

가

:

1

2

3

3

:

CT

CT

CT가

CT

: 1997 3

1998 3

51

CT

14

CT

CT

10 mm,

10 mm

CT

3 mm,

3 mm

(American Thoracic Society,

ATS)가

(lymph node mapping scheme)

10 mm

가

: 51

227

188

(station-by-station basis)

10%

CT

CT

32%

53%

(p <

.05)

91% 92%

(p > .05).

CT

CT

7 (subcarinal node)

10R (right tracheobronchial node)

4L

(left lower paratracheal node)

5 (AP window)

(p > .05).

:

가

CT

CT

가

가

CT

CT

가

가

가

CT

가

가

(5, 6).

가

CT

(1-3).

가

(7).

5 (AP window), 6 (anterior mediastinal n-

ode),

7 (posterior subcarinal node)

8 (paraesophageal n-

ode)

가

가

CT

(4).

5 (AP window), 7 (subcarinal node)

CT

CT

(8, 9)

1

2

3

CT

1999 10 8

2000 3 17

CT

5 (AP window), 7 (subcarinal node)

가

CT

CT

CT가

Somatom Plus-S (Siemens Medical Systems, Erlangen, Germany) (Iopamiro 300 [iopamidol]; Bracco, Milano, Italy) 100 ml 10 mm, pitch 1

CT 10 mm

0-30 ( 14 ) CT (aortic knob) 1.5 cm (carina) 5.5 cm

CT 3 mm, pitch 1.3

ml/sec 50 ml

13 3 mm

1 2 5 15 ml 2.5 ml/sec

40 85 63

가 40 가 11

26 , 17 , 5 ,

3 , 12 , 5

9 , 9 , 14 2

CT

CT

1- (ATS)가 (lymph node)

Table 1. Prevalence of Mediastinal Lymph Node Metastasis from Non-small Cell Lung Cancer according to Nodal Stations

	Total	4R	4L	5	6	7	10R	10L
Total number of nodal stations	188	33	22	27	14	50	23	19
Number of stations with metastasis	19	4	0	2	0	7	5	1
Prevalance(%)	10	12	0	7	0	14	22	5

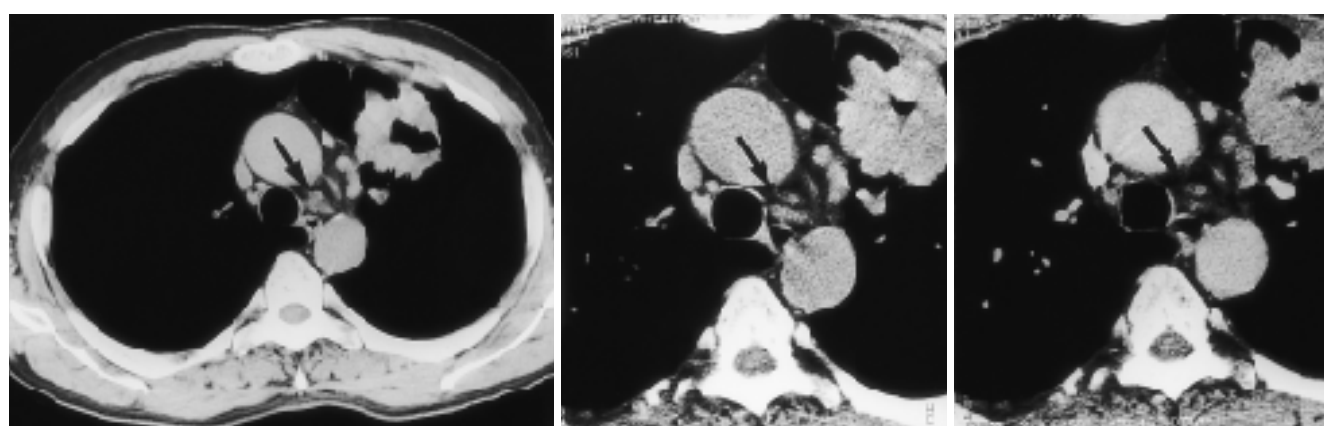


Fig. 1. Squamous cell carcinoma in 62-year-old man.

A. Enhanced conventional CT scan obtained at aortopulmonary window level shows a large cavitory mass in the left upper lobe. There is an enlarged left lower paratracheal lymph node (arrow) more than 10 mm in short axis diameter.

B, C. Pre- and postcontrast enhanced thin-section spiral CT scans obtained at the same level show two small lymph nodes (arrow) less than 10 mm in short axis diameter at left lower paratracheal area. There was no metastatic lymph node at this area on pathologic specimens.

mapping scheme)

(10).

(Table 3).

CT

CT

4R/4L (lower paratracheal node), 5 (AP window), 6 (anterior mediastinal node), 7 (subcarinal node), 10R/10L (tracheobronchial node)

ue)

(positive predictive value)

10 mm

가

CT

가 2 ,

CT

가

CT

가 2

가

가

(negative predictive value)

CT

CT

가

가

가

가 4 (Fig. 1),

CT

CT

CT

가 2 (Fig. 2)

가 (Table 5).

CT

CT

CT

McNemar's test

p &lt; .05

가

CT

가

Naruke (11)

1737

5

N0 58.3%, N1 40.4%, N2 13.8%, N3

0%

가

가

CT

가

가

CT

51

267

(

5.2)

CT

91-92%

227

(

4.4)

CT

188

188

19

10%

(Table 1).

188

CT

CT

Table 2

CT

53%

CT

32%

(p = .046)

92%

91%

가

(p = .314).

CT

CT

7 (subcarinal node) 10R (right tracheobronchial node)

가,

4L (left lower paratracheal node) 5

(AP window)

가

Table 2. Correlation of CT with Pathology in Diagnosing the Mediastinal Lymph Node Metastasis

	Pathology		
	Positive	Negative	Total
<b>Thick-section Spiral CT</b>			
Positive	6	16	22
Negative	13	153	166
Total	19	169	188
<b>Thin-section Spiral CT</b>			
Positive	10	13	23
Negative	9	156	165
Total	19	169	188

Table 3. Comparison of Accuracy of CT in Detection of Mediastinal Lymph Node Metastasis according to Individual Nodal Stations

	Total		4R		4L		5		6		7		10R		10L	
	C*	T*	C	T	C	T	C	T	C	T	C	T	C	T	C	T
Sensitivity(%)	32	53	50	50	0	0	50	50	0	0	43	57	0	20	0	0
Specificity(%)	91	92	86	86	82	95	84	96	100	100	98	91	83	83	95	95
Accuracy(%)	85	88	82	82	81	95	81	93	100	100	90	86	65	70	95	95

C\* = Thick-section Spiral CT, T\* = Thin-section Spiral CT

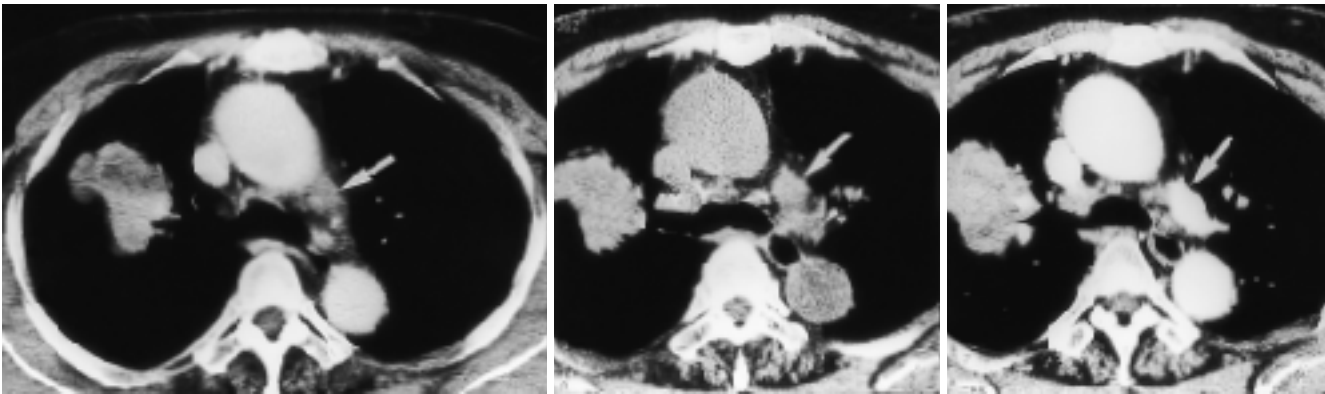


Fig. 2. Squamous cell carcinoma in 68-year-old man.  
A. Enhanced conventional CT scan obtained at carinal level shows a large mass in right upper lobe. At aortopulmonary window, there is an enlarged lymph node (arrow) more than 10 mm in short axis diameter.  
B, C. Pre- and postcontrast enhanced thin-section spiral CT scans obtained at the same level show that superior aspect of main pulmonary artery (arrow) is misinterpreted as an enlarged lymph node on conventional CT due to partial volume effect. There was no enlarged lymph node at this area on pathologic specimens.

Table 4. Factors Improving Positive Predictive Value of Thin-section Spiral CT in the Evaluation of Mediastinal Lymph Node Metastasis

	5	7	10R	Total
Vessel discrimination	1	0	1	2
Larger LN	0	2	0	2
Total	1	2	1	4

Table 5. Factors Improving Negative Predictive Value of Thin-section Spiral CT in the Evaluation of Mediastinal Lymph Node Metastasis

	4L	5	Total
Small LN aggregation	2	2	4
Vessel discrimination	1	1	2
Total	3	3	6

(12, 13), CT 가 ,  
21-61% 가  
(1-3).  
가  
(1).  
CT 32% McLoud (1)  
44% 가 4.4 McLoud (1)  
2.8 가 CT 가  
CT 91% 가  
CT 가 53% CT 32% CT  
53% CT 가  
가 CT  
CT

CT 가 ,  
92% CT 91% 가  
4L (left lower paratracheal node) 5 (AP window)  
CT 가  
가 CT  
10 mm 가  
CT 가  
CT 10 mm 가  
10 mm 3 CT 가  
CT

가

CT

가

CT

CT

7 (subcarinal node)

가

CT

12 mm

가

10 mm

CT

가

CT가

CT

가

가

가

CT

4L, 5,

7

가 N2

N3

CT

CT

CT

가

CT

가

CT

가

4R (right lower paratracheal node), 4L (left lower paratracheal node), 6 (anterior mediastinal node)

CT

가

CT

가

CT

10 mm

CT

CT

가

CT

가

가

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## **The Usefulness of Thin-Section Spiral CT in the Evaluation of Mediastinal Lymph Node Metastasis from Non-Small Cell Lung Cancer: A Prospective Study and Comparison with Thick-Section Spiral CT<sup>1</sup>**

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**Purpose:** To compare the accuracy of thick-and thin-section spiral CT and to determine whether, in diagnosing mediastinal lymph node metastasis from non-small cell lung cancer, the latter is superior to the former.

**Materials and Methods:** Between March 1997 and March 1998, 51 patients with pathologically proven non-small cell lung cancer underwent thoracotomy with full nodal dissection. Thick- and thin-section spiral CT were performed in all patients, with a mean interval of 14 days. The former was performed with 10 mm thickness and 10 mm interval, and the latter with 3 mm thickness and 3 mm interval. Mediastinal lymph nodes were localized according to the lymph node mapping scheme of the American Thoracic Society and were considered positive for metastasis if they exceeded 10 mm in short-axis diameter.

**Results:** A total of 227 mediastinal nodal stations in 51 patients were obtained. Of these, 188 stations included in thin-section spiral CT were analyzed and the prevalence of mediastinal nodal metastasis was found to be 10%. On a station-by-station basis, and for thick- and thin-section spiral CT, respectively, the overall sensitivities of mediastinal lymph node metastasis were 32% and 53% ( $p < .05$ ), while specificities were 91% and 92% ( $p > .05$ ). Although there were no statistically significant differences in sensitivity and specificity according to nodal station, thin-section spiral CT tended to be superior to the thick-section type for stations 7 and 10R in terms of sensitivity, and for stations 4L and 5 in terms of specificity.

**Conclusion:** Thin-section spiral CT was more sensitive than thick-section spiral CT in the evaluation of mediastinal lymph node metastasis from non-small cell lung cancer. This may be due to the higher resolution of the former and its ability to discriminate between lymph node and vessel.

**Index words :** Lung neoplasms, CT  
Lung neoplasms, staging  
Mediastinum, neoplasms

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