Recurrence of thymoma: re-operation and outcome

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INTRODUCTION: *The treatment of recurrent thymomas remains still controversial.*
PATIENTS AND METHODS: *From 1972 to 2006, 265 (114 males and 118 females) patients with thymoma underwent surgery at Catholic University of Sacred Heart. Twenty of these 265 patients developed a recurrence of the initial thymoma, and they represent the population of the present study.*
RESULTS: *One patient died of sudden death related to respiratory failure. The overall morbidity rate was 33% and the morbidity rate among myasthenic patients was 60%. 10 patients died during the follow-up; 2 of unrelated diseases, 2 of myasthenia gravis, and 6 of tumor growth. The overall actuarial survival rates were 43% and 37% at 5 and 10 years, respectively. Recurrences never appeared in patients with I stage of Masaoka and in type A and AB.*
CONCLUSIONS: *Considering the particular spread of thymoma and the encouraging results of the aggressive surgical approach, re-resection should be recommended in respectable recurrent thymomas.*

KEY WORDS: Thymectomy, Sternotomy, Recurrent Tymomas.

Introduction

Thymoma is the most common neoplasm in the anterior mediastinum, and is known as a low-grade malignant tumor generally associated with a good clinical course after surgical treatment. Recent reports, however, show that recurrence even after complete resection is not uncommon. Different from other malignant tumors, the frequency of recurrence with hematogenous metastasis is low, with most recurrent patients showing pleural dissemination or local relapse. Most recurrences occur in the intrathoracic cavity in 10% to 30% of patients after complete thymoma resections and may have a slow progress even in the absence of treatment [1].
Surgical re-resection, in case of recurrence, has been advised by several surgical teams [1,2] although others [3] considered chemotherapy as the treatment of choice.
In our experience, we decided to reoperate on all intrathoracic resectable recurrent thymomas, because we observe poor results after adijuvant chemotherapy.

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Material and Methods

From 1972 to 2006, 265 (114 males and 118 females) patients with thymoma underwent surgery at Catholic University of Sacred Heart. Two hundred were myasthenic. Median sternotomy was procedure of choice in all cases. Surgical pathological staging of the initial thymoma according to Masaoka [4] (Table I) and WHO [5] classification of 1999 (Table II) was done.
Twenty of these 265 patients developed a recurrence of the initial thymoma, and they represent the population of the present study. There were 12 men and 8 women with a mean age at the time of the original operation of 48 years (range 12±71 years).

Results

Mean time to recurrence was 88 months (range, 29 to 306 months). The recurrences were revealed by a systematic follow-up by roentgenographic or computed tomographic scan abnormalities, chest symptoms and recurrency of the myasthenia gravis.
Patients considered for re-resection had recurrences confined to the intrathoracic cavity. The re-resection was performed through a median sternotomy in 1 patient, through a lateral thoracotomy in 19 patients.

TABLE I - *Masaoka Staging System.*

Stage	Definition	Definition
I	Macroscopically encapsulated tumor, with no microscopic capsular invasion	
IIa	Macroscopic invasion into surrounding fatty tissue or mediastinal pleura	
IIb	Microscopic invasion into the capsule	
III	Macroscopic invasion into neighbouring organs	
IVa	Pleural or pericardial metastases	
IVb	Lymphogenous or hematogenous metastasis	

TABLE II - *WHO 1999 Classification.*

A	Medullary
AB	Mixed
B1	Lymphocyte rich, predominantly cortical
B2	Cortical
B3	Epithelial (well-differentiated thymic carcinoma)

One patients had local recurrences,19 had pleural and pulmonary recurrence. Eleven patients required lung wedge resections, 6 phrenic nerve resections, 7 diaphragmatic resections, 5 pericardial resections.
One patient died of sudden death related to respiratory failure. The overall morbidity rate was 33% and the morbidity rate among myasthenic patients was 60%. 10 patients died during the follow-up; 2 of unrelated diseases, 2 of myasthenia gravis, and 6 of tumor growth. The overall actuarial survival rates were 43% and 37% at 5 and 10 years, respectively.Recurrences never appeared in patients with I stage of Masaoka and in type A and AB.

Conclusions

Many Authors reported a rate of recurrences after complete thymoma resections about 10% to 30% of the patients and generally several years after the surgical resection. In our experience recurrences occurred in 7.5% of patients and never in stage I of Masaoka or A and AB of WHO classification.
As thymoma is an infrequent tumor, the treatment of these recurrences is not well known. In our experience, chemotherapy was not very effective in thymomas, even if some patients with unresectable thymoma may survive a long time after medical therapy or sometimes without treatment.
Furthermore, in our experience, most recurrences occurred in the intrathoracic cavity and seemed resectable. Considering the particular spread of thymoma and the encouraging results of the aggressive surgical approach, re-resection should be recommended in respectable recurrent thymomas. This could be easily recommended in local recurrences but also in intrathoracic metastases if we consider these metastases as a locoregional spread with malignant implants. However, the progress of the new regimens of chemotherapy is leading us to combine the surgical resection with neoadjuvant chemotherapy. The benefits of these multimodality therapies will probably remain difficult to determine considering the rarity, the heterogeneity, and the indolent natural history of this particular malignant tumor.

Riassunto

INTRODUZIONE: Il trattamento delle recdive da timoma è ancora dibattuto.
PAZIENTE E METODI: Dal 1972 al 2006 nel nostro policlinico sono stati operati 265 pazienti. Venti tra questi hanno sviluppato una recidiva.
RISULTATI:1 paziente è morto nel postoperatorio per insufficienza respiratoria. La morbidità è stata del 33% e nel 60% dei casi in pazienti miastenici.Dieci pazienti sono morti in corso di follow-up: 2 per altre malattie, 2 per miastenia e 4 per progressione di malattia. La sopravvivenza globale è stata del 43% a 5 anni e del 37% a 10 anni. Non sono state riscontrate recidive in pazienti allo stradio I e di tipo A o AB.
CONLUSIONI: I risultati ottenuti suggeriscono che l'approccio chirurgico è un valido trattamento delle recidive dei timomi.

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