

Surgery for Multiple Primary Cancer Involving the Lung

Masao TOMITA, Hiroyoshi AYABE
Katsunobu KAWAHARA and Yutaka TAGAWA

*The First Department of Surgery, Nagasaki University School of Medicine
Nagasaki, Japan*

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ABSTRACT: Surgical treatment for synchronous multiple primary cancer involving the lung was evaluated on the basis of clinical experience with the treatment of three patients. It is emphasized that careful clinical examination to prevent overlook of second tumor is needed for promising favorable outcome of multiple primary cancer.

INTRODUCTION

Occurrence of metachronous double cancers is now increasing in accordance with prolonged survival time following treatment for carcinomas. On the other hand, synchronous double cancers are frequently detected with advances in diagnostic techniques. High incidence of double cancers enables us to pay more careful attention to precise diagnosis and meticulous treatment for patients with carcinoma. Needless to say, definition of double cancers is that two different cancer lesions are metachronously or synchronously present in the same host, not only occur accidentally but associate with the states of a host. A few clinical experiences with the treatment for synchronous double cancer provide a good chance to consider the surgical significance for double cancer.

The purpose of this study is to clarify the values of surgical treatment for synchronous double cancer on the basis of our clinical experience.

PATIENTS

During the past ten years from January 1980 to December 1989, three patients who had concomitantly existing double cancer involving the lung were surgically treated for both cancers at the First Department of Surgery, Nagasaki University Hospital. The ages ranged from the fifth to the seventh decades as shown in **Table 1**. Lung cancers were detected in two on the left side and one on the right side. The histologic patterns of lung cancer were adenocarcinoma, adenosquamous carcinoma and squamous cell carcinoma in each one case respectively. These were Stage III(N₂) in Case

Table 1. 3 Cases of double cancer (operated at the same time)

No. Case	Age	Sex	lung cancer		other cancer			ope. date	Prognosis
			ope.	Histology	site	ope.	Histology		
1. N.K.	58	M	S6 Seg.	sq.	Rectum	Miles' ope.	adeno.	'83.8.24	5M death
2. T.M.	64	M	LUL	adeno.	Lt. kidney	nephrectomy	renal cell ca.	'88.2.23	1Y6M alive
3. C.K.	73	M	LS1+2+3 Seg.	adenosq.	Stomach	gastreotomy	adeno.	'89.4.24	3.5M alive

1 and 3 and Stage I in Case 2. The second tumors were seen in the rectum (Stage I), kidney (Stage I, not extending the capsula) and stomach (Stage III involving the serosa and regional nodes). These histologic patterns were adenocarcinoma, renal cell carcinoma and adenocarcinoma respectively. The chances of detecting these diseases were offered from the onset of symptoms related to the second tumor. The lung cancer in Case 1 was detected as a primary tumor, the other two cancers were detected under the suspicion of metastatic lung tumor. Rectal cancer in case 1 was accidentally found out by preoperative examination.

The general conditions in these three cases were satisfactory to achieve a combined resection of double cancers. Aseptic operation of pulmonary resection was first selected, followed by abdominal and/or retroperitoneal approaches.

In this series, curative and relatively curative operations including distant node dissection were performed on all patients.

The surgical outcomes were not satisfactory. Early death within one year following surgery included one case of case 1, and the other two patients were now going on follow-up study. However, it seemed that the grades of disease stage seems to relate to the prognosis.

DISCUSSION

The occurrence of double cancer involving the lung have been reported as being 17%¹⁾ to 4.5%^{2, 3)}. With respect to the age, Nishiki⁴⁾ reported that the average age of multiple primary cancers involving the lung was 67 years old, although that of single cancer was 60. We must take it into consideration that our subjects of double cancer were the operated cases, but the autopsied cases were cases of single cancer.

It is accepted that the stomach and the colon are more often involved in association with double cancers involving the lung. It also is believed that squamous cell carcinoma is predominant in multiple primary cancers involving the lung.

In general, multiple primary cancer is called in accordance with the appearing time of double cancer, synchronous or metachronous. In this

series, the surgical treatment and prognosis of synchronous multiple primary cancer involving the lung was evaluated on the basis of our clinical experience. It is not easy to determine the indication of one stage or two stage operative procedures, which depends on the patient's condition, disease extension of double cancer, and the degree of surgical stress including surgical curability.

Ferguson⁵⁾, Mathisen⁶⁾ and Struve-Christensen⁷⁾ recommended aggressive surgical treatment for a better outcome of multiple primary cancer. Temeck⁸⁾ emphasized that physicians pay attention to more frequent occurrence of second primary cancer in continued and careful follow-up survey following the treatment for the first primary tumor.

Chaudhuri⁹⁾ believes it is necessary for the two tumors of double cancer which have dissimilar histopathologic characteristics to be considered as independent primaries. Others cite the certain time interval of 30 to 36 months is required for multiple primary cancer so as to neglect a metastatic tumor. However, it is only in recent years that the occurrence of second and third lung primaries have been reported^{11, 12)}, and it is argued that aggressive surgical approach for these tumors is not precluded.

The poor outlook of synchronous primaries was reported by Mathisen⁶⁾ as well as our series. This is in contrast to a 28% five-year survival of patients with synchronous multiple primary lung cancer in the Memorial Sloan-Kettering series¹³⁾.

We believe that better outcome for synchronous primaries is in association with early detection in the early disease stage. Early detection and early treatment promise physicians to get better results of the surgical treatment of multiple primary cancer.

REFERENCES

- 1) Mitchel RI: Multiple primary cancers involving the lung. *The Canadian Journal of Surgery* 22: 54-68, 1979.
- 2) Naruge H: Double cancer involving the lung. *Lung Cancer* 13:60, 1973.
- 3) Rohwedder J.J., Weatherbee L: Multiple primary bronchogenic carcinoma with a review

- of the literature. *Am. Rev. Respir. Dis.* **109**:435-445, 1974.
- 4) Nishiki, M, Kataoka T: A study of multiple primary malignant neoplasma associated with lung cancer. *Hiroshima Jjournal of Medical Sciennce.* **33**: 447-453, 1984.
 - 5) Ferguson MK, De Meester TR, Des Lauriers J, *et al* : Diagnosis and management of synchronous lung cancers. *J. Thrac. Cardiovasc. Surg.* **89**: 378-385, 1985.
 - 6) Mathisen DJ, Jensik RJ, Faber LP, *et al* : Survival following resection for second and third primary lung cancers. *J. Thorac. Cardiovasc. Surg.* **88**: 502-510, 1984.
 - 7) Strure-Christensen E: Diagnosis and treatment of bilateral primary bronchogenic carcinoma. *J. Thorac. Cardiovasc. Surg.* **6**: 501-513, 1971.
 - 8) Temeck BK, Flehinger BJ, Martin N: A retrospective analysis of 10 year survivors from carcinoma of the lung. *Cancer* **53**: 1405, 1984.
 - 9) Chaudhuri MR: Independent bilateral primary bronchial carcinomas. *Thorax* **26**: 476-480, 1981.
 - 10) Legal Y, Bauer WC: Second primary bronchogenic carcinoma. A complication of successful lung cancer surgery. *T. Thorac. Cardiovasc. Surg.* **41**: 114-124, 1961.
 - 11) Martine N, Melamed MR: Multiple primary lung cancers. *J. Thorac. Cardiovasc. Surg.* **70**: 606-612, 1975.
 - 12) Smith RA, Nigam BK, Thompson JM: Second primary lung carcinoma *Thorax* **31**: 507-516, 1976.
 - 13) Struve-christensen E: Diagnosis and treatment of bilateral primary bronchogenic carcinoma *J. Thorac Cardiovasc. Surg.* **62**: 501-513, 1971.