Bronchoplasty in Lung Cancer

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Key words: Lung cancer, Bronchoplasty

Introduction

The number of lung cancer which were surgically treated in Persahabatan Hospital was increased lately. During 20 years period from 1970-1990 there were 169 lung cancer patients who conducted surgical treatment, meanwhile from 1991-1995 there were 76 lung cancer patients were operated[1]. Some of the patients were approached by bronchoplasty. By this approach it is expected to have complete resection of the tumor and the lung function could be preserved as much as possible[2].

This paper will report the type of bronchoplasty and the survival of life among the bronchoplasty treated lung cancer.

Material and Method

A retrospective study was conducted among lung cancer patients with bronchoplasty treatment. The study included patients from 1991-1996. Post operative staging using TNM System was applied. All patients got radiation and cytostatic following surgical treatment. The patients were followed up to the outpatients clinic for them who live in Jakarta. For the patients who live outside Jakarta the follow up was by letters. The death of the patients was reported to Persahabatan Hospital by the family.

Result

There were 11 lung cancer patients who underwent bronchoplasty at Persahabatan Hospital during period 1991-1996. The type of bronchoplasty was shown in Table 1. Lobectomy and wedge resection of bronchus was more frequently done than other approaches. It is especially performed on tumor which infiltrated only partial of the lumen of bronchus.

The age of the patients were shown on Table 3. Most of the patients were over 40 years old.

Atelectasis as the complication of bronchoplasty was encountered only in two patients. No

Table 1 The type of Bronchoplasty in lung cancer treatment at Persahabatan Hospital(1992-1996)

<table>
<thead>
<tr>
<th>Type of Operation</th>
<th>Number of Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleeve Pneumectomy</td>
<td>1 patient</td>
</tr>
<tr>
<td>Sleeve Lobectomy</td>
<td>3 patients</td>
</tr>
<tr>
<td>Lobectomy + Wedge Resection of Bronchus</td>
<td>5 patients</td>
</tr>
<tr>
<td>Pneumectomy + Tracheoplasty(Partial Tracheal resection and Bronchial Flap)</td>
<td>2 patients</td>
</tr>
<tr>
<td>Total</td>
<td>11 patients</td>
</tr>
</tbody>
</table>

Table 2 Pathology type and Stage of the Cancer with Bronchoplasty treatement(1991-1996)

<table>
<thead>
<tr>
<th>Pathology type</th>
<th>Stage of the Cancer</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidermoid Ca</td>
<td>T3 T2 M0</td>
<td>3 patients</td>
</tr>
<tr>
<td></td>
<td>T2 N2 M0</td>
<td>3 patients</td>
</tr>
<tr>
<td></td>
<td>T1 N2 M0</td>
<td>1 patient</td>
</tr>
<tr>
<td>Adeno Ca</td>
<td>T4 N2 M0</td>
<td>2 patients</td>
</tr>
<tr>
<td></td>
<td>T3 N2 M0</td>
<td>1 patient</td>
</tr>
<tr>
<td></td>
<td>T2 N2 M0</td>
<td>1 patient</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11 patients</td>
</tr>
</tbody>
</table>

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bronchofistula was found during this observation (Table 4).

The survival of life after treatment was found in Table 5 where epidermoid carcinoma had a better survival of life than adenocarcinoma. Epidermoid carcinoma is most likely to be resectable and is associated with the better prognosis.

Discussion

The technique lobectomy and wedge resection is simpler compared to sleeve lobectomy and better vascularization on the anastomosis side was expected.\(^\text{34}\)\(^\text{4}\)

The technique of pneumonectomy and partial resection of trachea (bronchial flap) is also simpler than sleeve pneumonectomy. This technique was used in tumor which partially infiltrated the tracheobronchial lumen.\(^\text{5}\)

Pericardial flap on the anastomosis side was used in 5 patients. The other patients were without any flap.

Although there is no significant different between the 2 methods, but I like to use the flap. The stages of lung cancer were mostly stage IIIA-IIIB (N2 positive) (Table 2).

This stages were advanced stages. This stage was frequently found in our hospital, because mass survey of the lung which could detect early stage cancer is not done routinely. As lack of the early detection, only 10% of lung cancer could be resected, the rest were inoperable. For the patients stage IIIA radiotherapy and chemotherapy were given as adjuvant therapy following the operation.\(^\text{67}\)\(^\text{7}\). A 3 years survival rate is about 75% for stage IIIA patients. But many of these stage IIIA are T3N0M0. In the new classification these T3N0M0 are recomended to stage IIIB.\(^\text{8}\)

Preoperative radiotherapy and chemotherapy (neoadjuvant therapy) was administied to the stage IIIB patients. By this policy there are 2 patients who still alive 2 years after operation. In these two patient I only did standard ressection (lobectomy) I did not find complication of standard resection after radiation but I do not recommend to do bronchoplasty after radiation.

Summary

Of 11 lung cancer patients who underwent bronchoplasty, there was no serious complication observed. The survival of life in epidermoid carcinoma was better than adenocarcinoma.

REFERENCES

1) Busroh, Ismid D.I. Surgical management of massive hemoptysis. Joint Congress the 14th Asia Pacific on Disease of the chest and The 7th Congress of the Indonesian Asseciatng of Pulmonologist, June 1996, Denpasar, Bali.


5) Koyama A. Personal communication.


Abstract

In the last 5 years bronchoplasty has been conducted among lung cancer patients which consist of:

- Sleeve pneumectomy: 1 patient
- Sleeve lobectomy: 3 patients
- Lobectomy + wedge resection of bronchus: 5 patients
- Pneumectomy + tracheoplasty (partial tracheal resection + bronchial flap): 2 patients

The type and stages of the cancer were as follows:

**Epidermoid Ca**
- T3 N2 M0: 3 patients
- T2 N2 M0: 3 patients
- T1 N2 M0: 1 patient

**Adeno Ca**
- T4 N2 M0: 2 patients
- T3 N2 M0: 1 patient
- T2 N2 M0: 1 patient

The age of the patients were:

- Less than 40 years: 1 patient
- Between 40–60 years: 6 patients
- More than 60 years: 4 patients

Survival of life after operation were between 5 to 12 months in adenocarcinoma and between 12 months more than 2 years in epidermoid carcinoma.