THYMECTOMY FOR MYAESTHENIA GRAVIS

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SYNOPSIS

Thirty-three patients with myaesthenia gravis who underwent thymectomy were retrospectively reviewed. Twenty-one (63.6%) manifested sustained improvement as judged by the gain in strength or a decrease in the medication needed, with 4 enjoying permanent remission.

Thymectomy has a very important role in the treatment of myaesthenia gravis as approximately 70% of patients will respond favourably and there is also a possibility of permanent remission. Except for patients with only ocular weakness, it should be offered as a primary treatment in myaesthenics of all other clinical grades.

It has been suggested that early removal of the thymus in myaesthenics may prevent the future development of a tumour and moreover, small tumours maybe missed by the routine chest roentgenogram ( ). Both these phenomena occurred in 2 of our patients separately.

INTRODUCTION

Since the serendipitous observation by Blalock (1) forty years ago that thymectomy relieved the symptoms of a myaesthenic patient, the enthusiasm for this operation has waxed and waned. In spite of several large series documenting an improvement in 55 to 85% of patients and remission in 20 - 30% following thymectomy (2, 3, 4, 5), many unanswered questions still remain regarding the indications for thymectomy and the prognostic influence of a variety of factors. Although some have suggested that case selection maybe important in the final outcome of thymectomy, a computer-assisted retrospective study (6) of matched medically and surgically treated patients, has given the best evidence to date, that operation is the definitive treatment in this disease.

This retrospective study was undertaken to see if our patients differed in any way from those in other series.

MATERIALS AND METHODS

The clinical records of all 33 patients with myaesthenia gravis who underwent thymectomy at the University Hospital, Kuala Lumpur were retrospectively reviewed and form the basis of this study.

Clinical Features:

The ages of these patients ranged from 13 to 54 years with a mean of 32.7 years (Fig. 1). Only 8 patients were above 40 years of age. There were 17 males and 16 females in our series. Twenty-one (64%) were Chinese, 8 (24%) were Malays and 4 (12%) Indians.

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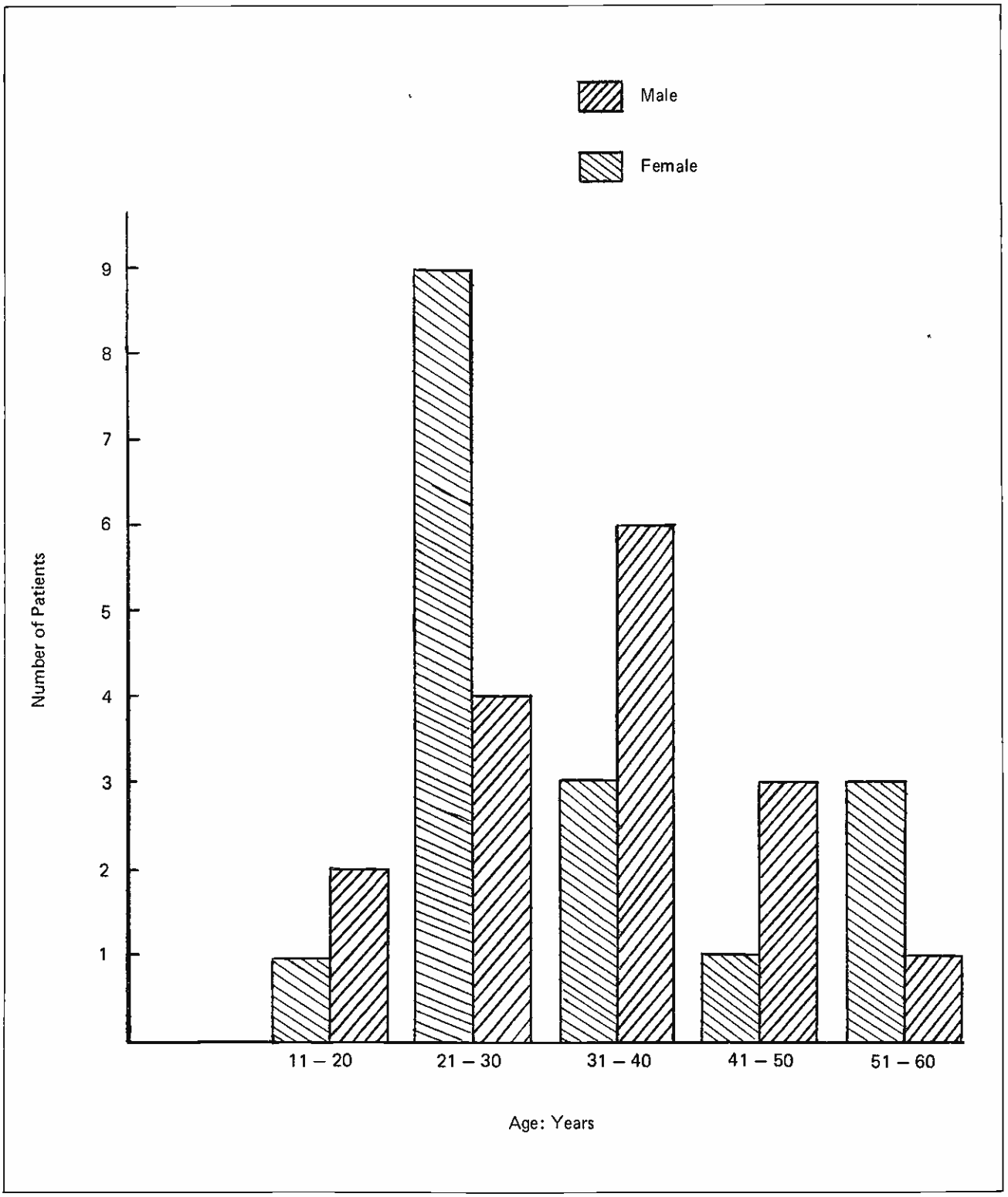

Figure 1: The age and sex distribution of 33 patients undergoing thymectomy for myaesthenia gravis.

Preoperatively the patients were grouped according to Osserman's classification (7) Table 1. Three patients had ocular symptoms (Group 1); 4 had mild generalised symptoms (Group 2); 13 had generalised moderately severe symptoms (Group 3); 5 had severe generalised symptoms (Group 4) and 8 were admitted in myaesthenic crisis (Group 5).

Although the transcervical approach has been recommended for its low postoperative morbidity (8, 9) all our procedures were performed through a sternum-splitting incision. In view of the high incidence of surgically important variations in thymic anatomy (10), we believe that total excision of thymic tissue requires a wide mediastinal exposure with meticulous dissection.

TABLE 1: CLINICAL CLASSIFICATION PRIOR TO OPERATION

Clinical Category	No. of Patients
Group 1 : Ocular	3
Group 2 : Mild Generalised Myaesthenia	4
Group 3 : Moderately Severe Generalised	13
Group 4 : Severe Generalised Myaesthenia	5
Group 5 : Myaesthenic Crisis	8

RESULTS

The duration of the disease before thymectomy was less than 1 year in 19 patients. Ten patients underwent "early" thymectomy: 8 because of the presence of an anterior mediastinal mass on chest roentgenogram and the other 2 who did not have tumours, because of uncontrollable myaesthenic crisis. The remaining 3 patients with thymoma were operated after more than a year of symptoms because the first case presented to us late, the second case had a normal CXR a year previously and the last case had a small tumour which was missed by the routine preoperative radiographs.

Thymoma was found in 11 patients. Three of the 7 tumours found in males and only one of the 4 found in females were noted to be invasive. The average age of patients with thymoma was 38.4 years as compared with 29.7 years in those without.

Thymic hyperplasia was found in another 11 patients and in 5 involutional changes were noted. The thymus was normal in the remaining 6 patients. A summary of the histopathological features is shown in Table 2.

TABLE 2: HISTOPATHOLOGICAL FINDINGS OF THE THYMUS GLAND

Histology	No. of Patients
Thymoma	11
Thymic Hyperplasia	11
Involutional Changes	5
Normal	6

Postoperatively, patients were classified according to their clinical status:

Group A : Complete remission. These patients were completely free from symptoms without medication.

Group B : Improvement. These patients had mild to moderate symptoms that were well controlled with medication.

Group C : No improvement. These patients showed no change in their clinical status inspite of adequate medication.

Group D : Deterioration. These patients were difficult to control and entered into a poorer category or they remained in the same category but showed poor response to medication.

The results are summarised in Table 3.

There was no perioperative or immediate postoperative mortality. Twenty-one (63.6%) of all 33 patients showed remission or improvement of whom 11 were males and 10 were females. A favourable response of 72.7% was found in nonthymomatous patients when compared to only 45.5% (5 out of 11) in patients with thymoma.

There was no change clinically in 9 patients (6 females and 3 males). Four patients in this group had thymoma.

Three patients rapidly deteriorated even after thymectomy. Of these, two had thymomas.

The average age of the patients in Group A and B was 32.1 years whereas it was 33.8 and 33.7 years for Group C and D respectively.

The duration of symptoms before thymectomy did not seen to affect the outcome of the operation. Regardless of whether the duration was more or less than one year, 72.7% of nonthymomatous patients benefited from the operation.

Twelve patients needed ventilatory support postoperatively due to the severity of their weakness and 9 of them were tracheotomised subsequently. Seven

TABLE 3: RESULTS: THYMECTOMY FOR MYAESTHENIA GRAVIS (U.H.K.L. 1968 - 1979)

	No. of Patients	Group A	Group B	Group C	Group D
Nonthymoma	22	3	13	5	1
Thymoma	11	1	4	4	2
Total :	33	4	17	9	3

TABLE 4: LATE MORTALITY OF 7 PATIENTS AFTER THYMECTOMY

Sex	Age	Cause	Interval After Thymectomy
M	45	Postradiation cholinergic crisis Bronchopneumonia	2 months
M	53	Trachea-oesophageal fistula Bronchopneumonia	3 months
M	33	Relentless progression of disease Bronchopneumonia	3 months
M	34	Cause unknown Died elsewhere	4 months
M	23	Presistent myaesthenic crisis Erosion of E.T.T.* into aorta	7 months
F	54	Recurrent thymoma Radiation pneumonitis	3 years
F	35	Tracheal stenosis Recurrent aspiration pneumonia	6 years

* E.T.T. : Endotracheal tube

patients developed wound infection which healed with conservative treatment.

There were seven late deaths: 5 patients died within one year while 2 others survived for 3 and 6 years. The causes of death are as shown in Table 4.

COMMENTS

The empiric treatment of thymectomy for myaesthenia gravis has always been clouded with a host of uncertainities, although several large series have lent sustenance to the procedure. The reluctance for this operation in earlier years was related in part to the unpredictability of results and the significant postoperative morbidity and mortality. However, with the experience gained in thoracic surgery and especially in postoperative management, the results have become more predictable and the morbidity and mortality have been signficantly reduced (11, 12, 13).

In our institution the treatment of myaesthenia gravis has been mainly medical, patients were submitted for thymectomy only when there was difficulty in controlling the myaesthenic symptoms. Although the presence of thymoma in association with myaesthenia gravis generally gives a poor outcome (14, 15), we still managed to obtain a favourable response in 63.6% of all our patients. Four patients (12%) enjoyed permanent remission. If only nonthymomatous patients were considered, 72.7% would have benefited from thymectomy. In view of these findings, we strongly recommend that all patients with myaesthenia gravis be submitted for thymectomy early on in the course of their disease.

There is a great deal of conflicting information with regards to the prognostic importance of such factors as age, sex and duration of the disease. We have not found any such implication in our series. The overriding prognostic factor in our series is the presence of a tumour in the thymic gland.

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