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THYMOMA —A Review of Fourteen Patients—

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=국문초록=

흉선종
—14명에 대한 치료 효과—

김수곤 · 이형식 · 조관호 · 서창옥 · 김귀언

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흉선종은 비교적 드문 종양으로 알려져 있다. 예후를 알 수 있는 가장 중요한 인자는 수술시 육안적인 종양의 침윤정도이며, 치료는 수술에 의한 종양의 제거가 무엇보다 중요하고, 방사선 치료역시 수술후 국소적 재발의 방지를 위해 쓰이고 있다. 근치적 목적의 방사선 치료도 수술이 어려운 경우에 시행되고 있는 형편이다. 저자들은 1977년 1월부터 1984년 12월까지 세브란스병원 연세암센타 치료방사선과에서 흉선종 진단받고 치료한 14명의 환자를 후향성 분석에 의해 다음과 같은 결과를 얻었다.

1. 6명의 환자(43%)가 근무력증을 나타냈다.
2. 주변조직의 침윤이 86%(12/14)에서 관찰되었다.
3. 43%에서 육안적 완전 절제를 시행하였고 14%에서 부분절제, 그리고 43%에서는 생검만 시행하였다.
4. 수술후 혹은 근치적 목적의 방사선치료는 8명의 환자에서 시행하였으며 그중 현재 5명은 생존(4년, 2.8년, 1.6년, 1.4년, 1.3년), 3명은 사망(1년, 0.6년, 0.6년)하였다.
5. 방사선 치료선량은 대체로 4,000~4,500 rad(1950~7,000 rad)를 전후 흉곽 부위에 외부 조사하였다.

ABSTRACT

Beteen January 1977 and December 1984, fourteen patients diagnosed of thymoma has been analyzed retrospectively. Six patients(6/14 patients 43%) had myasthenia gravis. Twelve patients (12/14 patients 86%) had invasive thymoma. Complete resection was carried out in six patients (43%), two patients had patial resection (14%) and six patients had only biopsy (43%). Postoprative or radical radiotherapy was given to 8 peatients, of whom 5 patients was still alive(4 yr. 2.8 yr. 1.6 yr. 1. 4 yr. 1.3 yr) and 3 patients died (1 yr. 0.6 yr. 0.6 yr). External irradiation ranges 1,950~7,000 rads(mean 4,500, median 4,000 rads).

* 이 논문은 1985년 연세암센터 연구비의 보조로 이루어졌음.

INTRODUCTION

Thymomas are rare tumors. Invasive thymomas are even more infrequent[1]. The prognosis of

thymoma apears to be more closely related to the gross characteristics at operation than to histologic apearance[2,3,4,5]. Surgical resection is the treatment of choice for this tumor. Radiotherapy plays an important part in the management of invasive thymoma, although radiotherapy alone is less effective than a combination of surgery and radiotherapy[6,7,8,15]. There are few reports on chemotherapy, but recently reviews have been published on monochemotherapy[9] and combination chemotherapy[10,11,12,13]. The present report summarizes an experience in the management of 14 patients with thymoma.

MATERIALS AND METHODS

During the seven year period from 1977 through 1984, fourteen patients with thymoma were treated in the Department of Radiation Oncology and Chest Surgery at the Severance Hospital College of Medicine, Younsei University. Current follow up was obtained by sending questionnaires to the home addresses of patients or by calling their telephones. A review of the radiation records and the old admission charts indicated that this was the total experience of the institution. Tissue diagnoses were available in all cases.

Thymoma classified as lympocytic predominant, mixed, and epithelial predominant according to accepted classification system. Spindle cell type was considered epithelial predominant. Staging of thymoma as to their extent is based on invasiveness. The staging used in this study is based on that of Bergh et al. (Table 1).

RESULTS

There were eleven men and three women, whose

Table 1. Staging

Stage I ; Intact capsule or growth within the capsule
Stage II ; Pericapsular growth into mediastinal fat tissue
Stage III ; Invasive growth into the surrounding organs, intrathoracic metastases or both.

Table 2. Characteristics of 14 patients with Thymoma

Case No.	Age/Sex	Cell type	M.G.	Stage	Overall survival
1	43/F	Not defined	+	III	1.0 yr
2	48/M	Mixed	−	III	0.6 yr
3	51/M	Epithelial	−	III	4.0 yr +
4	53/M	Epithelial	−	III	2.8 yr +
5	64/M	Not defined	−	III	0.3 yr
6	47/F	Not defined	+	III	1.6 yr +
7	52/F	Mixed	+	III	1.4 yr +
8	42/M	Epithelial	−	III	0.6 yr
9	42/M	Lymphocytic	−	III	1.3 yr +
10	38/M	Lymphocytic	+	I	0.6 yr +
11	53/M	Mixed	+	II	lost F.U.
12	45/M	Not defined	−	I	7.8 yr +
13	49/M	Mixed	−	III	lost F.U.
14	50/M	Epithelial	+	III	14 day

+; Alive
M.G.; Myasthenia gravis

Table 3. Management of 14 cases of Thymoma

Cases No.	Initial surgery		Extent of disease	Postoperative Tx.
1	3/78	No resection	Pleura	RT 7,000 rads
2	7/79	No resection	Pericardium	RT 4,800 rads
3	5/81	Partial resection	Pleura, pericardium	RT 6,400 rads
4	8/82	No resection	Pleura, pericardium	RT 1950 rads Choemo.
5	10/83	No resection	Subaortic lymphnode, brain	RT 3,000 rads(brain)
6	9/83	Complete resection	Pleura	RT 4,000 rads
7	12/83	Complete resection	Pleura, pericardium	RT 4,000 rads
8	7/84	No resection	Pleura, pericardium, aorta, trachea	RT 4,000 rads
9	2/84	Complete resection	Pericardium	RT 4000 rads
10	9/84	Complete resection	No invasion	No
11	3/81	Complete resection	Mediastinal fat	No
12	9/77	Complete resection	No invasion	No
13	6/83	No resection	pleura	Steroid
14	11/77	Partial resection	Pleura	No

RT; radiotherapy
Chemo+; chemotherapy

ages ranged 38 to 64. (median 48year) Six patients had myasthenia gravis. Eleven patients were in stage Ⅲ, one in stage Ⅱ, and two in stage Ⅰ (Table 2).

The histologic features of these thymomas are as follows; four patients had epithelial predominance, four mixed cell type, two lymphocytic predominance and four patients did not have the histologic type specified in the pathologic report.

All patients underwent surgical exploration through thoracotomy or mediastinostomy. Of the 14 patients in this series, three patients had complete resection and was in stage Ⅰ or Ⅱ, three patients had complete resection plus postoperative irradiation due to invasiveness, one patient had partial resection plus postoperative irradiation and one had only partial resection, four patients had only biopsy plus postoperative radical or palliative irradiation, one had only biopsy plus irradiation and chemotherapy, one had only biopsy plus steroid therapy (Table 3).

Radiation to the mediastinum given ranged from 1,950~7,000 rads (mean 4,500 rads, median 4,000 rads). Palliative radiation to the whole brain for metastasis of the brain was given 3,000 rads.

In the group as a whole, five patients died from 14 days to 12 months postoperatively (14 days, 3 months, 7 months, 7 months, 12 months), seven patients were alive from 7 months to 7.8 years, and two were lost of follow up.

More meaningful survival can be determined by examining the varied therapeutic groups. Of the three patients who underwent complete resection alone, two were still alive (0.6 year, 7.8 year) and one was lost of follow up.

In the group of three patients who had complete resection plus postoperative radical irradiation, all three patients were alive (1.2 years, 1.4 years, 1.6 years). One patient who had only partial resection of tumor plus postoperative irradiation was still alive with good general condition (4 year). One myasthenic patient who had partial resection died on 14 th day postoperatively due to respiratory failure.

Four patients who had only biopsy of their tumors plus postoperative radical or palliative irradiation died (0.3 year, 0.6 year, 0.6 year, 1.0 year). One who had only biopsy plus postoperative

radiation therapy (1,950 rads) and chemotherapy (Vincristin, cytoxan) was still alive with huge mediastinal mass and pleural effusion. One who had only biopsy and steriod therapy was lost of follow up.

Of six myasthenic patients, three patients was still alive. In two patients among three alived myasthenic patients, myasthenia gravis was controlled by thymectomy and postoperative irradiation.

The survival of the patients according to the stage is as follows; two patients in the stage I were still alive (0.6 year, 7.8 year), one patient in the stage II was lost of follow up. Of eleven patients in the stage III, five patients died (14 day, 0.3 year, 0.6 year, 0.6 year, 1.0 year), five patients were still alive (1.3 year, 1.4 year, 1.6 year, 2.9 year, 4.0 year) and one patient was lost of follow up.

DISCUSSION

The therapy of thymoma offers the surgeon a unique oppertunity at the operating table since he is able to predict the patient's ultimate prognosis better than can the pathologist by careful microscopic examination and cellular identification.

Invasive thymomas are usually slowly growing tumors and tend to recur within the thoracic cavity[4,5]. Although relatively reported, metastases from malignant thymoma have been discovered in the brain, heart, liver, lymph nodes, lung, bone, kidney, spleen, chest wall and breast[7,10,15]. In our series, one patient had distant metastases to brain.

An unfavorable influence of gross tumor invasiveness on prognosis has been noted previously[2,7,10,16,17,21]. In our series, non invasive patients was no further evidence of tumor. In contrast, of eleven treated patients who had invasive thymoma with or without distant metastasis, five died and one was alive with large tumor.

Surgery and radiotherapy are the major therapeutic modalities for invasive thymoma. An aggressive surgical approach should be attempted even for invasive thymoma[10,16]. The efficacy of radiotherapy has been emphasized in many reports[1,6,8,18,19,20,10].

Immediate postoperative radiotherapy has indeed recommended to invasive thymoma by several authors[1,2,3,5,8,18]. In our series, of four patients who had only biopsy plus radical radiotherapy, only one patient still alive. One who had partial resection plus postoperative radiotherapy was still alive with no evidence of tumor. Extension of the field of radiotherapy to include the adjacent area and the supraclavicular region has been recommended[10]. In present cases, five patients irradiated to the mediastinum alone and three patients irradiated including the supraclavicualr region.

Effective doses ranges from 3,500~4,500, large tumors or unresectable tumors should receive in order of 4,500~4,800 rads in five to six weeks[6].

Approximately one third of patients with thymoma have myasthenia gravis, and one tenth of patients with myasthenia gravis have a thymoma. The presence of myasthenia gravis in patients with thymoma adeversely affeted survival in some series[1,5,17,21], but not in others[3,21,22]. In our cases, six patients (6/14 patients 43%) had myasthenia gravis and we found no correlation between myasthenia and survival. Previous investigators have reported approximately a 50% sucess rate in the control of myasthenia gravis by surgical removal of thymic tumors[2]. Earle et al reported that myasthenic symptoms improved by only irradiation in some cases[5]. In our cases, two only of six myasthenic symptoms after surgery with or without postoperative irradiation.

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