Controversial issues on N2 positive stage IIIa NSCLC

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김 은 영

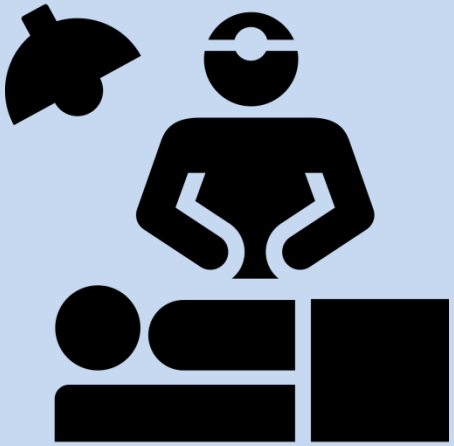
stage IIIa NSCLC with N2+

- ✓ Locally advanced stage III non-small-cell lung cancer is the most advanced stage at which cure can be achieved, but more than 60% of patients eventually die from their disease.

stage	5-year survival rate*
IA	49 %
IB	45 %
IIA	30 %
IIB	31 %
IIIA	**14 %**
IIIB	5 %
IV	1 %

*American Cancer Society, 2016

Two standard treatment options in stage IIIa NSCLC with N2+

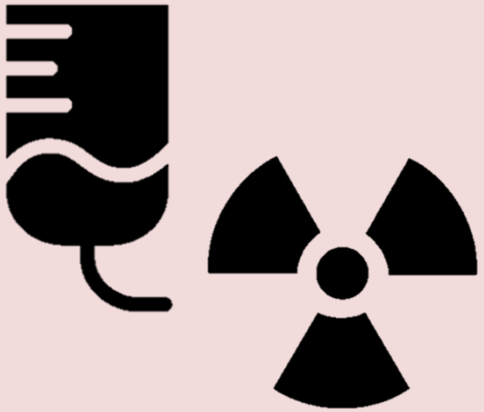


Operation

Preop. ChemoTx + Operation

OR

Preop. Chemoradiation + Operation



Definitive chemoradiation therapy

The crucial questions in the management of stage IIIa NSCLC with N2+

- ✓ invasive mediastinal staging techniques, using EBUS-TBNA ± EUS or mediastinoscopy

- ✓ The Presence of N2 + LN substantially increases the likelihood of N3 + LN,
  → pathologic evaluation of subcarinal station and contralatelal LNs.

Martins et al. JNCCN 10.5 (2012): 599-613.

The crucial questions in the management of stage IIIa NSCLC with N2+

- ✓ patient selection for surgery after induction therapy, and methods for pathologic restaging before surgery
- ✓ The role of pneumonectomy after induction therapy
- ✓ the choice of chemotherapeutic agents in the induction and definitive therapy settings
- ✓ the dose and technique of radiation therapy
- ✓ treatment of patients with poor performance status

Martins et al. JNCCN 10.5 (2012): 599-613.

Table 2. Anatomic Stage and Prognostic Groups

Occult Carcinoma	TX	N0	M0
Stage 0	Tis	N0	M0
Stage IA	T1a	N0	M0
	T1b	N0	M0
Stage IB	T2a	N0	M0
Stage IIA	T2b	N0	M0

Stage IIIA	T1a	N2	M0
	T1b	N2	M0
	T2a	N2	M0
	T2b	N2	M0
	T3	N1	M0
	T3	N2	M0
	T4	N0	M0
	T4	N1	M0

Stage IIIA

- wide, heterogeneous group of tumors, ranging from small primary tumors with bulky mediastinal lymph nodes (T1,N2) to large primary tumors with adjacent tissue invasion but without lymphadenopathy (T4,N0/N1)
- patients with N2 disease can have microscopic involvement, only detected at surgery, or bulky multistation involvement identified on a CT scan.
- Outcomes would be expected to differ significantly between these groups.

Proposals for the Revision of the N Descriptors in the Forthcoming 8th Edition of the TNM Classification for Lung Cancer

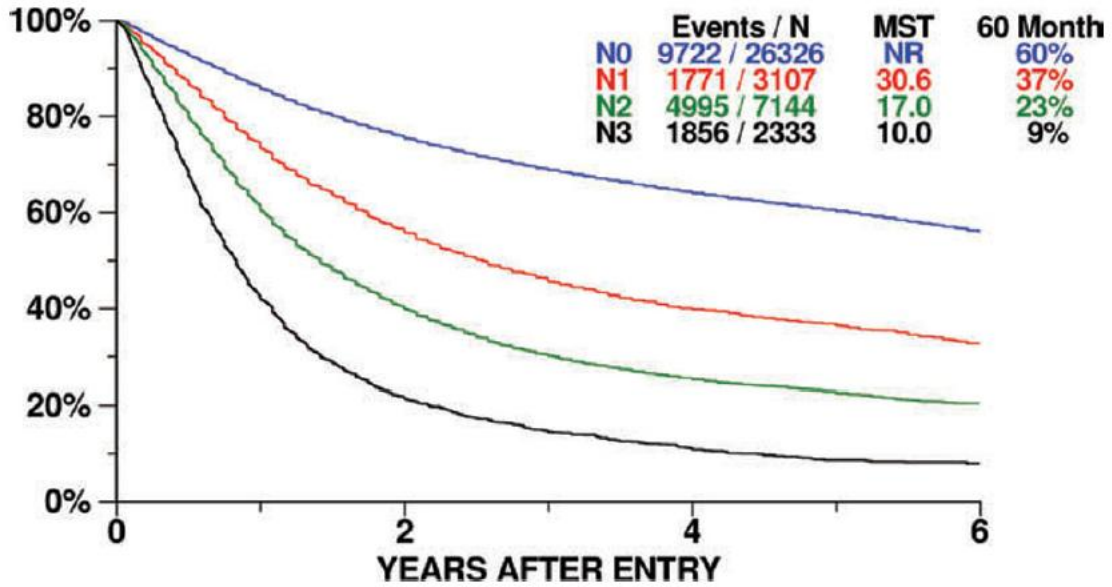


FIGURE 1. Survival curves for cN0, cN1, cN2, and cN3, T-any M0 tumors. The differences of survival between neighboring categories are all statistically significant (*p* values: between cN0 and cN1, $p < 0.0001$; between cN1 and cN2, $p < 0.0001$; between cN2 and cN3, $p < 0.0001$).

Asamura et al. JTO 10.12 (2015): 1675-1684.

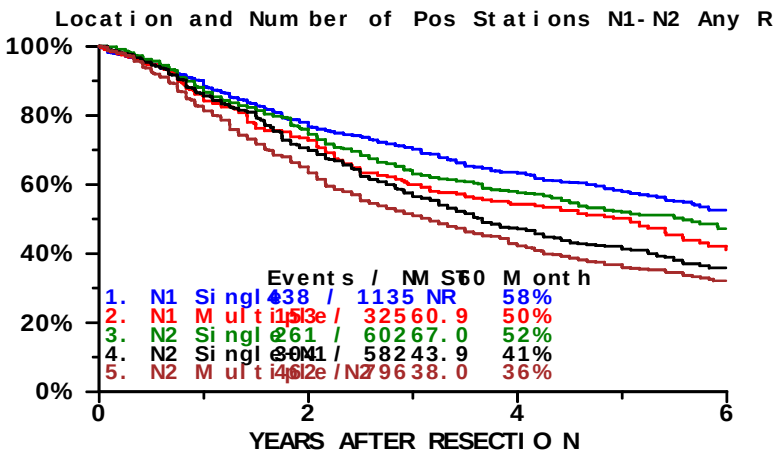
The International Association for the Study of Lung Cancer Lung Cancer Staging Project

Proposals for the Revision of the N Descriptors in the Forthcoming 8th Edition of the TNM Classification for Lung Cancer

Hisao Asamura, MD, Kari Chansky, MS,† John Crowley, PhD,† Peter Goldstraw, MBChB, FRCS,‡ Valerie W. Rusch, MD,§ Johan F. Vansteenkiste, MD,‖ Hirokazu Watanabe, MD,¶ Yi-Long Wu, MD,# Marcin Zielinski, MD,** David Ball, MD,†† and Ramon Rami-Porta, MD,‡‡§§ On behalf of the International Association for the Study of Lung Cancer Staging and Prognostic Factors Committee, Advisory Board Members, and Participating Institutions‖‖*

(*J Thorac Oncol.* 2015;10: 1675–1684)

Pathological – any R

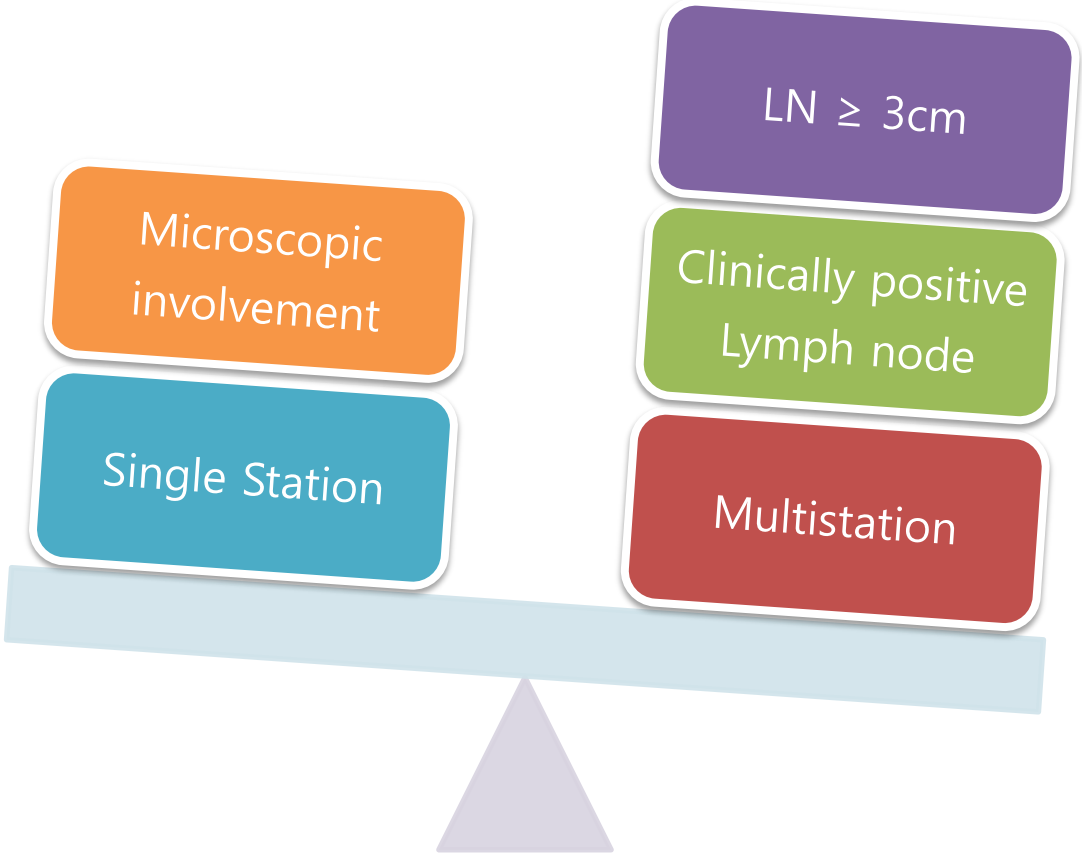


N1 Single = N1a
N1 Multiple = N1b
N2 Single N2 (“skip mets”) = N2a1
N2 Single N2 + N1 = N2a2
N2 Multiple N2 = N2b

N1a vs N1b vs N2a1 vs N2a2 vs N2b Comparisons
Adjusted for Histology (adeno vs others), Sex, Age 60+ , R0 Resection, and Region.
(Cox PH regression on All cases)

comparison	HR	P	
N1b vs N1a	1.38	0.0005	
N2a1 (skip) vs N1b	0.92	0.4331	N2a1 has better
N2a2 vs N2a1 (skip)	1.37	0.0002	
N2b vs N2a2	1.21	0.0117	
N2a2 vs N1b	1.26	0.0197	overlap

Patients With N2 Nodal Involvement: A Heterogeneous Group



"the degree of N2 involvement correlated with prognosis"

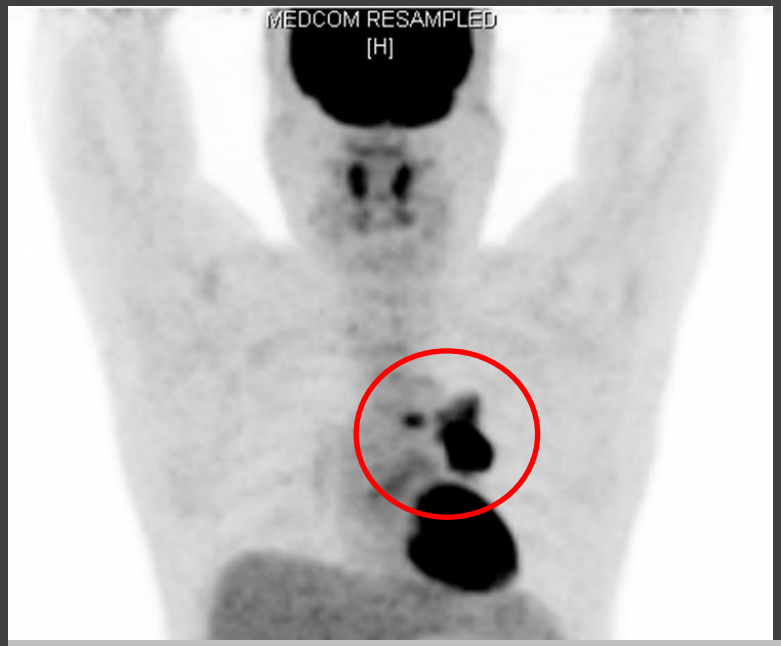
stage IIIa NSCLC with N2+

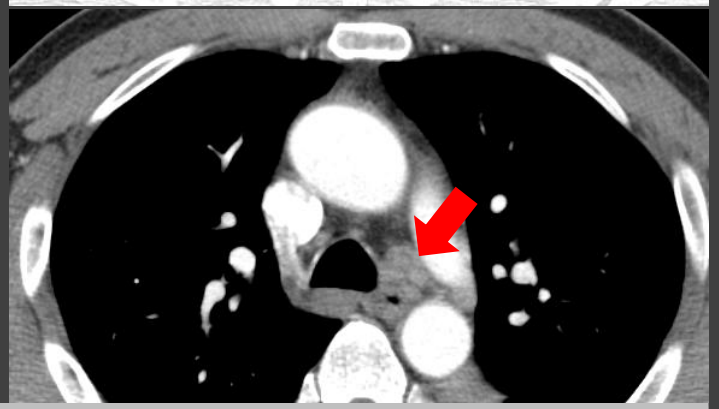
- ✓ Randomised trials and meta-analyses have shown that adjuvant or neoadjuvant chemotherapy improves survival compared with surgery alone.

- ✓ The most relevant determinants of favourable outcome were complete resection of the tumor and downstaging of the mediastinal nodes, from N2 to N1 or N0.

SAKK Lung Cancer Project Group, Lancet 2015

M/53, 40pyr current



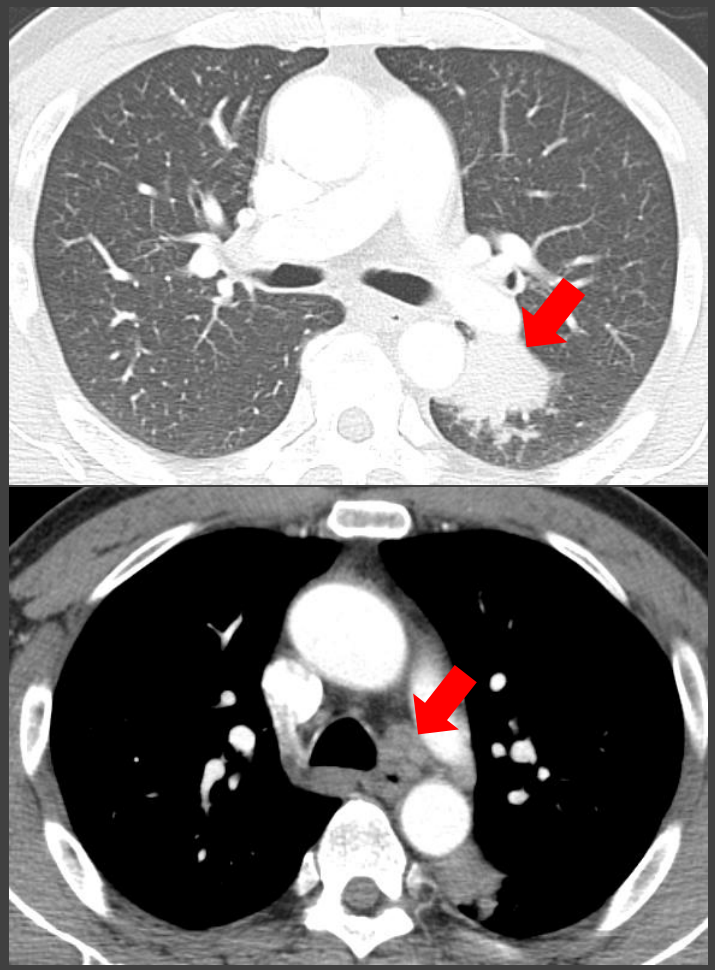


- ✓ **Lung Cancer, SCCa, cT2bN2M0, stage IIIA**
- ✓ T2: 5.1cm mass at LLL sup seg, abutting pleura → squamous cell carcinoma
- ✓ N2: 4L, 10L +

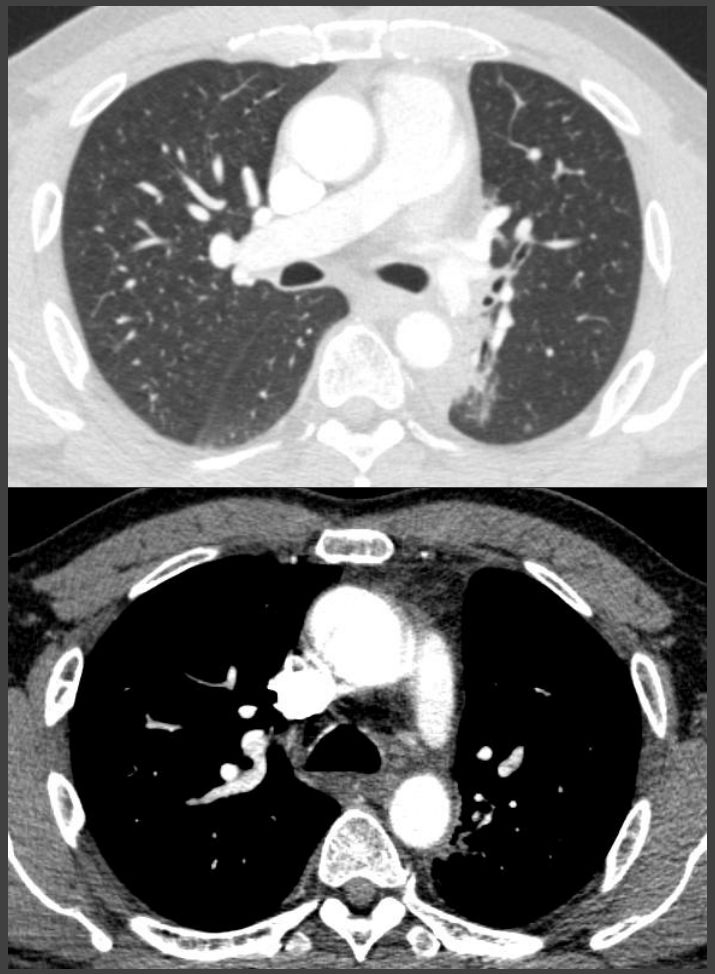
neoadjuvant chemoradiotherapy

weekly Paclitaxel 45mg/m^2 +carboplatin AUC 2 for 5 wks

IMRT 44.1Gy/21Fx on LLL mass, 4L, 10L



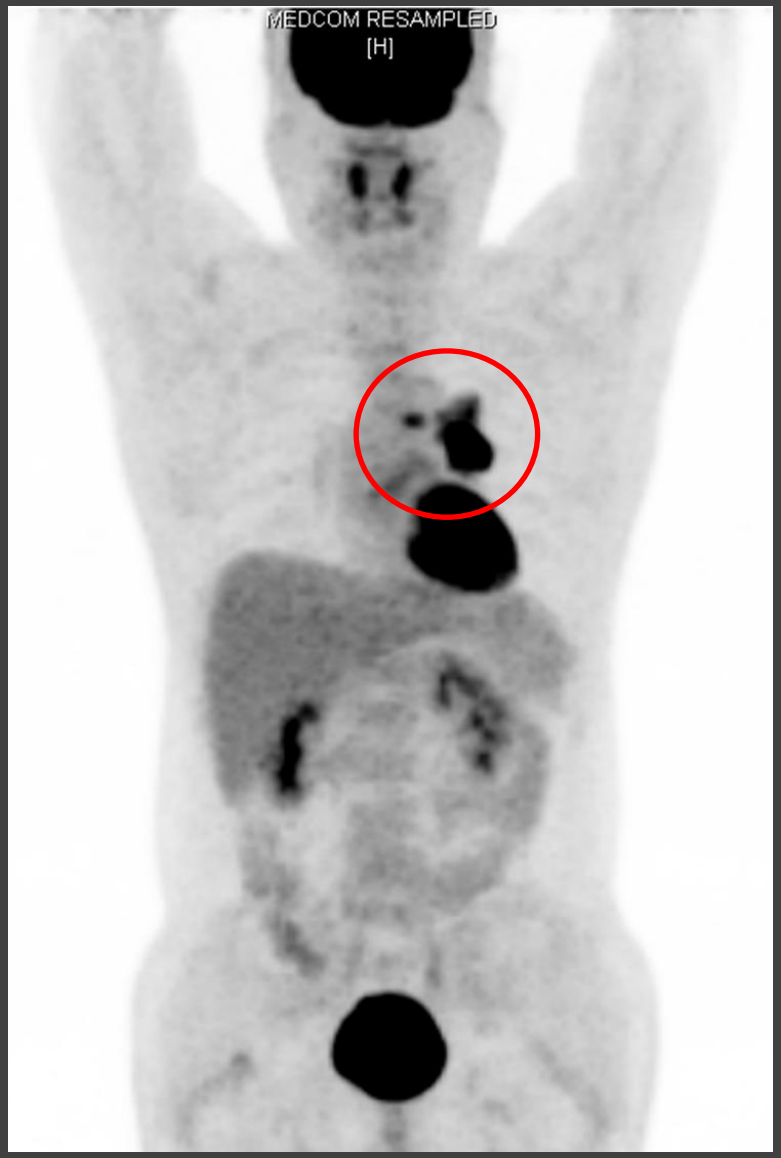
Initial CT



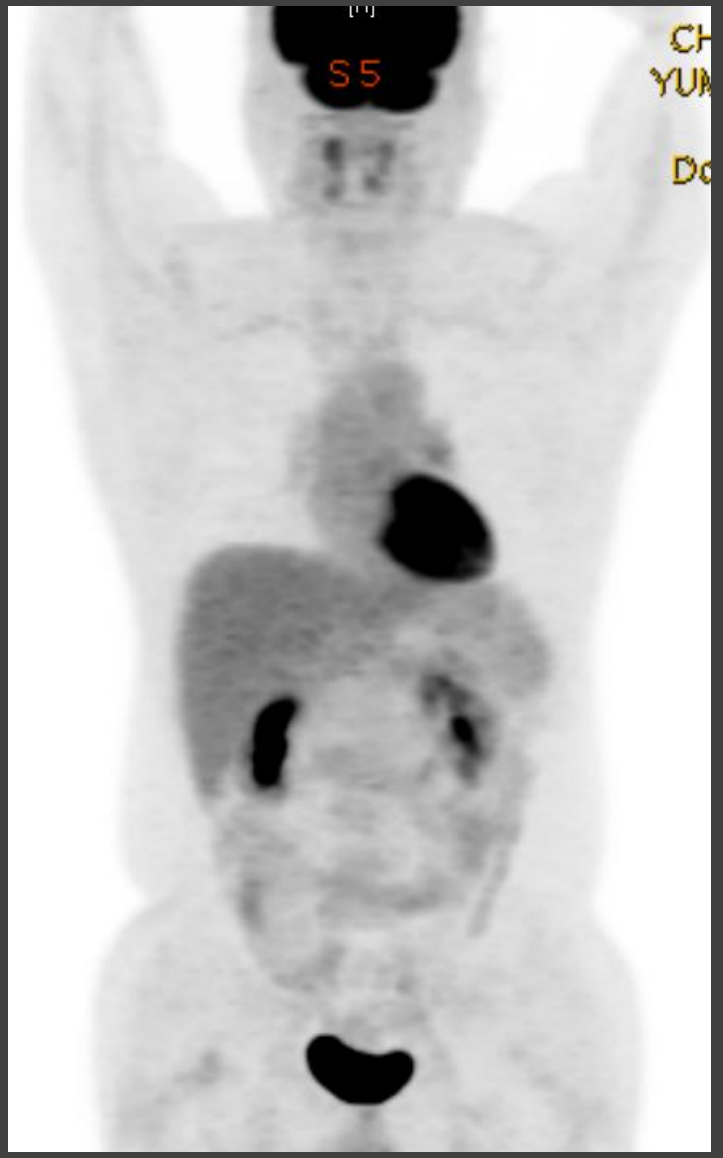
After neoadjuvant chemoradiation Tx

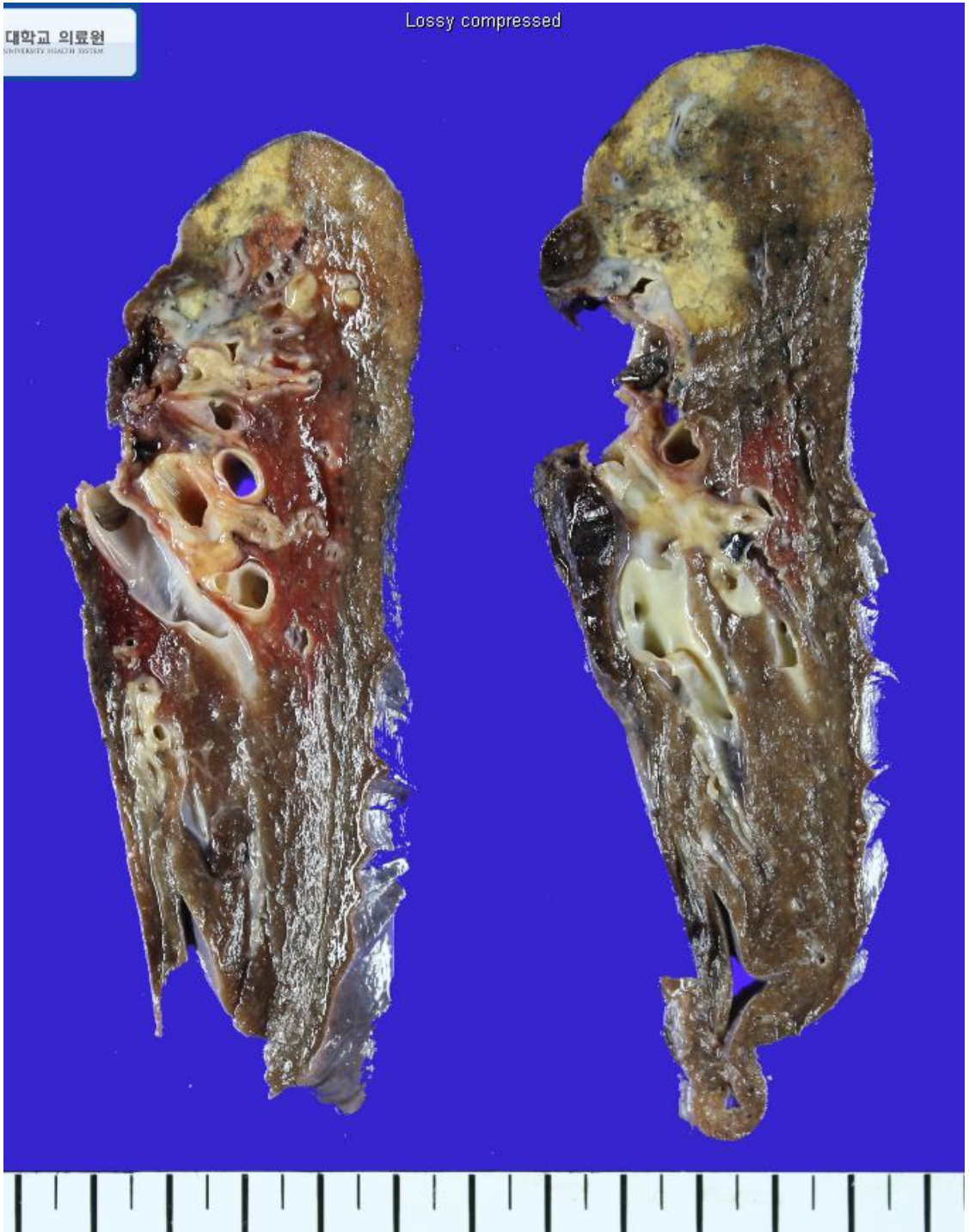
M/53

Initial PET-CT

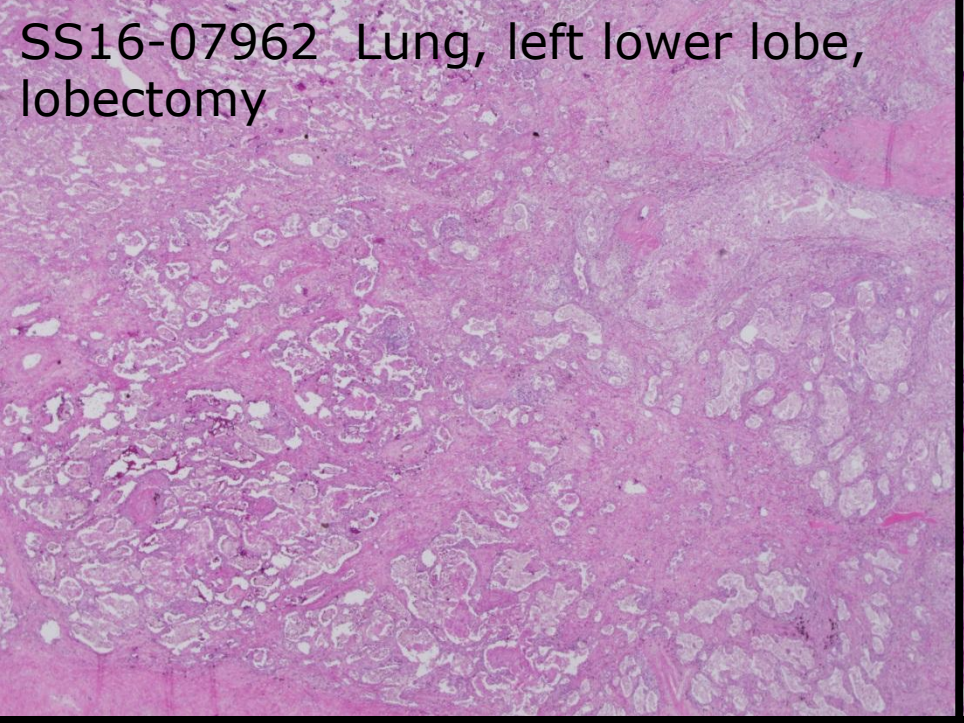


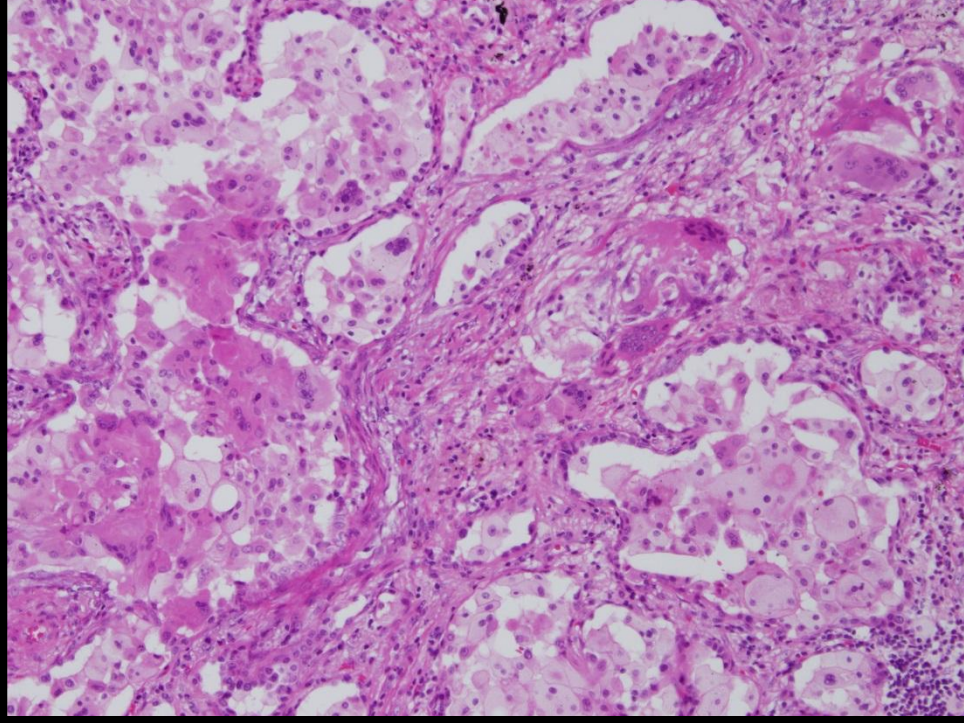
After neoadjuvant chemoradiation Tx

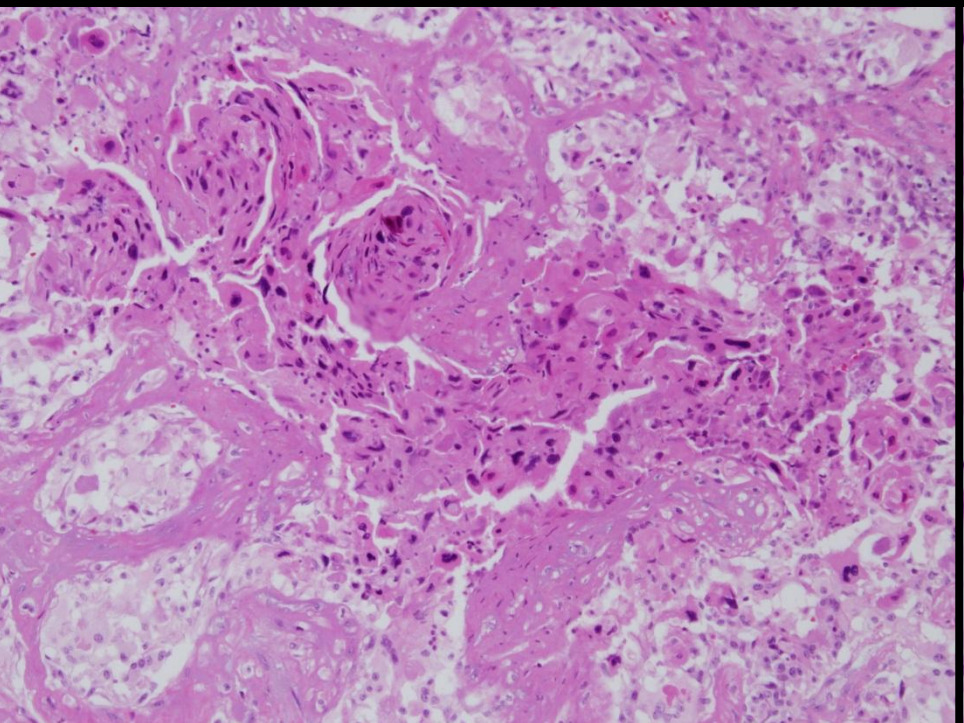


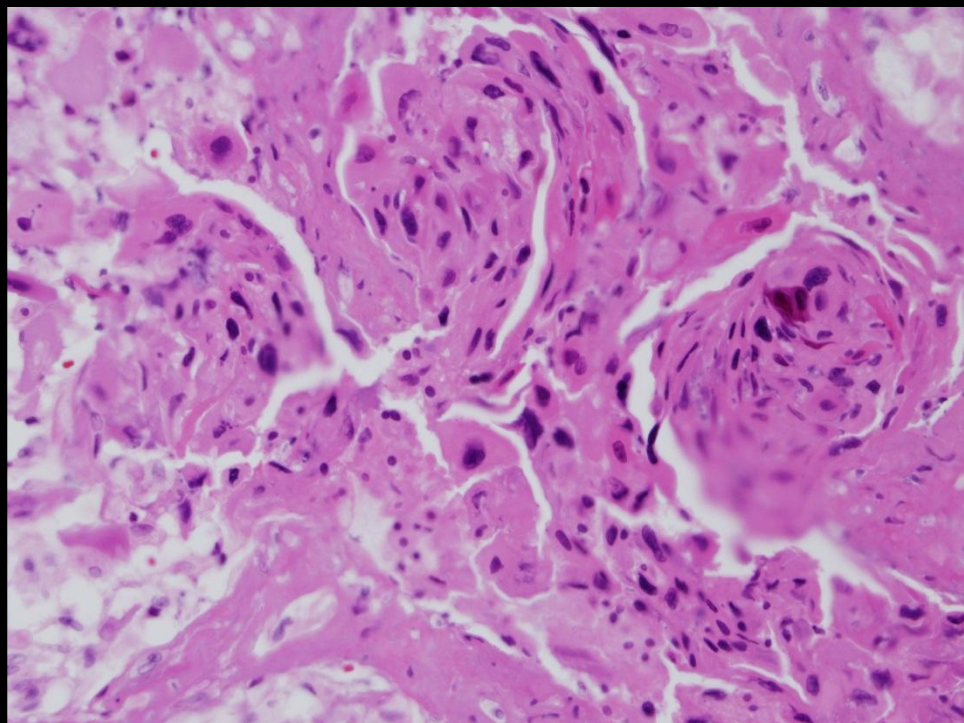

Lossy compressed

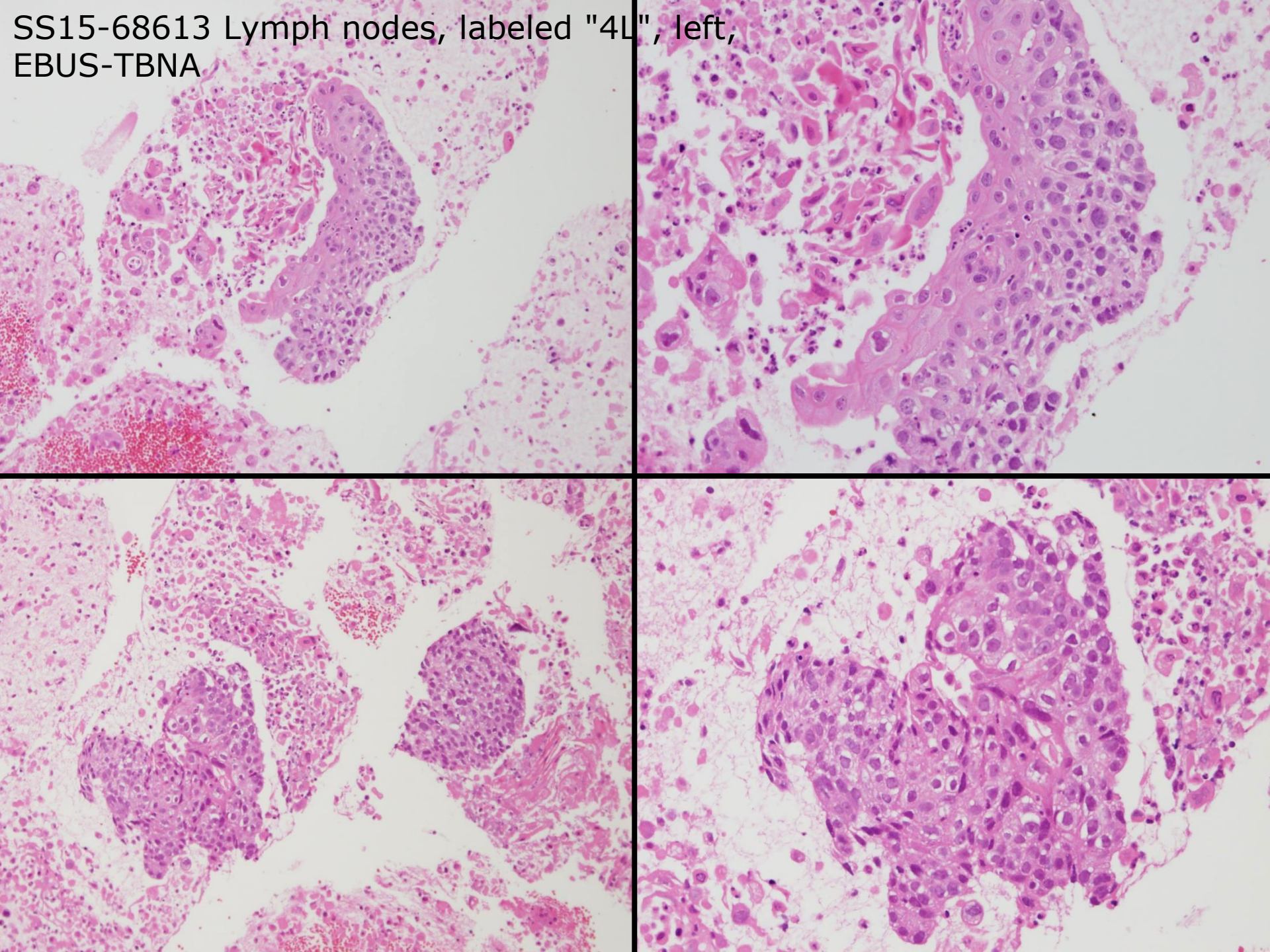
SS16-07962 Lung, left lower lobe, lobectomy

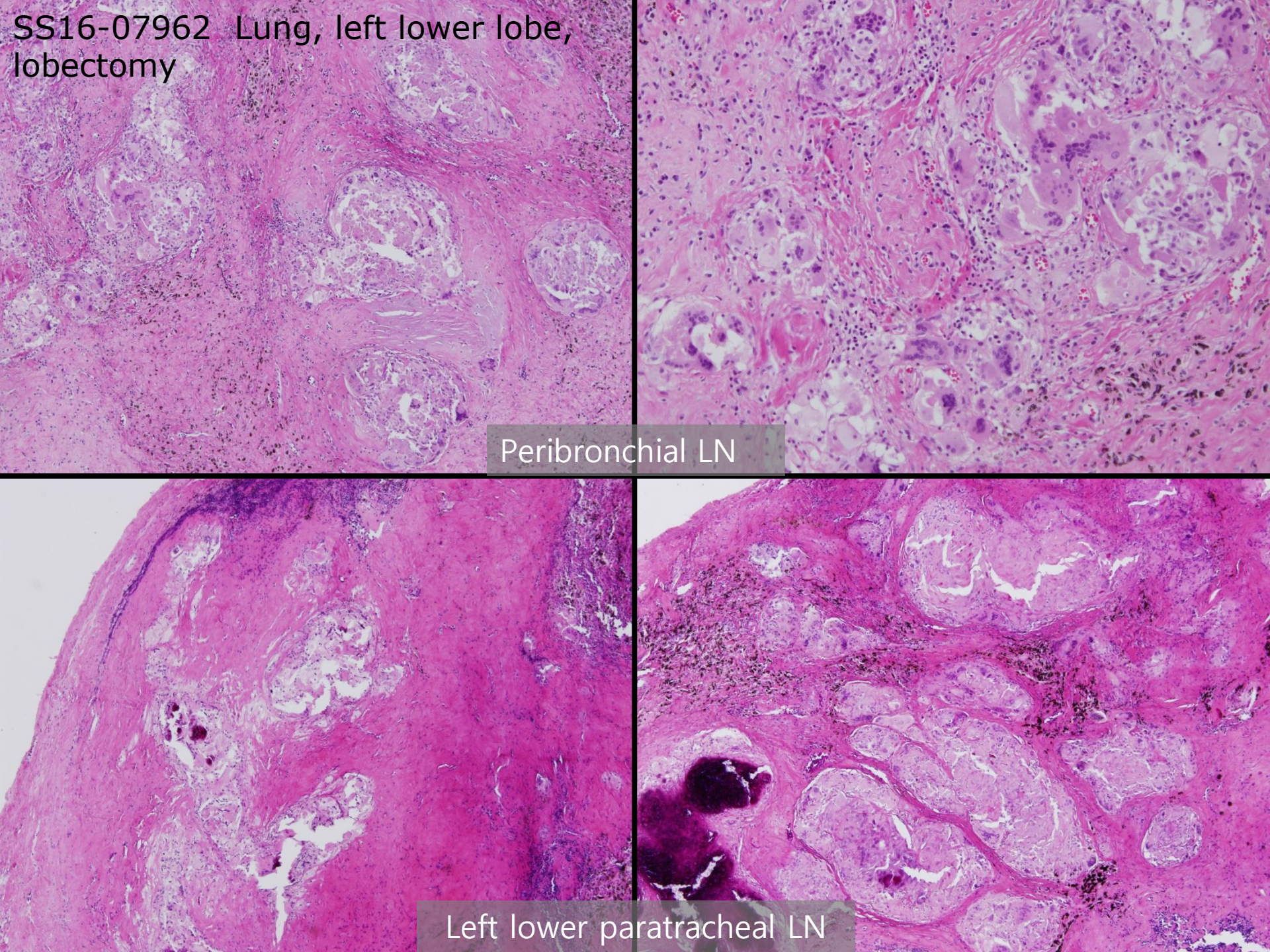









SS15-68613 Lymph nodes, labeled "4L", left,
EBUS-TBNA


SS16-07962 Lung, left lower lobe, lobectomy
Peribronchial LN
Left lower paratracheal LN

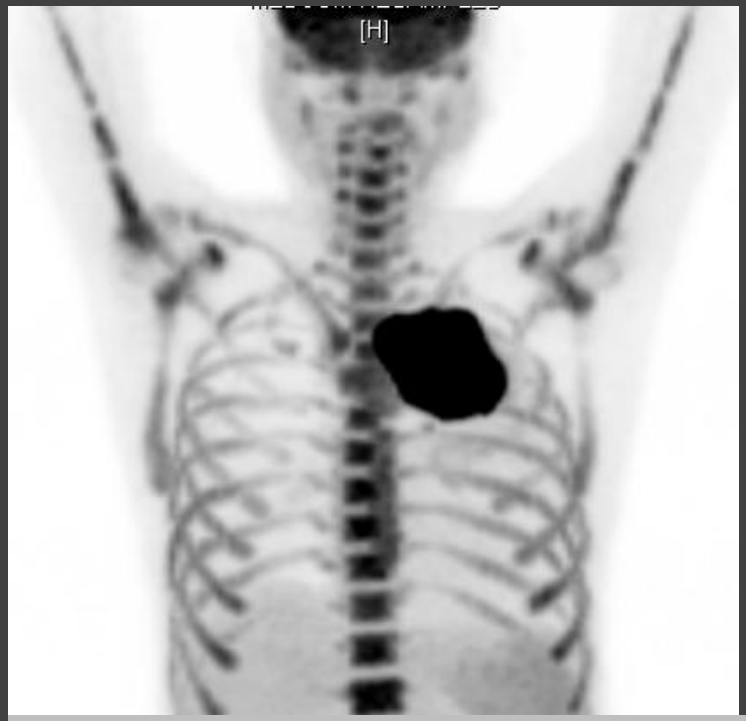
M/53

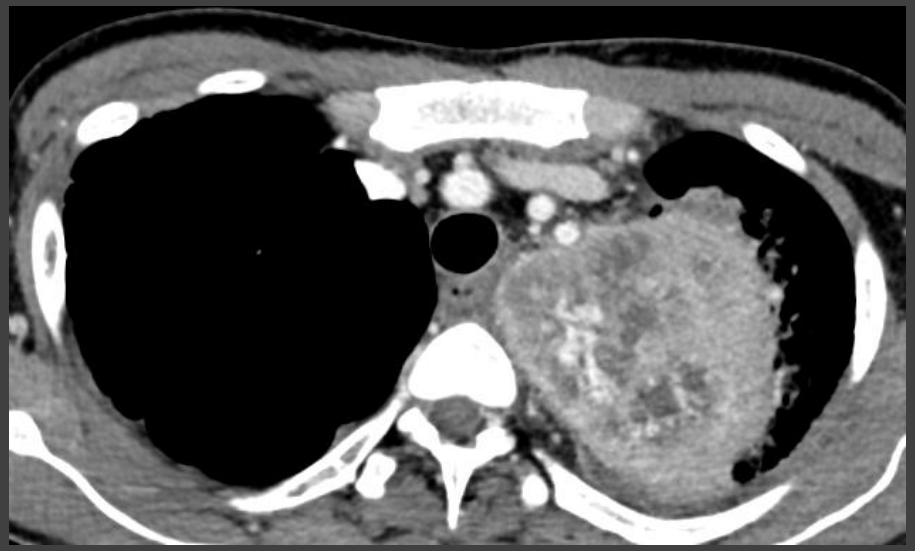
Lung Cancer, SCCa, cT2bN2M0, stage IIIA
→ ypT1a/pN0

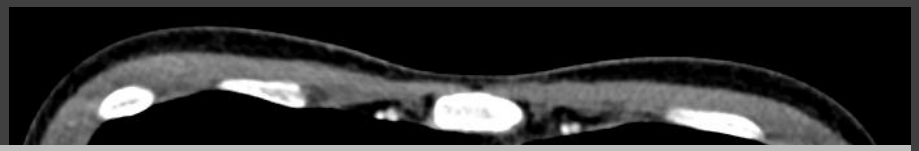
- ✓ T2: 5.1cm → **0.2 x 0.2cm**
- ✓ N2: 4L, 10L +
  → **lymph nodes, total (0/25)**

- ✓ Successful downstaging of mediastinal LNs

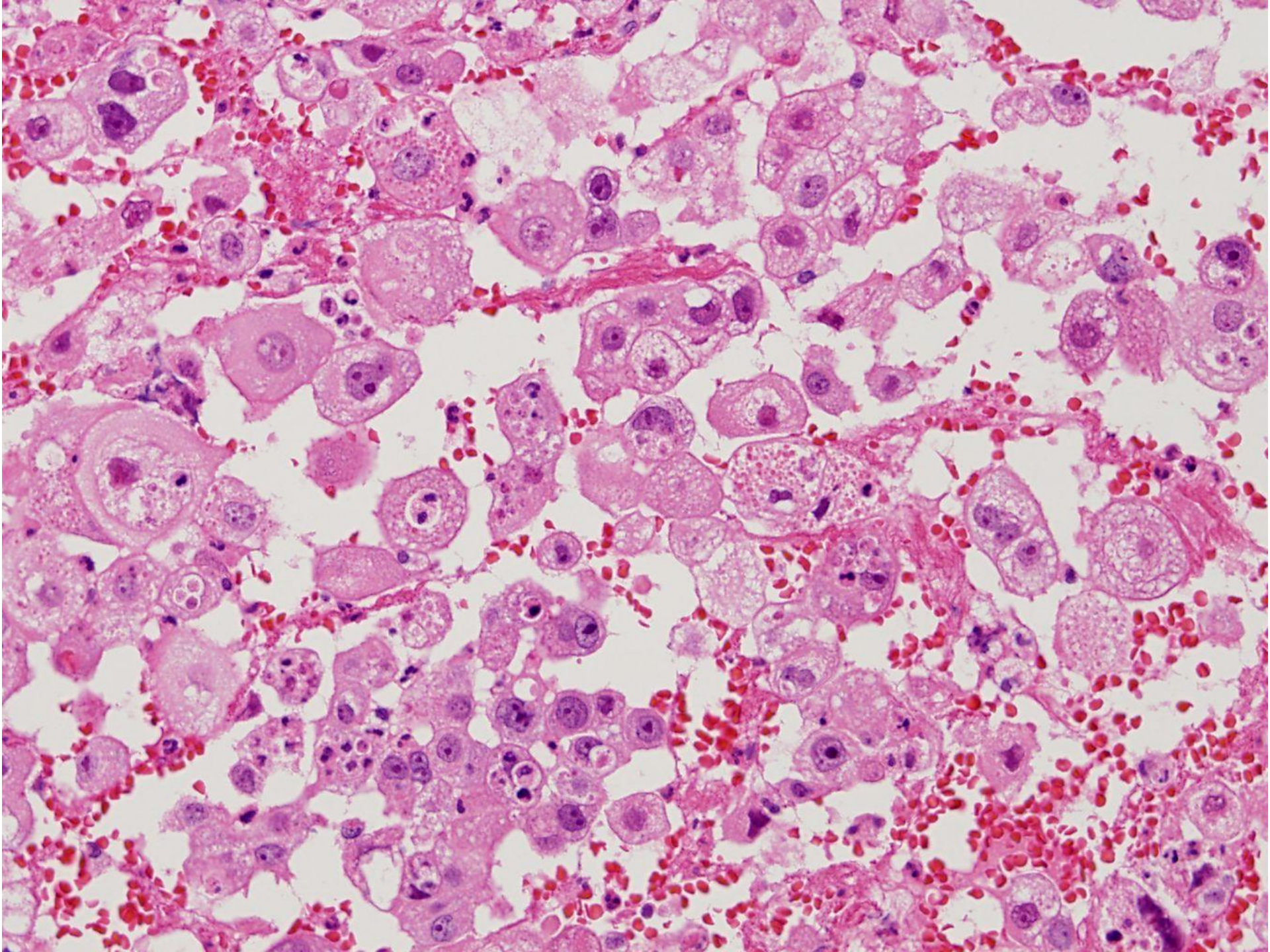
M/32, 15pyr current







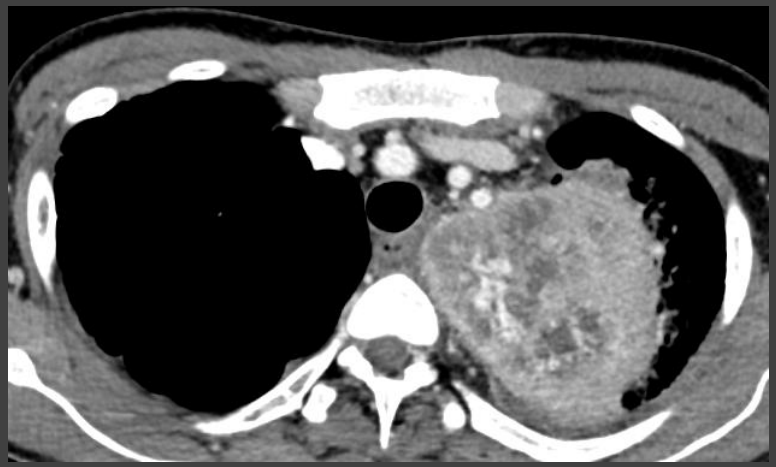
- ✓ **Lung Cancer, poorly diff. adenocarcinoma, cT3N2M0, stage IIIA**
- ✓ T3: 8.6cm mass at LUL
  → poorly diff. adenocarcinoma
- ✓ N2: paraaortic, AP window LN +

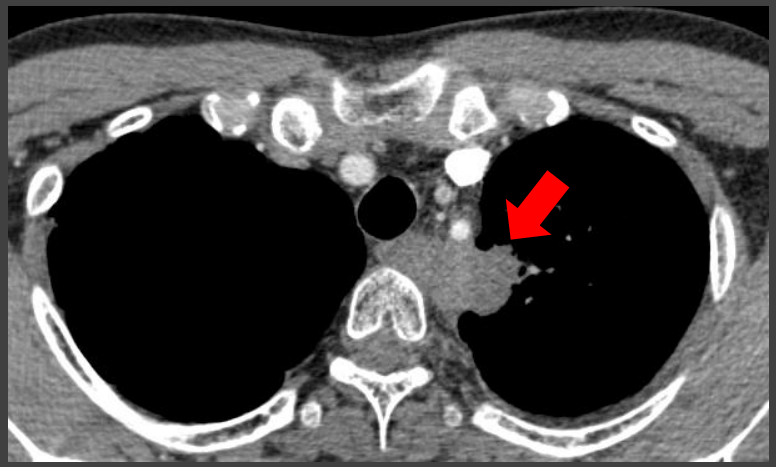


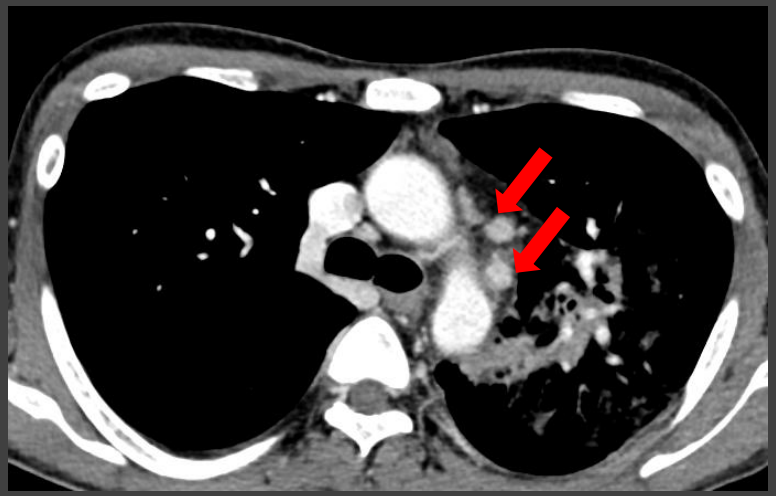
neoadjuvant chemoradiotherapy

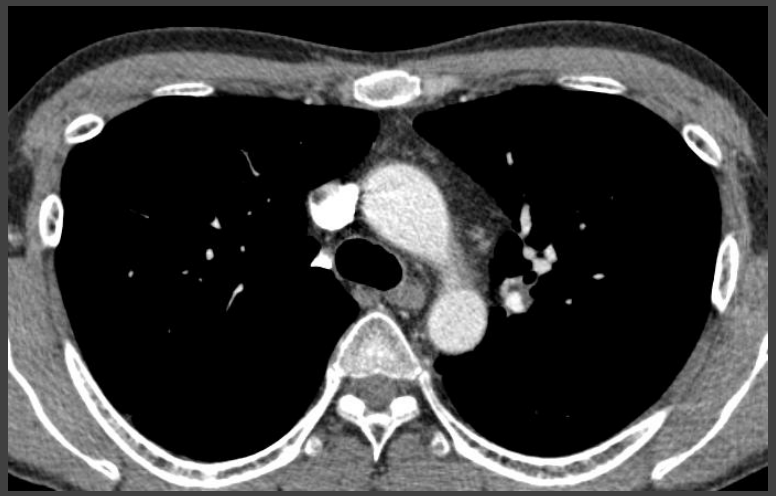
weekly Paclitaxel 45mg/m^2 +carboplatin AUC 2 for 5 wks

IMRT 44.1Gy/21Fx on LUL mass, mediastinal LNs









Initial CT

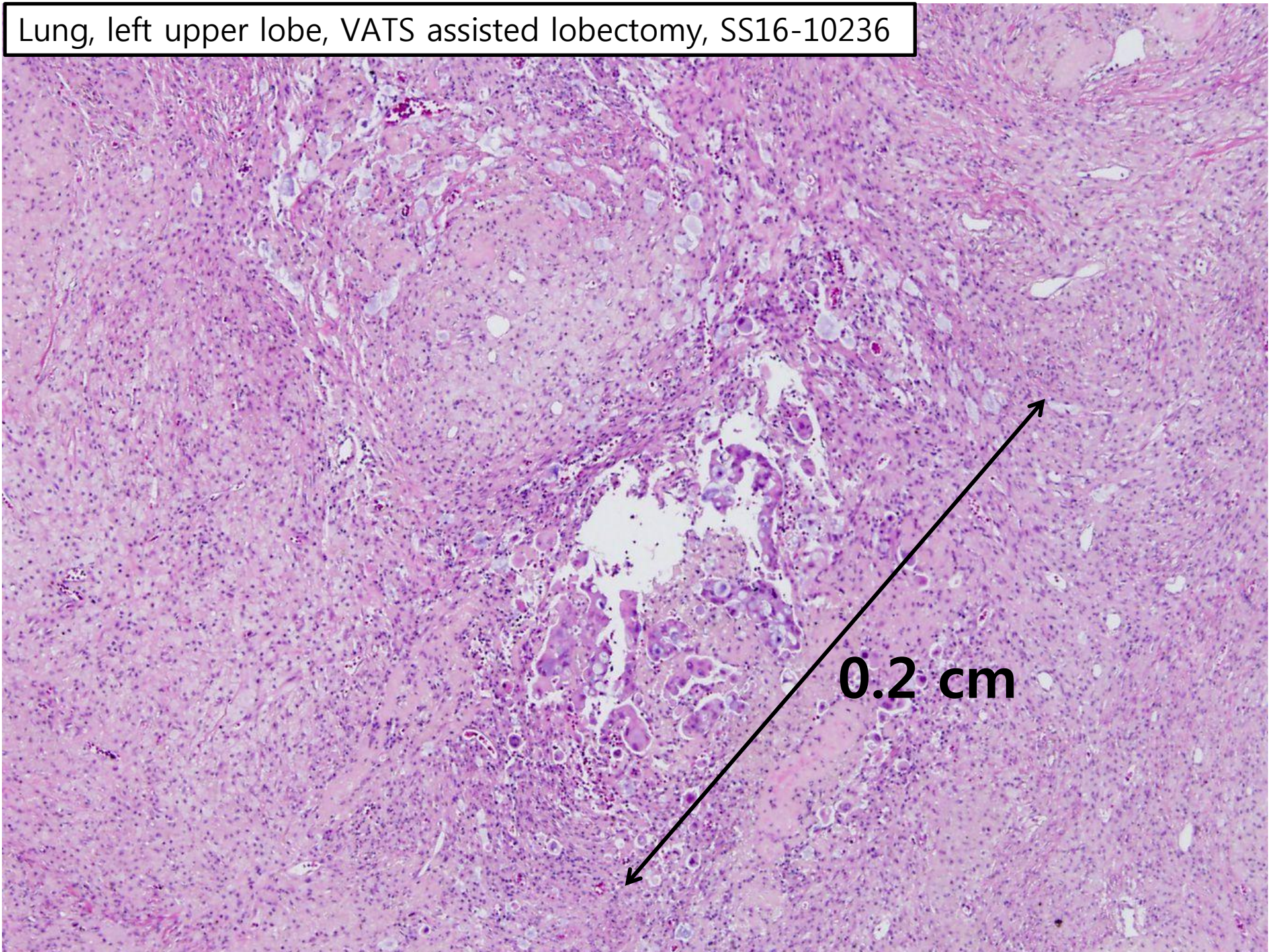
After neoadjuvant chemoradiation Tx

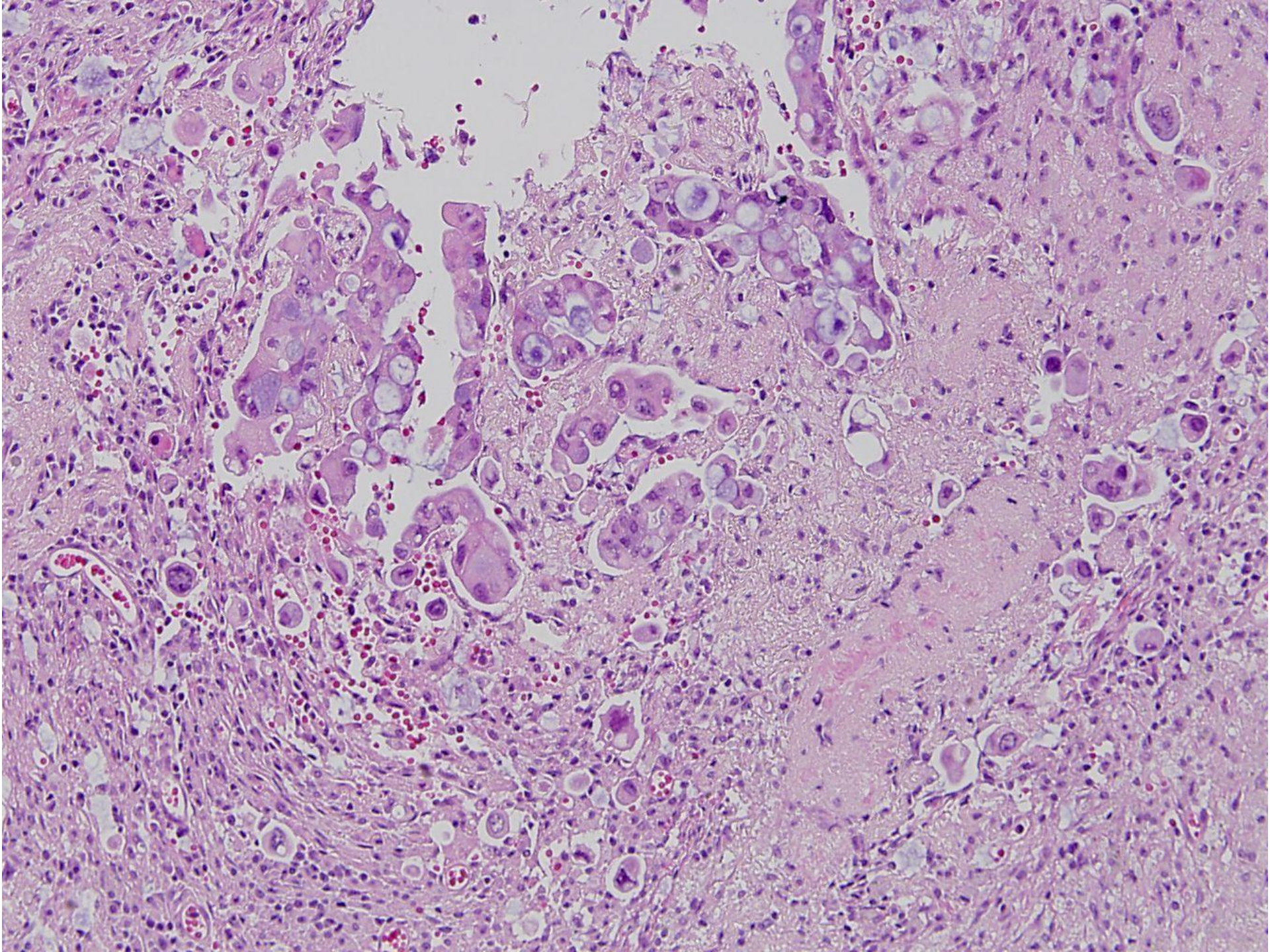
M/32

Initial PET-CT

After neoadjuvant chemoradiation Tx

Lung, left upper lobe, VATS assisted lobectomy, SS16-10236


Lung, left upper lobe, VATS assisted lobectomy, SS16-10236
0.2 cm



M/32

Lung Cancer, adenoca, cT3N2M0, stage IIIA
→ ypT1a/pN0

- ✓ T3: 8.6cm
  → 0.2 x 0.2cm, Necrosis: Present (99%)
- ✓ N2: paraaortic, AP window LN +
  → paraaortic (0/2), AP window (0/1), total (0/21)

- ✓ Successful downstaging of mediastinal LNs

Initial Evaluation

- ✓ precise evaluation of the mediastinum
  ☞ the optimal therapy can be determined

- ✓ Noninvasive imaging studies can provide evidence of mediastinal lymph node involvement; however, *pathologic confirmation is necessary* as a rule.

- ✓ One of the most important avoidable errors in lung cancer staging is clinical *overstaging of the mediastinum* without pathologic confirmation.

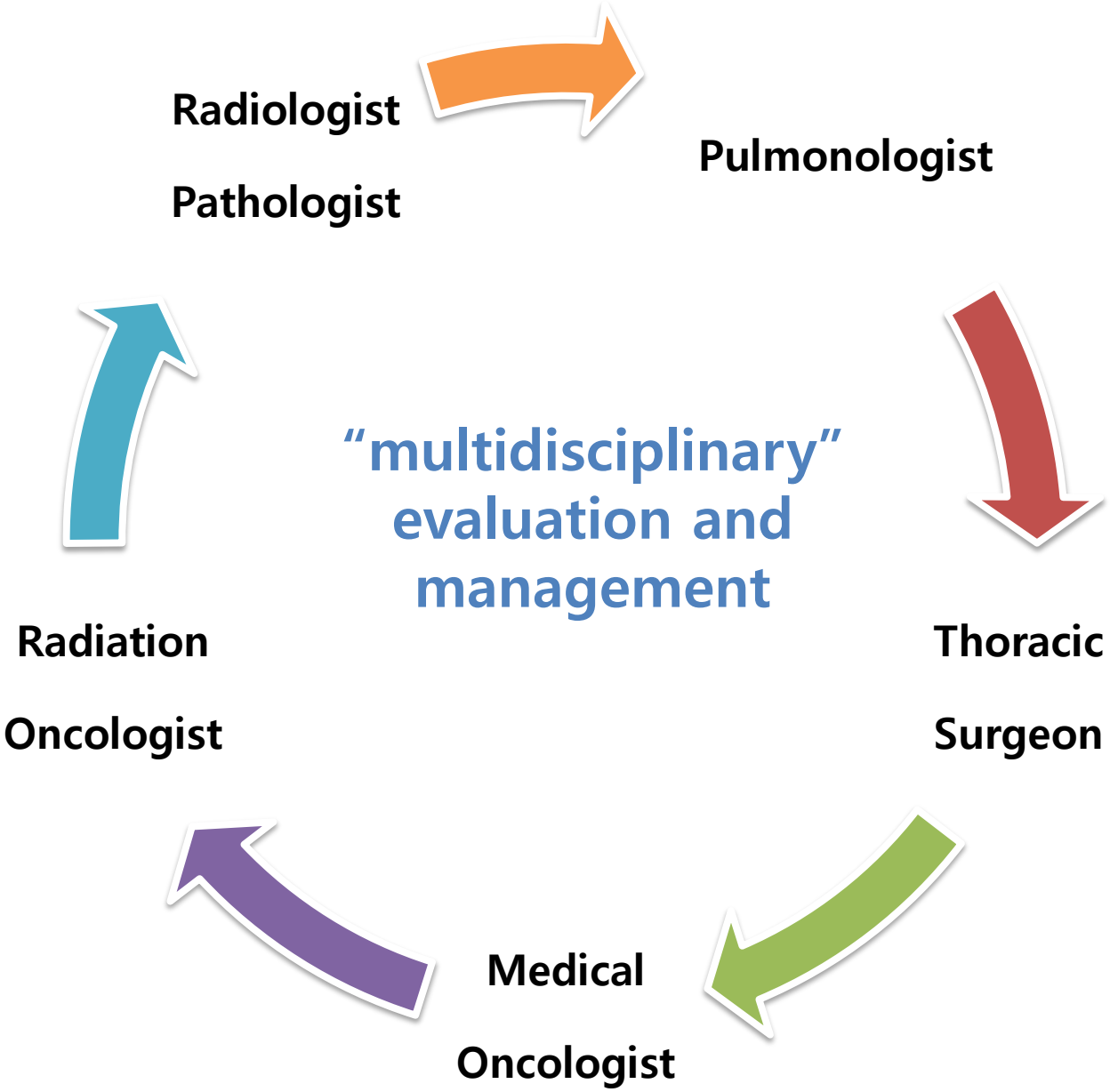
Martins et al. JNCCN 10.5 (2012): 599-613.

Initial Evaluation

- ✓ Many minimally invasive techniques are now available for confirming mediastinal lymph node status (e.g., EBUS, endoscopic ultrasound [EUS], mediastinoscopy, VATS)

  ☞ the confirmation of positive N2 lymph nodes should be routine in most cases.

Martins et al. JNCCN 10.5 (2012): 599-613.


Radiologist
Pathologist
Pulmonologist
"multidisciplinary" evaluation and management
Thoracic Surgeon
Medical Oncologist
Radiation Oncologist

Controversial issues on N2+ stage IIIa NSCLC

Optimal Induction Strategy

Purpose of induction treatment

- ✓ To improve resectability, local control & pathological response and outcome
- ✓ To control micrometastasis and lower systemic recurrence

Controversial issues on N2+ stage IIIa NSCLC

Optimal Induction Strategy

Chemotherapy vs. Concurrent chemoradiation

"Is there significant differences in progression-free or overall survival between the treatment strategies?"

Controversial issues on N2+ stage IIIa NSCLC

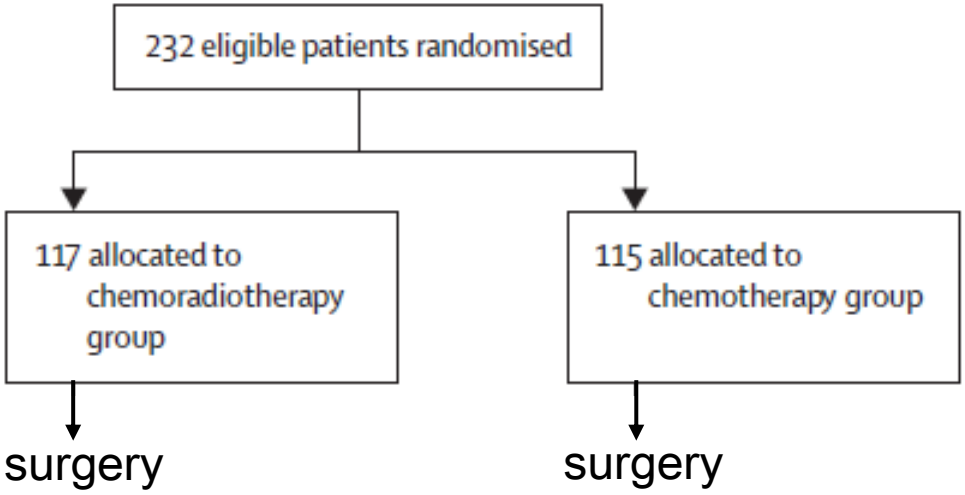
Optimal Induction Strategy

- Role of systemic treatment
  - Neoadjuvant chemotherapy improves survival compared to surgery alone
    - (Rosell NEJM 1994, Roth JNCI 1994, Song JTO 2010)
  - Adjuvant chemotherapy improves survival compared to surgery alone
    - (Winton NEJM 2005, Arriagata NEJM 2004, Doullard Lancet Oncol 2005, Arriagata Lancet 2010)

Induction chemoradiation in stage IIIA/N2 non-small-cell lung cancer: a phase 3 randomised trial

Miklos Pless, Roger Stupp, Hans-Beat Ris, Rolf A Stahel, Walter Weder, Sandra Thierstein, Marie-Aline Gerard, Alexandros Xyrafas, Martin Früh, Richard Cathomas, Alfred Zippelius, Arnaud Roth, Milorad Bijelovic, Adrian Ochsenbein, Urs R Meier, Christoph Mamot, Daniel Rauch, Oliver Gautschi, Daniel C Betticher, René-Olivier Mirimanoff, Solange Peters, on behalf of the SAKK Lung Cancer Project Group

- ✓ From 2001 to 2012
- ✓ 23 Centers in Switzerland, Germany, and Serbia
- ✓ N = 232 patients
- ✓ Pathologic proven stage IIIA/N2+ NSCLC



Chemotherapy
: 3 cycles of cisplatin(100mg/m2)
+ docetaxel(85mg/m2)

Radiotherapy
: after chemotherapy
4,400cGy in 22 fractions

	Chemoradiotherapy group (n=117)		Chemotherapy group (n=115)
	After chemotherapy	After radiotherapy	
Complete response	0	4 (3%)	2 (2%)
Partial response	60 (51%)	67 (57%)	48 (42%)
Any objective response	60 (51%)*	71 (61%)†	50 (44%)
No change	35 (30%)	18 (15%)	45 (39%)
Progressive disease	11 (9%)	4 (3%)	16 (14%)
Unknown or not assessable	11 (9%)	4 (3%)	4 (4%)
Missing (no radiotherapy)	0	20 (17%)	0

Based on WHO tumour response classification. *p=0·240. †p=0·012.

Table 4: **Tumour response rates after treatment**

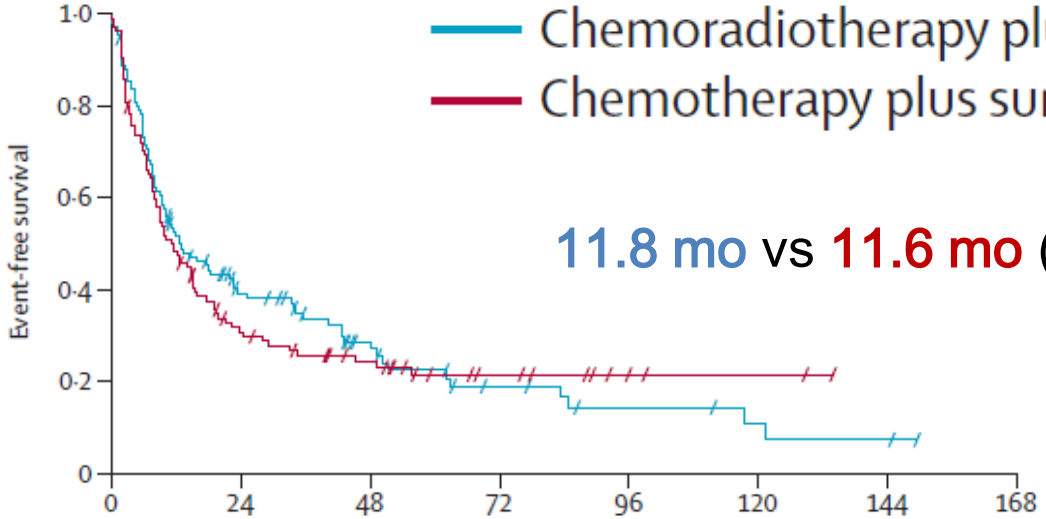
SAKK Lung Cancer Project Group, Lancet 2015

	Chemoradiotherapy group (n=99)	Chemotherapy group (n=94)
Types of surgery		
Lobectomy	58 (59%)	59 (63%)
Bilobectomy	13 (13%)	9 (10%)
Pneumonectomy	25 (25%)	19 (20%)
Resection score		
R0	90 (91%)	76 (81%)
R1	6 (6%)	11 (12%)
R2	3 (3%)	7 (8%)
Nodal downstaging (to N1 or N0)	63 (64%)	50 (53%)
Pathological complete remission	16 (16%)	11 (12%)

Table 5: Types of surgery and outcomes

SAKK Lung Cancer Project Group, Lancet 2015

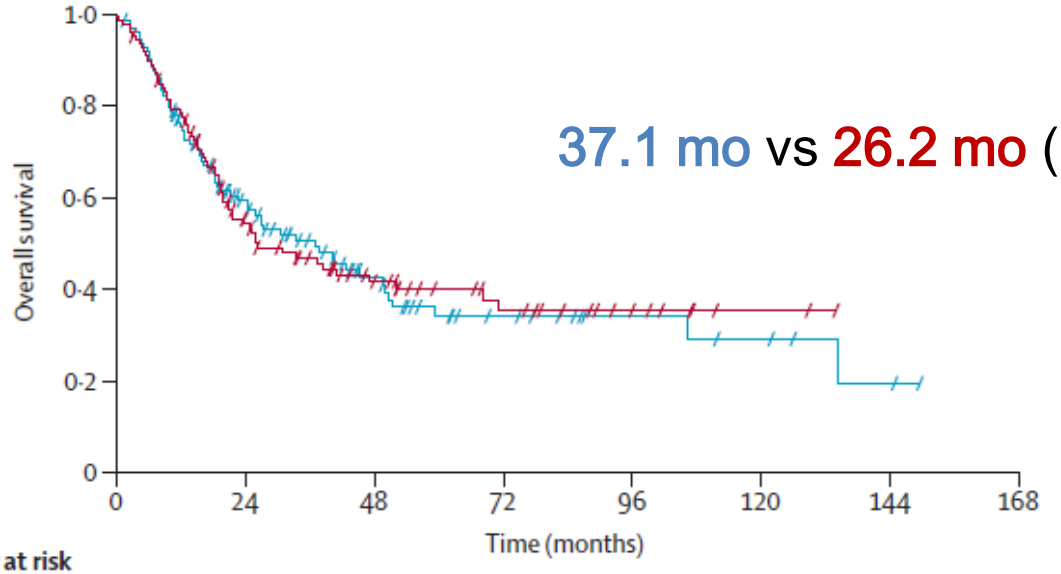
Disease Free Survival



11.8 mo vs 11.6 mo (HR 1.1)

Number at risk								
Chemoradiotherapy group	117	37	19	9	5	3	2	0
Chemotherapy group	115	31	19	9	3	2	0	0

Overall Survival



37.1 mo vs 26.2 mo (HR 1.0)

Number at risk								
Chemoradiotherapy group	117	57	27	13	7	5	2	0
Chemotherapy group	115	53	28	15	7	2	0	0

SAKK Lung Cancer Project Group, Lancet 2015

Induction chemoradiation in stage IIIA/N2 non-small-cell lung cancer: a phase 3 randomised trial

- ✓ First completed randomized trial for this question
- ✓ The additional radiotherapy to neoadju
  did not improve DFS, OS or local contr
- ✓ Overall survival results encouraging
  : bulky N2
  median OS: 37.1 mo in chemoradiation vs 26.2 mo in chemo alone (HR 1.0)

cisplatin and docetaxel followed by surgery → adequate treatment option for stage IIIA/N2 NSCLC

- ✓ One local treatment remains the standard
- ✓ Surgical mortality < 1%
- ✓ At this time no indication for neoadjuvant RT outside of a clinical trial
- ✓ As for adjuvant radiotherapy: LungART trial results awaited

SAKK Lung Cancer Project Group, Lancet 2015

Controversial issues on N2+ stage IIIa NSCLC

Role of Surgery

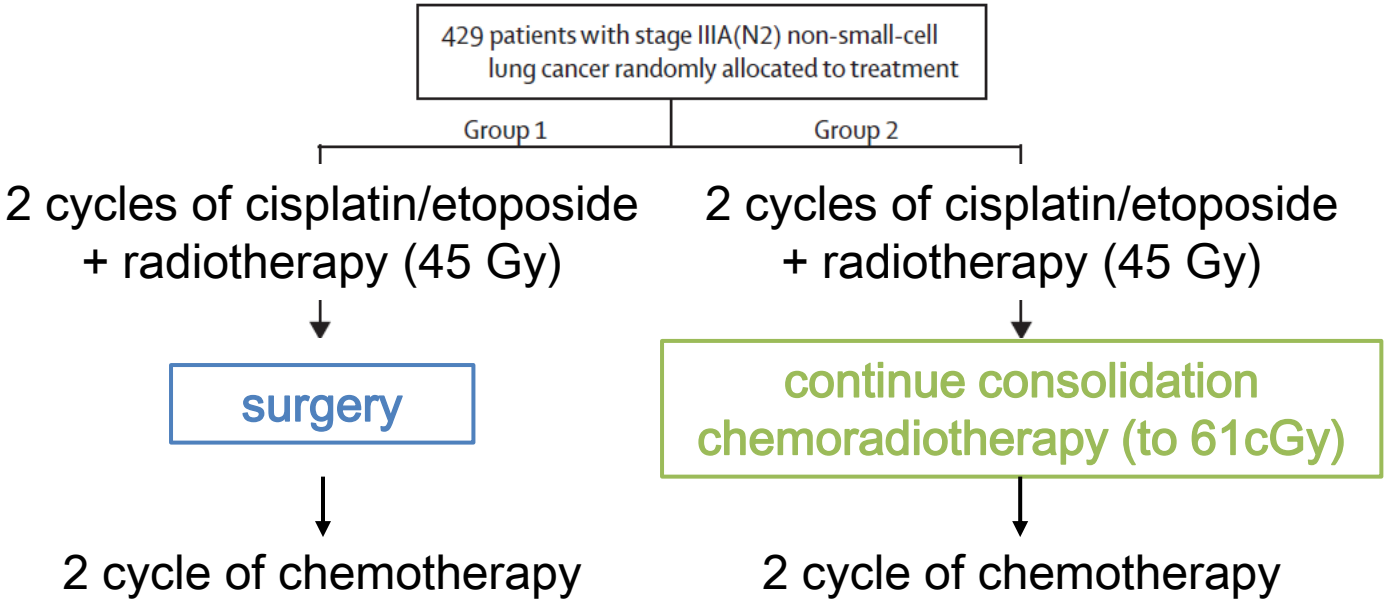
CCRTx+surgery vs. CCRTx

*"Randomized controlled trials suggest that surgery does **not** increase survival in these patients."*

Radiotherapy plus chemotherapy with or without surgical resection for stage III non-small-cell lung cancer: a phase III randomised controlled trial

Kathy S Albain, R Suzanne Swann, Valerie W Rusch, Andrew T Turrisi III, Frances A Shepherd, Colum Smith, Yuhchyau Chen, Robert B Livingston, Richard H Feins, David R Gandara, Willard A Fry, Gail Darling, David H Johnson, Mark R Green, Robert C Miller, Joanne Ley, Willliam T Sause, James D Cox

- ✓ multiple centers in the USA and Canada
- ✓ N = 396 patients
- ✓ Pathologic proven stage IIIA/N2+ NSCLC



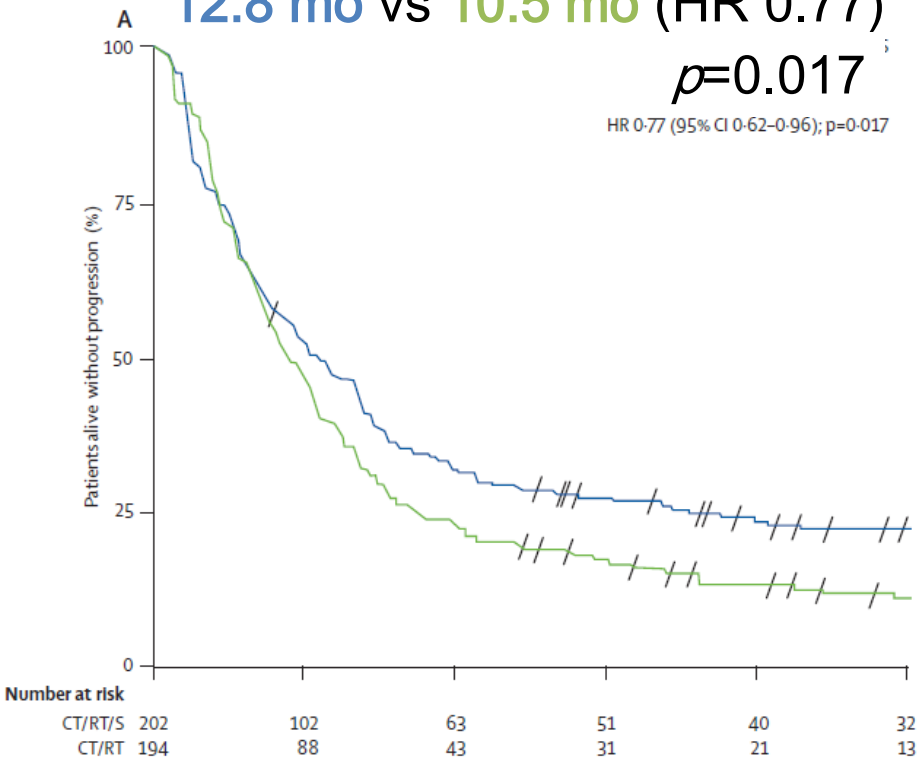
Chemoradiation + surgery

Chemoradiation

Progression Free Survival

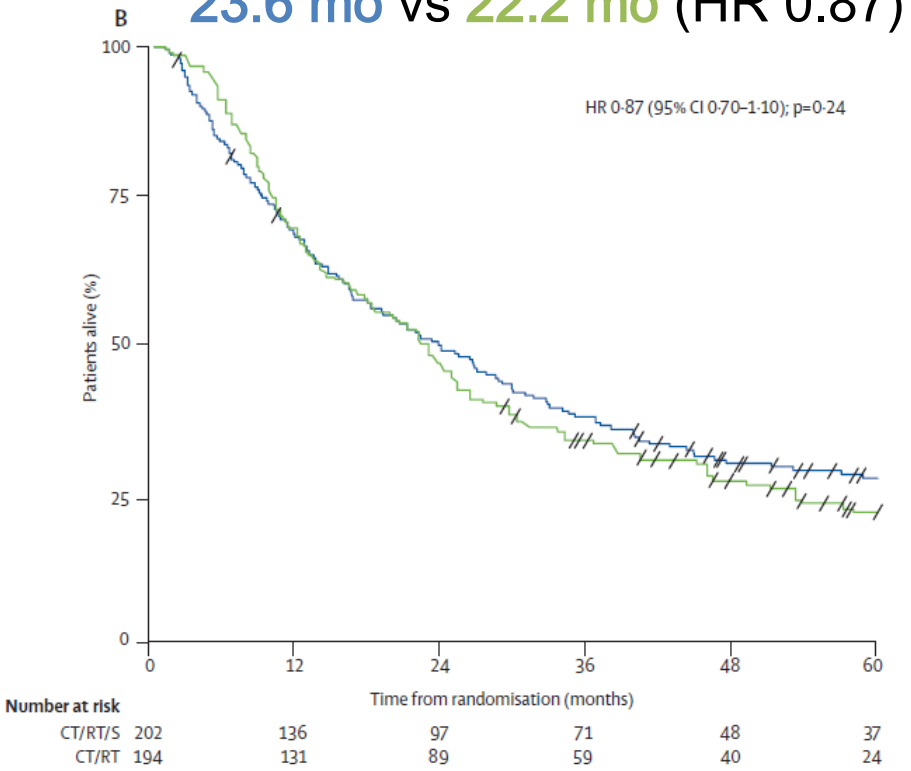
12.8 mo vs 10.5 mo (HR 0.77)

p=0.017



Overall Survival

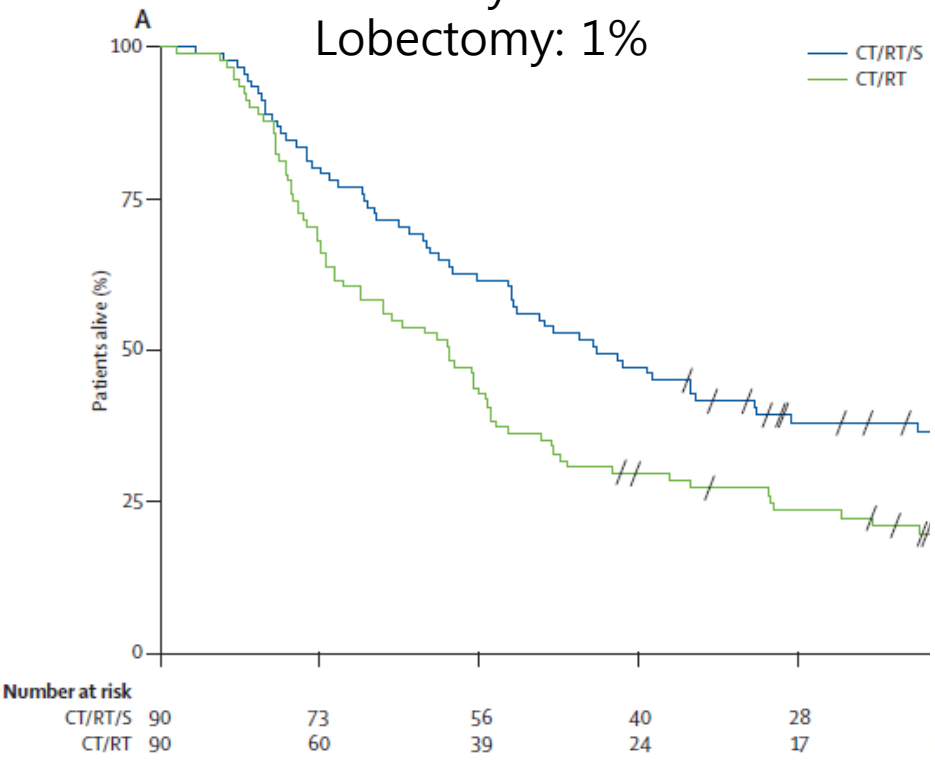
23.6 mo vs 22.2 mo (HR 0.87)



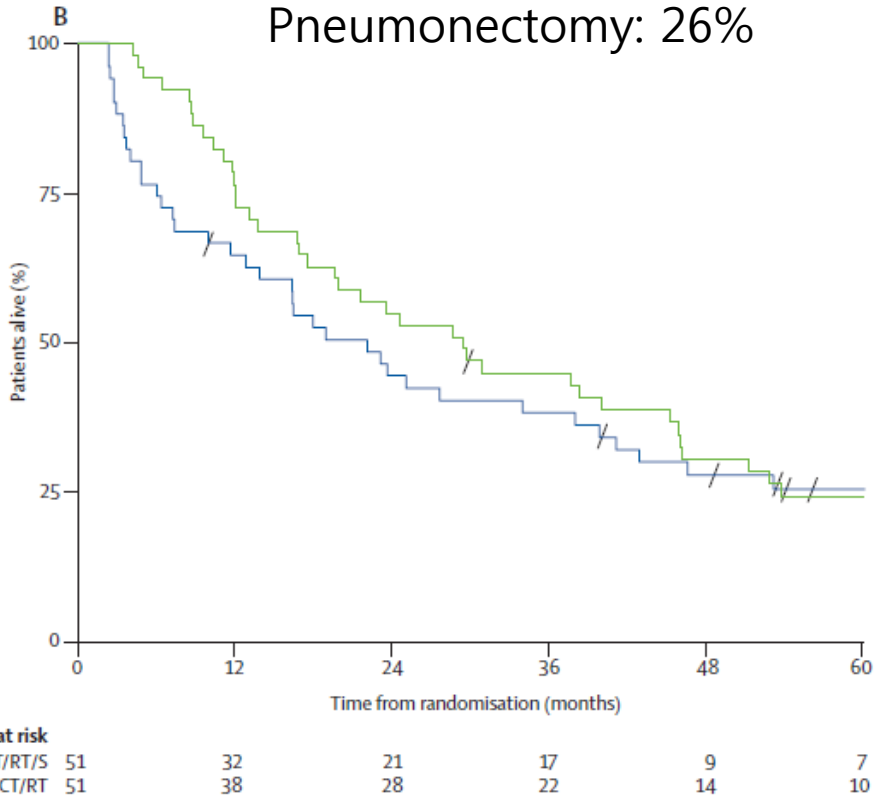
Albain et al. Lancet 2009

N2+ stage IIIa NSCLC
CCRTx+surgery vs. CCRTx

Mortality
Lobectomy: 1%



Mortality
Pneumonectomy: 26%



Albain et al. Lancet 2009

Controversial issues on N2+ stage IIIa NSCLC

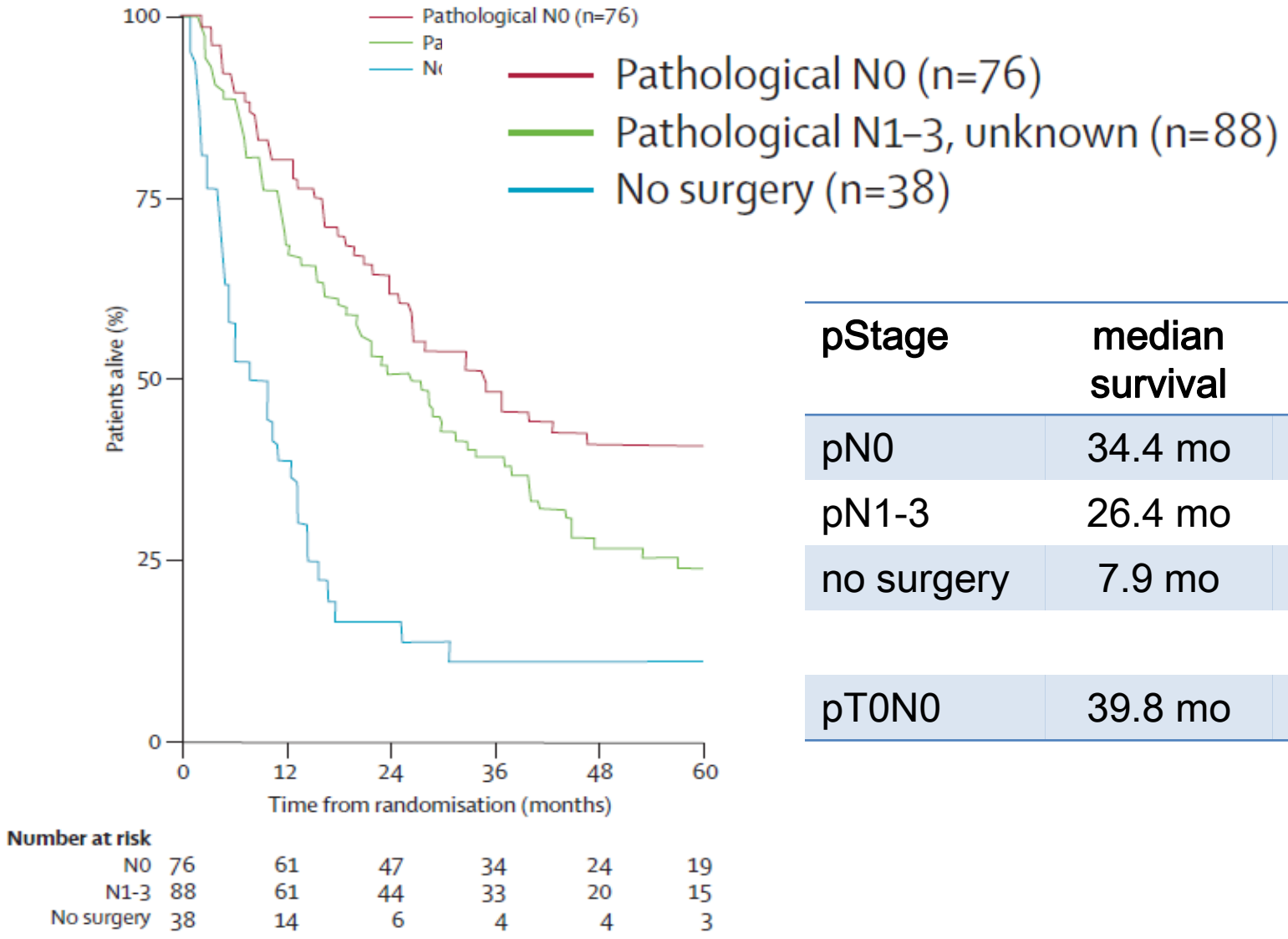
Role of Surgery

Which patients are candidate for surgery in stage N2+ stage IIIa ?

- Is complete resection possible?
- Is surgery indicated from an overall oncological point of view?
- Does the patient tolerate pulmonary resection?
- What is the mortality/morbidity?

"**risk / benefit assessment**"

N2+ stage IIIa NSCLC CCRTx+surgery vs. CCRTx



pStage	median survival	5-year survival rate
pN0	34.4 mo	41%
pN1-3	26.4 mo	24%
no surgery	7.9 mo	8%
pT0N0	39.8 mo	42%

Albain et al. Lancet 2009

Controversial issues on N2+ stage IIIa NSCLC

Role of Surgery

Induction chemotherapy followed by surgery

"*mediastinal downstaging*"

"*complete resection with lobectomy is achievable and the surgical risk balanced with the potential benefit*"

Controversial issues on N2+ stage IIIa NSCLC

Assessment of Treatment Response After Neoadjuvant Therapy

"It is appropriate to assess of treatment response after neoadjuvant therapy using FDG-PET/CT?"

CHEMOTHERAPY REGIMENS USED WITH RADIATION THERAPY

Concurrent Chemotherapy/RT Regimens[*,**]

- Cisplatin 50 mg/m² on days 1, 8, 29, and 36; etoposide 50 mg/m² days 1–5, 29–33; concurrent thoracic RT[a,b]
- Cisplatin 100 mg/m² days 1 and 29; vinblastine 5 mg/m²/weekly x 5; concurrent thoracic RT[b]
- Carboplatin AUC 5 on day 1, pemetrexed 500 mg/m² on day 1 every 21 days for 4 cycles; concurrent thoracic RT[c] (nonsquamous)
- Cisplatin 75 mg/m² on day 1, pemetrexed 500 mg/m² on day 1 every 21 days for 3 cycles; concurrent thoracic RT[d] (nonsquamous)
- Paclitaxel 45–50 mg/m² weekly; carboplatin AUC 2, concurrent thoracic RT[e]

Sequential Chemotherapy/RT Regimens (Adjuvant)

- Cisplatin 100 mg/m² on days 1 and 29; vinblastine 5 mg/m²/weekly on days 1, 8, 15, 22, and 29; followed by RT[b]
- Paclitaxel 200 mg/m² over 3 hours on day 1; carboplatin AUC 6 over 60 minutes on day 1 every 3 weeks for 2 cycles followed by thoracic RT[f]

Concurrent Chemotherapy/RT Followed by Chemotherapy[**]

- Paclitaxel 45–50 mg/m² weekly; carboplatin AUC 2, concurrent thoracic RT followed by 2 cycles of paclitaxel 200 mg/m² and carboplatin AUC 6[f]
- Cisplatin 50 mg/m² on days 1, 8, 29, and 36; etoposide 50 mg/m² days 1–5, 29–33; concurrent thoracic RT followed by cisplatin 50 mg/m² and etoposide 50 mg/m² x 2 additional cycles (category 2B)[a]

*Regimens can be used as neoadjuvant/preoperative/induction chemoradiotherapy.
**Regimens can be used as adjuvant or definitive concurrent chemotherapy/RT.

National Comprehensive Cancer Network®

NCCN Guidelines Version 4.2016
Non-Small Cell Lung Cancer

CHEMOTHERAPY REGIMENS FOR NEOADJUVANT AND ADJUVANT THERAPY

- Cisplatin 50 mg/m^2 days 1 and 8; vinorelbine 25 mg/m^2 days 1, 8, 15, 22, every 28 days for 4 cycles[a]
- Cisplatin 100 mg/m^2 day 1; vinorelbine 30 mg/m^2 days 1, 8, 15, 22, every 28 days for 4 cycles[b,c]
- Cisplatin 75–80 mg/m^2 day 1; vinorelbine 25–30 mg/m^2 days 1 + 8, every 21 days for 4 cycles
- Cisplatin 100 mg/m^2 day 1; etoposide 100 mg/m^2 days 1–3, every 28 days for 4 cycles[b]
- Cisplatin 75 mg/m^2 day 1; gemcitabine 1250 mg/m^2 days 1, 8, every 21 days for 4 cycles[d]
- Cisplatin 75 mg/m^2 day 1; docetaxel 75 mg/m^2 day 1 every 21 days for 4 cycles[e]
- Cisplatin 75 mg/m^2 day 1, pemetrexed 500 mg/m^2 day 1 for nonsquamous every 21 days for 4 cycles[f]

Chemotherapy Regimens for Patients with Comorbidities or Patients Not Able to Tolerate Cisplatin

Paclitaxel 200 mg/m^2 day 1, carboplatin AUC 6 day 1, every 21 days[g]

Table 4. Commonly Used Doses for Conventionally Fractionated and Palliative RT

Treatment Type	Total Dose	Fraction Size	Treatment Duration
Definitive RT with or without chemotherapy	60–70 Gy	2 Gy	6–7 weeks
Preoperative RT	45–54 Gy	1.8–2 Gy	5 weeks
Postoperative RT			
• Negative margins	50–54 Gy	1.8–2 Gy	5–6 weeks
• Extracapsular nodal extension or microscopic positive margins	54–60 Gy	1.8–2 Gy	6 weeks
• Gross residual tumor	60–70 Gy	2 Gy	6–7 weeks
Palliative RT			
• Obstructive disease (SVC syndrome or obstructive pneumonia)	30–45 Gy	3 Gy	2–3 weeks
• Bone metastases with soft tissue mass	20–30 Gy	4–3 Gy	1–2 weeks
• Bone metastases without soft tissue mass	8–30 Gy	8–3 Gy	1 day–2 weeks
• Brain metastases	CNS GLs*	CNS GLs*	CNS GLs*
• Symptomatic chest disease in patients with poor PS	17 Gy	8.5 Gy	1–2 weeks
• Any metastasis in patients with poor PS	8–20 Gy	8–4 Gy	1 day–1 week

Table 5 NCCN Member Poll: Collated Responses by Institution[a]

Poll Question	Yes (%)	No (%)
Does your institution use EBUS (+/-EUS) in the initial evaluation of the mediastinum and perform the first mediastinoscopy before surgical resection?	16 (80)	4 (20)
Does your institution use pathologic evaluation of mediastinal LNs, after neoadjuvant therapy, to make a final decision regarding surgery?	8.5 (40.5)	12.5 (59.5)
When using neoadjuvant therapy, does your institution use neoadjuvant chemotherapy most of the time?	10.5 (50)	10.5 (50)
When using neoadjuvant therapy, does your institution use neoadjuvant chemoradiotherapy most of the time?	10.5 (50)	10.5 (50)
Does your institution consider surgery in patients with a single LN station < 3 cm?	19 (90.5)	2 (9.5)
Does your institution consider surgery in patients with more than 1 LN station as long as no LN is > 3 cm?	10 (47.6)	11 (52.4)
Does your institution consider surgery in patients with more than one LN station involved, even if the LN is > 3 cm?	3.5 (16.7)	17.5 (83.3)
Does your institution consider neoadjuvant therapy followed by surgery when a patient is likely, based on initial evaluation, to require a pneumonectomy?	11.5 (54.8)	9.5 (45.2)

[a]Twenty-five responses were received from 21 NCCN Member Institutions. Two responses each were received from City of Hope Comprehensive Cancer Center, Roswell Park Cancer Institute, and Fox Chase Cancer Center. Separate responses were received from Dana-Farber Cancer Institute and Massachusetts General Hospital Cancer Center; the same vote counted as 1, a split vote counted as 0.5 in each column.

Martins et al. JNCCN 10.5 (2012): 599-613.

Poll Question

Does your institution use EBUS (+/-EUS) in the initial evaluation of the mediastinum and perform the first mediastinoscopy before surgical resection?

	Yes (%)	No (%)
√	16 (80)	4 (20)

Poll Question

Does your institution use pathologic evaluation of mediastinal LNs, after neoadjuvant therapy, to make a final decision regarding surgery?

Yes (%)	No (%)
8.5 (40.5)	12.5 (59.5)

Poll Question

When using neoadjuvant therapy, does your institution use neoadjuvant chemotherapy most of the time?

Yes (%)	No (%)
10.5 (50)	10.5 (50)

Poll Question

When using neoadjuvant therapy, does your institution use neoadjuvant chemoradiotherapy most of the time?

Yes (%)	No (%)
10.5 (50)	10.5 (50)

Poll Question

Does your institution consider surgery in patients with a single LN station < 3 cm?

Yes (%)	No (%)
19 (90.5)	2 (9.5)

Poll Question

Does your institution consider surgery in patients with more than 1 LN station as long as no LN is > 3 cm?

Yes (%)	No (%)
10 (47.6)	11 (52.4)

Poll Question

Does your institution consider surgery in patients with more than one LN station involved, even if the LN is > 3 cm?

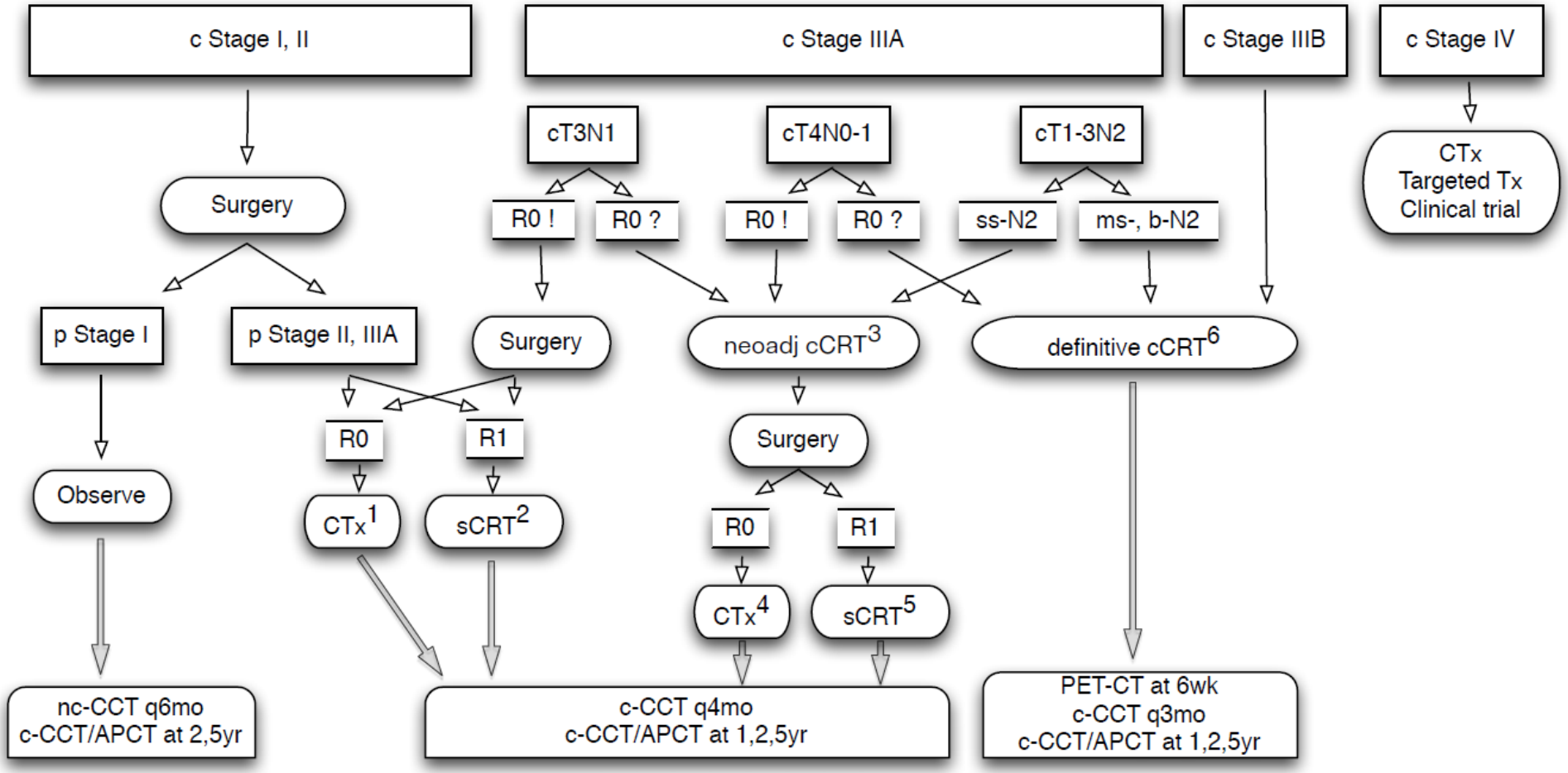
Yes (%)	No (%)
3.5 (16.7)	17.5 (83.3)

√

Poll Question

Does your institution consider neoadjuvant therapy followed by surgery when a patient is likely, based on initial evaluation, to require a pneumonectomy?

Yes (%)	No (%)
11.5 (54.8)	9.5 (45.2)



1 vinorellbine(25mg/m2, D1, 8) /DDP (80mg/m2, D1) every 3 wks 4 cycles
2 vinorellbine(25mg/m2, D1, 8) /DDP (80mg/m2, D1) every 3 wks 4 cycles followed by RTx (54-60Gy)
3 weekly paclitaxel (45mg/m2) carboplatin AUC2 during RTx (45-50Gy)
4 paclitaxel (175mg/m2 D1) carboplatin AUC5 D1 every 3 wks 2 cycles
5 paclitaxel (175mg/m2 D1) carboplatin AUC5 D1 every 3 wks 2 cycles followed by RTx (14-20Gy)
6 weekly paclitaxel (45mg/m2) carboplatin AUC2 during RTx (60-66Gy)

R0 !	R0 resection can be done
R0 ?	R0 resection seems questionable
ss-N2	single station N2
ms-N2	multiple station N2
b-N2	bulky N2 (short axis > 2cm)
sCRT	sequential CRT
cCRT	concurrent CRT
nc-CCT	non-contrast chest CT
c-CCT	contrast chest CT
APCT	contrast abdomino-pelvic CT

Take Home Message

- ✓ Successful managemnet of N2+ stage IIIa NSCLC
- ✓ Pathologic confirm of nodal staging
- ✓ "multidisciplinary" evaluation and management
- ✓ Mediastinal downstaging after induction therapy
- ✓ Complete resection with lobectomy

Thank you for attention !