MULTIPLE PRIMARY LUNG CANCER WITH LARGE CELL CARCINOMA AND ADENOCARCINOMA : A CASE REPORT AND A REVIEW OF THE JAPANESE LITERATURE

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Abstract : We experienced a case of synchronous multiple lung cancer developed in the right middle and lower lobe in a 69-year-old male. The patient was admitted to our hospital to undergo further examinations of abnormal shadows on his chest X-ray films. A transbronchial lung biopsy revealed squamous cell carcinoma in S⁴ and adenocarcinoma in S⁶. A pneumonectomy was performed and his postoperative course was uneventful. The final histologic diagnosis was large cell carcinoma in S⁴ and adenocarcinoma in S⁶. We report this case because it represents a rare histologic combination.

Key words : Primary multiple lung cancer, Large cell carcinoma, Adenocarcinoma, Differential diagnosis

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INTRODUCTION

Multiple lung cancer is becoming increasingly common due to an increase of lung cancer in general and further development of diagnostic techniques. As a histologic combination, a couple of squamous cell carcinoma were seen in more than 75% of multiple lung cancers¹⁾. We present herein a case of synchronous multiple lung cancer with adenocarcinoma and large cell carcinoma.

CASE REPORT

A 69-year-old man was referred to our hospital with a three-month history of cough and abnormal shadows on his chest roentgenograms. On admission, although there were no abnormal finding in laboratory data and tumor markers, respiratory sound was weak on the right chest.

A chest roentgenogram (Fig.1) and computed tomogram (Fig.2) of the chest showed two nodular shadows in the right lung: the former was in S⁴, 10×9 cm in diameter with consolidation, and the latter was

Fig. 1 Chest X-p on admission showing abnormal shadows in the right lower lung field and hilar region.

in S⁶. The mass was irregularly shaped with spiculation and 2×2 cm in diameter. There was a positive lymph node in the interlobar region (# 11s). Bronchos-

Fig. 2 Chest CT on admission showing a large mass shadow with consolidation in S⁴ (a) and an irregular shadow with spiculation in S⁶ (b).

Fig. 3 Cut surface of the resected lung showing as follows : a 8.8×7.3×6.7cm-sized mass in S⁴ (a), and a 2.0×1.7×1.2cm-sized mass with anthracosis and pleural retraction in S⁶ (b).

Fig. 4 Histologic findings of tumors in S⁴ and S⁶ showing large cell carcinoma without mucin (a, HE×50) and moderately differentiated adenocarcinoma, respectively (b, HE×50).

copic examination revealed a nodular mass originating from B⁴, which resulted in the narrowing of the intermediate bronchus. A transbronchial biopsy revealed poorly differentiated squamous cell carcinoma at B⁴, and moderately differentiated adenocarcinoma in S⁶. Synchronous multiple primary lung cancer with metastasis to interlobar lymph nodes (T2N1N0, stage II) was diagnosed and followed by surgical intervention.

The chest was opened through a right posterolateral thoracotomy via the fifth costal floor. Because the mass of the middle lobe had invaded the lower lobe and the interlobar lymph nodes (#11s) were invading

the right pulmonary artery, a right pneumonectomy with mediastinal lymph node dissection was performed.

In the resected specimens, a tumor, 8.8×7.3×6.7mm in size, in S⁴ (Fig.3a) and a tumor, 2.0×1.7×1.2mm in size, in S⁶ (Fig.3b) were identified. Pathologic examination showed large cell carcinoma originating from the S⁴ (Fig.4a) and moderately differentiated adenocarcinoma arising from the S⁶ (Fig.4b). There was interlobar lymph node metastasis from the large cell carcinoma. The final histologic diagnosis was synchronous multiple primary lung cancer (T2N1M0, stage II)

of large cell carcinoma and adenocarcinoma.

The patient's postoperative course has been uneventful with no evidence of recurrence 8 months after the operation.

DISCUSSION

Squamous cell carcinoma (SQ) is observed in more than 75% of histologic combinations of multiple lung cancer; for example, SQ-adenocarcinoma and SQ-SQ³⁻⁵⁾. The frequency of large cell carcinoma (LCC) was reported to be 6 to 10.4% of primary lung cancer^{6,7)}. The diagnosis of LCC is frequently obtained in a series of negative findings and admixed with other types of cells even in minor amounts. Thus, LCC is often excluded in the pathologic diagnosis. Therefore, the combination of LCC and adenocarcinoma was rarely reported as multiple lung cancer in 13 Japanese cases (Table 1). In previously reported patients including ours, the age ranged from 29 to 74 years old, and the majority of cases occurred in males (93%). There were 12 synchronous cases and 2 metachronous cases. The tumors occurred in the ipsilateral lung: 7 in different lobes and 7 in the same lobe. The median survival is 34 months with 28.6% of the cases having a

5-year survival.

LCC has no squamous or glandular differentiation and none of the distinctive histologic features of small cell carcinoma. Therefore, it is difficult to distinguish from poorly differentiated SQ or adenocarcinoma. Churg et al⁸⁾ reported that a case diagnosed as LCC had undifferentiated structures of SQ or adenocarcinoma ultrastructurally. Indeed, since LCC could be regarded as an undifferentiated tumor with a differentiated potential to the other histologic types⁹⁾ a differential diagnosis was difficult in the present case. However, we obtained our final diagnosis from three sources; first, occasional LCC showed a typically histologic picture, second, it was improbable that the tumor cells metastasized from S⁴ to S⁶ via the interlobar lymph node (#11s) along the lymphatics, and third the histologic diagnosis was determined using the greatest dimension of the resected specimen.

Several authors^{2,11)} reported that the 5-year survival of synchronous multiple lung cancer was 28% to 62%. In the present case, a complete resection was possible. However, A third lung cancer is reported to occur in approximately 10% to 30% of patients after surgery^{12,13)} suggesting that intensive follow-up is manda-

Table 1 Reported cases of primary multiple lung cancer with large cell carcinoma and adenocarcinoma in Japan.

No.	Published year	Reference	Author	Age	Gender	Sync/metac	Site	Histological Type	Surgical Procedure	pTNM	Outcome (month)
1	1982	11)	Tanimura	62	M	Sync	rS1 rS10	LCC Ad	Pneumonec	—	D (10)
2	1983	4)	Higashiguchi	71	M	Sync	IS1+2 IS8	LCC Ad	Wedge	T2N0M0 T2N0M0	A (10)
3	1984	Jpn J Chest Dis 43: 63-69	Namikawa	73	M	Sync	lU lL	LCC Ad	Partial	—	D (11)
4	1988	Jpn J Chest Dis 47: 397-401	Morikage	68	M	Sync	—	LCC Ad	Operation	—	D (14)
5	1988	Jpn J Chest Dis 47: 564-572	Nishiyama	29	F	Sync	rS8 rS6	Ad LCC	Pneumonec	T3N2M1 T3N0M0	D (5)
6	1989	J Jpn Assn Thorac Surg 37: 56-61	Nishiyama	68	M	Sync	—	LCC Ad	lUL	T3N2M0 T1N0M0	D (16)
7	1991	JJSB 13: 275-281	Tatsumi	48	M	Metac	Carin a rU	LCC Ad	R partial	—	A (91)
8	1991	JJSB 13: 275-281	Tatsumi	59	M	Sync	rU rU	Ad LCC	rUL	—	A (3)
9	1991	JJSB 13: 275-281	Tatsumi	58	M	Metac	rU rM	LCC Ad	R rML	—	A (23)
10	1991	Lung cancer 31: 41-46	Kotake	74	M	Sync	lL lL	LCC Ad	lLL	T2N0M0 T2N0M1	D (22)
11	1991	JJSB 14: 751-755	Takada	58	M	Sync	rU rL	LCC Ad	rUL+ partial	T2N2M0 T2N1M0	D (7)
12	1995	3)	Hirai	69	M	Sync	rS6 rS8	Ad LCC	Lobec	T1N0M0 T1N0M0	D (6)
13	1995	3)	Hirai	66	M	Sync	rS6 rS9	Ad LCC	Lobec	T2N0M0 T2N3M0	A (40)
14	this case		Kamiyoshihara	69	M	Sync	rS4 rS6	LCC Ad	Pneumonec	T2N1M0 T1N0M0	A (3)

JJSB: Journal of the Japan Society for Bronchology, M: male, F: female, Sync: synchronous, Meta: metachronous, rU: right middle lobe, rL: right lower lobe, lU: left upper lobe, lL: left lobe, rS: right segment, lS: left segment, LCC: large cell carcinoma, Ad: adenocarcinoma, Pneumonec: pneumonectomy, Partial: partial resection, Wedgr: wedge resection, UL: upper lobectomy, Lobec: lobectomy, R: radiotherapy, A: alive, D: dead

tory.

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