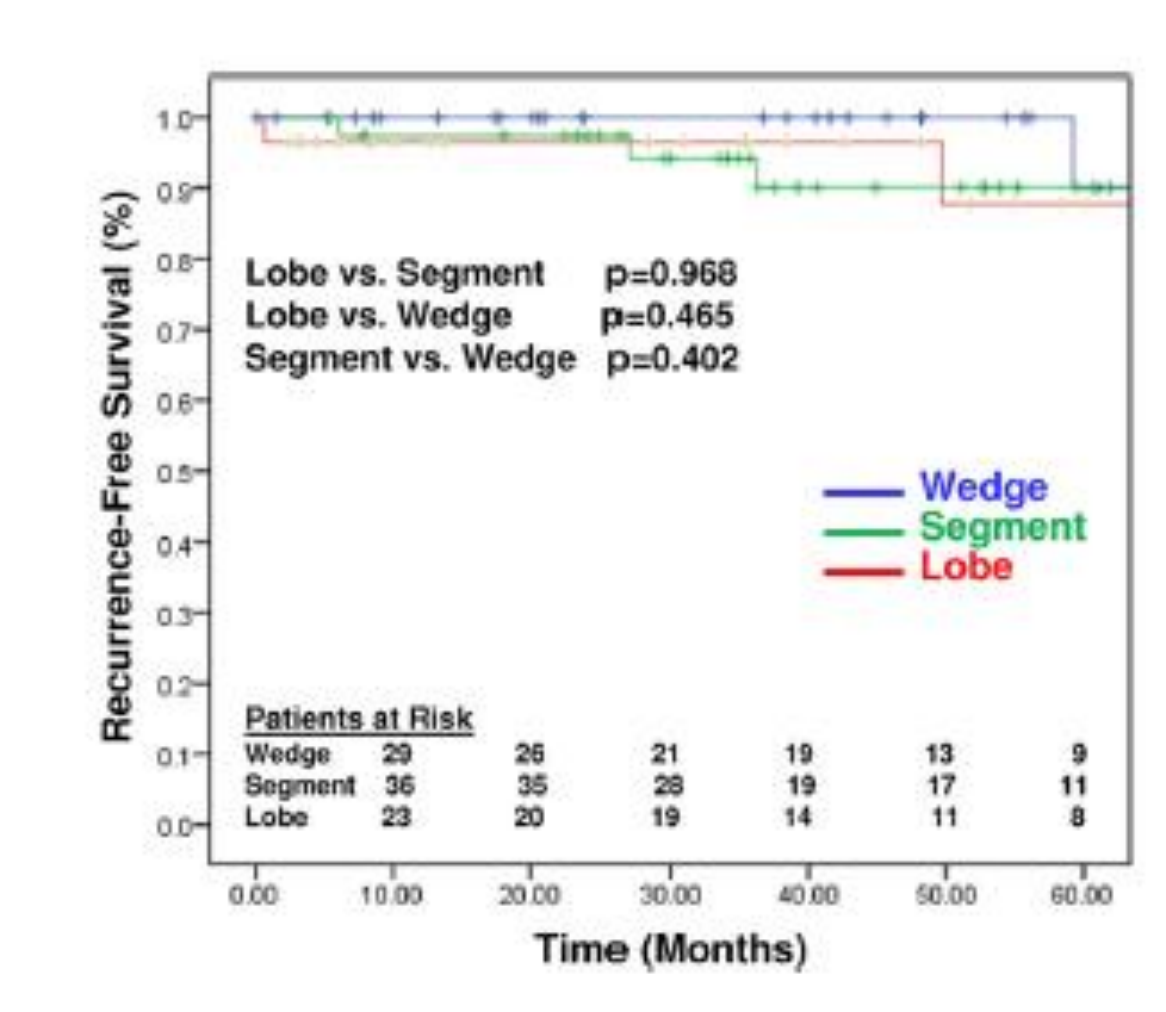
TABLE 2. Postoperative findings of the patients

Characteristic	Sublobar resection group (n = 305)	Lobar resection group (n = 262)	*P* value
Curability			0.2577
Complete resection	303 (99.3%)	257 (98.1%)	
Incomplete resection	2 (0.7%)	5 (1.9%)	
Pathological stage			0.7819
IA	266 (87.2%)	217 (82.8%)	
IB	7 (2.3%)	10 (3.8%)	
IIA	10 (3.3%)	12 (4.6%)	
IIB	2 (0.7%)	2 (0.8%)	
IIIA	14 (4.6%)	15 (5.7%)	
IIIB	6 (2.0%)	6 (2.3%)	
Postoperative complications	20 (6.6%)	19 (7.3%)	0.7429
Recurrence	43 (14.1%)	45 (17.2%)	0.3524
Distant metastasis	28 (9.2%)	27 (10.3%)	
Local recurrence	15 (4.9%)	18 (6.9%)	

Fisher's exact test was used to compare categoric variables.



Recurrence-Free Survival after surgery for <1cm lung cancer



•Schuchert et al. Oncologic outcomes after surgical resection of subcentimeter NSLC. Ann Thorac Surg. Epub 2011

What is a standard procedure for cT1a N0 M0 NSCLC?

Sublobar resection for lung cancer is still a controversial issue. Specially, in T1aN0 disease, this is a critical clinical question.

Prospective clinical trial may resolve this issue.

Actually, Both US and Japan have ongoing prospective phase III trials in order to establish the standard procedure for small NSCLC... But results will last some more years…!

CALGB140503-Intergroup; Phase III Randomized Trial between Lobectomy and Sublobar Resection for Small-sized carcinoma

Non-inferiority design

PI: Altorki N

Peripheral carcinoma, <=2 cm Negative hilar node

→ Randomize

Lobectomy

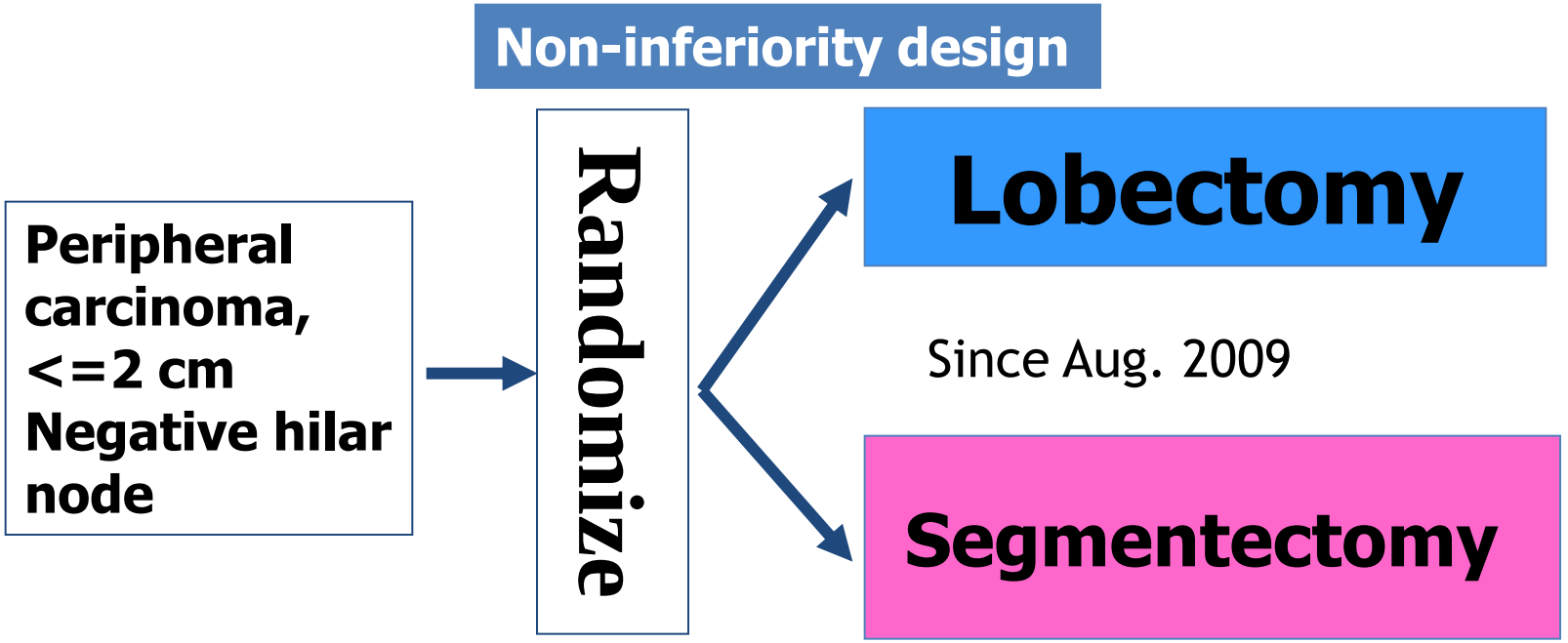
Since Sep. 2007

Sublobar resection (segmentectomy/ wedge)

Stratified factors;
Tumor size,
Histology (Sq vs. non-sq)?,
Smoking status

Endpoints:
Primary: DFS
Secondary: OS, pulmonary function
Sample size: 908

JCOG0802/WJOG4607L; Phase III Randomized Trial between Lobectomy and Limited Resection for Part-solid GGO – Solid T1a disease



Stratified factors;
Institute, Gender,
Histology (Ad vs, Non-ad),
Solid or non-solid

Endpoints:
Primary: OS
Secondary: pulmonary function
Sample size: 1,100/485

PI: Asamura H. (JCOG) & Okada M (WJOG)

Take home messages

Surgical Treatment of Early Stage Lung Cancer

- As for the surgical intervention; American and Japanese studies are ongoing.

At the moment,

- More than 20mm mixed GG adenocarcinoma (C/T rate=50% or more) ; lobectomy.

- 20mm or less mixed GGor less); sublobar resection may adenocarcinoma (C/T rate=50% be considerable.

- Surgical procedures depend on location, size, CT findings (density, C/T rate) and/or frozen pathological findings.

7º Congreso de la Sociedad Española de Cirugía Torácica, 2016

CARACTERISTICAS DIFERENCIALES DE LA CIRUGIA DEL CARCINOMA BRONCOGENICO EN LA MUJER Y SUS COMPLICACIONES POSTOPERATORIAS.

Antonio Cueto Ladrón De Guevara (1), Florencio Quero Valenzuela (1), Clara I Bayarri (1), Carlos Izquierdo (2), Jose Miguel Izquierdo (3), Juan Jose Fibla (4), Laureano Molins (2)

(1) HOSPITAL UNIVERSITARIO DE GRANADA,
(2) HOSPITAL CLINIC DE BARCELONA,
(3) HOSPITAL DE DONOSTIA,
(4) HOSPITAL SAGRADO CORAZON DE BARCELONA

Objetivo: Analizar la incidencia actual del carcinoma broncogenico operado en la mujer en España y las características diferenciales de sus complicaciones postoperatorias y sus posibles factores causales.

Método: Estudio prospectivo de cohortes multicéntrico del grupo de complicaciones postoperatorias de la SECT.

Entre el 1 JUNIO 2012 y el 30 NOV 2014: 3307 casos de centros participantes.

Estudiamos proporción de mujeres intervenidas, edad, tipos histológicos, factor tabaquismo, comorbilidad asociada, estadio TNM, tipo de abordaje quirurgico, tipo de resección pulmonar, complicaciones postoperatorias, estancia postoperatoria y mortalidad perioperatoria.

Análisis estadístico se ha usado: chi cuadrado y t de student.

Resultados I: 741 mujeres de 3307 casos totales (22’4%)

Edad media 61’96 años vs 66’40 en el varón (p<0.05)

Tipos histológicos:
519 Adenoca (70’4%) vs 1.233 (46’18%) en varón (p<0.001)
114 Epidermoide (15’38%) vs 1.099 (42’82%) (p<0.0001)

Tabaquismo: 260 Nunca han fumado (35’08%) frente a 5’30% en varones p<0.0001. Si fumadoras 201 (27’12%). Número paquetes/año 36.6 vs a 52.9 en varón (p<0.0001)

Comorbilidad asociada menor que en varón (p<0.05): Angor, Infarto de miocardio, Diabetes y EPOC.

Estadio TNM: 301 IA. 149 IB. 185 IIA. 63 IIB. 99 IIIA. 10 IIIB. 18 IV. Sin diferencias significativas con el varón.

Resultados II

Abordaje quirúrgico: (NS)
VATS: 254 (34’27%) vs 779 (30’39%) en varones.
Toracotomia: 487 (65’72%) vs 1.754 (68’35%) en varones

Tipo de resección:
Neumonectomias: 38 (5’12%) vs 278 (10,83%) en varones, p<0.001.

Gravedad de las complicaciones:
En menor grado que en varones. P<0.001.

Estancia postoperatoria media:
6.3 días en la mujer vs 7.7días en el varón (p<0.01)

Mortalidad operatoria:
2 c. (0’27%) frente a 64c (2’49%) en varón, p<0.001.

Conclusiones:

- La cirugía del CB en la mujer se ha incrementado en las ultimas 2 décadas.

- La edad es menor que la del varón.

- Adenocarcinoma es el tipo histológico mas prevalente.

- En las fumadoras, el numero de paquetes/año es menor.

- La comorbilidad asociada es inferior en la mujer, especialmente la angina de pecho, infarto de miocardio, EPOC y diabetes.

- De las técnicas de resección pulmonar, es menor la neumonectomia.

- La estancia postoperatoria es menor.

- La mortalidad perioperatoria es significativamente inferior, posiblemente condicionada por la menor incidencia de neumonectomia, de comorbilidad asociada, y a la menor gravedad de las complicaciones postoperatorias.

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Hospital Universitari
idcsalud
Hospital Universitari Sagrat Cor
Muchas gracias por vuestra atención!!!