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THYMOMA:A RETROSPECTIVE REVIEW OF 50 CASES

Oncology

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KEYWORDS

The most common neoplasm of the anterior mediastinum , originates within the epithelial cells of the thymus[1]. Thymomas are typically slow-growing tumors that spread by local extension. Metastases are usually confined to the pleura, pericardium, or diaphragm, whereas extrathoracic metastases are uncommon.The most widely used staging system for thymomas is Masaoka and recently by WHO staging, both were included in our studies.

Table 1:WHO Staging

Type A Thymoma	Spindle or oval epithelial cells with little nuclear atypia and few lymphocytes
Type AB thymoma	Thymoma with features of A mixed with lymphocytes
Type B1 Thymoma	Thymoma that resembles the normal functioning thymus
Type B2	Thymoma with plump epithelial cells among a large population of lymphocytes.
Type B3	Thymoma with epithelial cells with a round or polygonal shape with mild atypia in a sheet like growth
Type C (thymic carcinoma)	Thymic tumor with obvious atypia and features that do not resemble thymus tissue

Table 2:Thymoma:Masoka Staging System

Stage I	Encapsulated tumor without gross or microscopic capsular invasion
Stage II	Microscopic capsular involvement or macroscopic mediastinal involvement of the fat or pleura
Stage III	Gross invasion of neighboring organs
Stage IVA	Pleural or Pericardial spread
Stage IVB	Lymphatic or hematogenous spread

AIM

- To investigate the role of surgery in the management of thymomas and investigate prognostic indicators after surgery for thymoma.

MATERIALS AND METHODS:

- We retrospectively reviewed 55 thymic epithelial tumors diagnosed during the period of 1998 to 2008 at our (KMIO) institute. 55 patients were diagnosed as thymoma,50 patients were include in our study , 5 patients were determined to have either World Health Organization type C disease or Masaoka stage IV-B disease and were excluded from analysis. we examined the histologic specimens using the current World Health Organization classification.Patient characteristics, surgical procedures, and postoperative courses were studied . Staging was performed according to the modified Masaoka system based on surgical and pathological findings ,all the histologic specimens were reexamined using the current WHO criteria for TET classification for the purpose of the study.Preoperative workup included a complete history and physical examination, laboratory tests, chest roentgenorgram,contrast enhanced computed tomographic scan.
- Our strategy for clinically suspected TET patients without any clinical evidence of dissemination was surgery oriented (ie, surgical exploration for histologic diagnosis and potential resection).The surgical procedure consisted of a total thymectomy, together with excision of invaded tissue when possible, through a median sternotomy or a thoracotomy based on the tumor location. Patients were operated on with every effort to remove the tumor. If complete resection was not feasible, then a partial resection (debulking) was carried out. When even a debulking was difficult, the procedure turned into a mere biopsy.Surgical specimens were further examined by our pathologists to determine the histology as well as the margins of resection.The most common surgical approach was sternotomy, which was utilized in 32(64%) patients in our series.In addition to total thymectomy, 4 of our patients additionally had partial pleurectomy, wedge resections of lung & lobectomy.

RESULTS

Demographic characteristics of the 50 patients included the following: The majority of patients in our series were female 61% (n = 31)

Table3: symptomatic presentation

Cough	17
Dyspnea	12
Incidental/asymptomatic	10
Chest pain	8
SVC obstruction	3

overall average age of patients was 51.0 years.
15(30%) patients was associated with myasthenia gravis.

Table 4: Masoka stage classification of patients

Masoka stage	Number of patients
Stage 1	22(44%)
Stage 2	16(32%)
Stage 3	07(14%)
Stage 4-A	05(10%)

Table 5: Surgical options

Completely resected	35
Partially resected	11
Biopsy only	04

Table 6:Surgical option with respect to disease stage

	Completely resected(35)	Partially resected(11)	Biopsy only(4)
Stage 1	20	02	00
Stage 2	11	05	00
Stage 3	03	04	00
Stge 4	01	00	4

- The complete resection rate of stages I and II tumors was significantly higher than stages III and IV tumors (88.57% vs 11.43%;).
- There were significantly more stage I and stage II cases in histologic types A, AB, and B1 tumors than in B2, B3 tumors (76% vs 24%,) and their complete resection rate was significantly

higher than the latter group (90.91% vs 9.09%).

Table 7: Post Op Complications

Post op complications(8)	
Myasthenic crisis	4
Respiratory failure	2
Pneumonia	2

Table 8:Mortality

Mortality	2patients
Myasthenic crisis	1
Cardiac arrest	1

Table 9:Adjuvant treatment

Incompletely resected	13
Patients underwent RT	8
Completed RT	6
Partial response/on follow up	4
Non responders	2

Table 10: mean follow up of 60 months

Patient alive	33(66%)
Patient died	8(16%)
Not able to contact	9(18%)

5 yr survival was 66%

CONCLUSION:

Surgery remains the mainstay of treatment regardless of stage for all thymic neoplasms (16).Blalock described removal of the thymus initially in 1941(3)

The preferred surgical approach is median sternotomy with complete thymectomy[4,5,6,7–10) Complete thymectomy is favored even in cases of only partial thymic gland involvement because of reports of improved survival and multifocal thymoma.

40% of the cases invade surrounding structures which may limit the ability to achieve R0 margins (2).

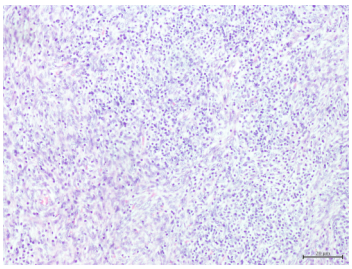
In advanced tumors,especially if the lung or pleural space is invaded, the extension of a sternotomy to a hemiclamshellincision or a full clamshell incision can be suitable.

The oncologic equivalency of thoracoscopic and robotic assisted approaches has been reported, so long as capsule integrity has been maintained and tumor seeding has been prevented (11-14).

Masaoka stages III and IV, histologic types B2, B3, and C, and incomplete resection were independent risk factors for poor prognosis Complete resection was feasible in all early stage TETs in our patients. The goals of surgery were achieved safely with very few serious complications and no surgical deaths.Completeness of resection is the most commonly cited statistically significant prognostic factor in thymoma .Our experience also proves that both the WHO criteria and the modified Masaoka staging are prognostic factors of TETs. Long-term disease-specific survival can be expected not only after surgery for early stage thymoma but also after surgery for advanced disease and also including histopathologic sub types.

Ethics committee approval from “Kidwai Memorial Institute of Oncology Ethics Committee” was taken for the analysis of data.Consent to publish: The patients consent to publish the above data was taken.The authors do not have any competing interests

Microscopic picture showing Thymoma type AB-



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