*Chinese Journal of Cancer Research 8(2): 132 — 134, 1996*

# THE RESULT OF RE-RESECTION FOR LUNG CANCER

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**In the study 38 cases of primary lung cancer with postoperative recurrence and metastasis or second primary lung cancer, re-resection was performed. The time interval between the first operation and re-resection was 2 months — 9 years. The resectivility rate was 89.5%. Postoperative complication rate was 23.7% and the operative mortality rate within 1 months was 5.3%. With radical re-resection 1-, 3-, 5- year survival rate were 80%, 45.8% and 35% respectively. The survival time depends more on the thoroghness of resection than on the histologic type of the tumor and the time interval. It is of the opinion that wherever recurrence and/or metastasis occur. Radical re-resection is the treatment of choice.**

**Key words: Lung cancer, Pulmonectomy, Re-resection**

Literatures about the recurrence, metastasis or the second primary lung cancer after primary lung cancer resection and the results of re-resection were scant. 38 cases of re-resection for lung cancer had been performed in our department, during Mar. 1974 — Dec. 1992. Here we present the results of re-resection, and discussions about surgical indications, early diagnosis and therapy as follow.

## CLINICAL DATA

### Gneral Data of 38 Cases

Accepted February 12, 1996

In this group, male 30, female 8 cases with the ratio 3.7:1. Age: 43 — 75 years old. 21 cases (52.9%) >60 years old.

### Courses about First Operation

All cases had been taken operation for primary lung cancer with squamous cells 22, adenous 14, adenosquamous mixed type and undifferentiated small cells 1 case respectively, and lobectomy 34 (including two lobes 1, sleeve resection of right upper lobe 1 case), segmental or wedge resection of the mass 2 cases respectively.

All cases were taken a regular chemotherapy after operation, except 3 cases, whose bronchial stumps were verified pathologically to be involved by cancer cells, were added with radiotherapy.

### Data about Re-resection

The duration between primary and re-resection: 2 months- 9 years with mean 28.4 months. >3 years in 18 cases.

Symptoms and signs: Cough 13, bloody-tinged sputum 10, chest pain and fever 5 cases respectively, asymptomatic 12 cases.

Chest roentgenogram shows mass shadow in lung 24 cases. Positive findings by fibroptic bronchoscopy 13, from debris cells of sputum 15 cases respectively.

Pre-operation lung function and E.C.G examination: Among 38 cases, MVV, VC<60% in 3 cases, Pa02<9.3Kpa 1 case, E.C.G abnormal 6 cases (with high potential of left ventricle 3, low potential,

premature of auricular or ventricular occasionally 1 case respectively).

Modes of operation: residual lung resection 24 cases, among them, radical 16, palliative 8 (due to bronchial stump invaded by cancer cells 4, residual metastatic lymph modes of mediastinum 2, or chest wall invaded by cancer cell 1 case, in form of nodular-like spread extensively in the thorax 1 case). Management of lung vessels via pericardium 10 cases, lobectomy 4 (co-or heterolateral 1 or 3 cases), segmental 1, tumor wedge resection 5, thoracotomy 4 cases (due to metastasized lymph nodes of hilum and mediastinum).

Blood loss during operation 100 — 9500 ml, of them, >1000 ml in 18 cases; postoperative 48 hr draninage 100 — 1700 ml, of them, >500 ml in 20 cases.

Postoperative complications: 9 cases (24%), among them, respiratory failure 4 ventialtor (complicated with hemorrhagic shock 1, spontaneous pneumothorax co-lateral 1); empyemas 2 (one with BPF); peptic hemorrhage 1; distant metastasis 2 cases. Most of them healed after treatment, 2 cases died of metastasis of brain or bone in late postoperation stage.

Postoperative survival rte: 36 cases were follow up after discharge for 6 months-13 years. The survival rate for 1,3,5 years were 68% (25/37), 32% (11/34) and 25% (6/24) respectively. As to the radical resection group they were 80% (20/25), 46% (11/24) and 35% (6/17) respectively.

## DISCUSSION

The resectable rte of these 38 re-resection cases of 85% was similar to those of primary lung cancer resection.[1] The incidence rate of postoperative complication of 24% and mortality in late stage of 5% were similar to those of general pneumonectomy patients.[2] Therefore, indications for re-resection should be taken actively to those cases with recurrence, metastasis or the second primary lung cancer after primary lung cancer resection at the conditions with the possibility for radical resection, capable cardiopulmonary function and no distant metastasis of cancer cells. Wedge resection are suitable for those cases with tumor which is smaller and nearby the lung surface. 5 cases of our group taken wedge resection had alived 6.5 years maximally. Usually, it is necessary to have to manage vessels via pericardinum, for re-resection of lung cancer, especially for the residual lung (10 cases, 26% of this group). Because, after postoperative chemo-or radiotherapy, the hilum may be frozed by metastatic lymph nodes of hilum and mediastinum and/or fibrosis and scar formation around them. BPF was easily complicated by malhealing of the bronchial stump, following radiotherapy.

After the first operation, the pleural space may become so extensive adhesion that it made difficult to separate, and cause massive bleeding during the second operation and/or postopertive drainage.

All causes discussed above made the re-resection more difficultly and had dangerous with high incidence of postoperative complication which was 24% of this group, even more than 30% in other report.[3] Therefore, it is necessary to keep closely attention to; (1) Stop bleeding during operation and prevent secondary bleeding after operation; (2) technique of suture, cover the bronchial stump with its surrounding tissue for preventing BPF; and (3) intensive monitoring for early discovery and treatment of lessen-postoperative complications.

The results show that the survival time after re-resection of lung cancer was closely related with whether the radical resection was performed, but less with cells type of cancer or the intervals between two operations. The survival rate of radical re-resection cases for 1, 3, 5 years were 80%, 46%, 35% respectively, and were similar to those resected cases of primary lung cancer.[1] For palliative resection and thoractomy cases, the survival rats were lower, among 8 palliative resection and 4 thoracotomy cases, none was alive more than 2 years. 4 of 8 palliative resection cases have the bronchial stumps invaded by cancer cells, all bronchial stumps should be taken for frozed slide examination routinely. If a positive result is present, an extensive resection including various tracheo or bronchoplasty should be performed as possible to prevent the cancer invasion of the stump.

In order to elevate the re-resectadble rate of lung cancer from the recurrence of metastasis cases, early diagnosis and re-resection in time are very important. It must to pay great attentin to cough, bloody-tinged sputum and chest pain etc. Usually, bronchoscopy and examinatiion of debris cells of sputum should make a definite diagnosis. 28 cases of this group (79%) were shown positive results. Regular pastoperative follow-

up is nessesary. Roentgengraph of chest is useful for early diagnosis. 12 cases of this group were asymptomatic, but present a shadow in lung. In this group the duration betweeen the first operation and re-resection of 11 cases were more than 5 years with maximum 9 years. In summary, after opertion a long-term follow-up to all cases with lung cancer was necessary for early diagnosis and the aims of elevating the re-resectable rate and surgical therapeutic effect.

The cases died within 6 months after re-resection were due to distant metastasis, but the metastasis can't be rule out before operation, as lacking evidence by CT and ECT of liver, and brain ect. Therefore, CT and ECT examination of main organs are necessary before taking re-resection of lung cancer.

Combination therapy should be performed for all cases. Chemotherapy or chemo-radiotherpy, supplement with immuno- intensive drugs should be given postoperatively to elevate the survival rate of thesse patients.

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