CHAPTER 20

SURGICAL TREATMENT OF THYMIC TUMORS

Amr ABDELLATEEF [1]

INTRODUCTION

Thymic tumors are considered as the most common anterior mediastinal neoplasm in adults [1]. They vary according to their pathological nature into; benign: such as; thymic hyperplasia, thymic cysts and thymolipoma; malignant such as; thymoma and thymic carcinoma; and benign with possible malignant association such as; thymic cyst associated with thymoma and thymic neuroendocrine tumors. This pathological typing in addition to tumor invasiveness and associated symptoms are the mainstays upon which the indication for surgery and extent of resection are determined [2,3].

Patients with radiological signs of thymic hyperplasia should be investigated for associated symptoms of myasthenia gravis (MG) or other associated syndromes as this association is considered as the main indication for surgery in case of hyperplasia [4].

Despite being uncommon with thymic cysts, malignancy cannot be excluded due to the confusion in differentiation between benign thymic cysts and invasive thymoma with cystic degeneration. For that, proper treatment for thymic cysts is debatable between follow up, aspiration or surgical resection. However, surgical resection is preferable if malignancy is suspected or in case of associated MG [3].

Presence of Thymolipoma may be associated with autoimmune systemic diseases such as MG, pure red blood cell neoplasia, Graves disease, aplastic anemia, Hodgkin disease and hypogammaglobulinemia. Surgical resection is indicated to confirm pathological diagnosis in addition to its value in relieving the accompanying systemic autoimmune symptoms [5].

THYMOMA

Thymoma account for the majority of thymic neoplasms [6]. About 30–50% of thymomas are associated with clinical MG [7]. In addition, about 10% of thymoma cases have other paraneoplastic syndromes like; hypogammaglobulinemia, inappropriate antidiuretic hormone secretion, Cushing syndrome, red blood cell aplasia and systemic lupus erythematosus [8]. Thymoma is considered potentially malignant as it has probable tendency for invasiveness and local recurrence [9].

PATHOLOGY

Thymic tumors are staged according to degree of invasiveness through Masaoka staging system (Table 1) [9-11] or through TNM staging (Table 2) [11]. Also, it is classified histologically via WHO classification (Table 3) [12-14]. Prognosis is mainly depending on degree of invasiveness, histological typing and completeness of surgical resection [15].

[1] Assoc. Prof., Cardiothoracic Surgery, Mansoura University School of Medicine, Egypt.
Consultant Thoracoscopic Surgery, Mansoura University School of Medicine, Egypt. amr_abdellateef@mans.edu.eg

nosis is poor in case of distant metastasis, nodal involvement, high-grade histology or incomplete resection [80].

Thymic neuroendocrine tumors:

Thymic neuroendocrine tumors are more aggressive in behavior with poorer prognosis than those of pulmonary origin. They are subdivided into typical thymic carcinoids (low-grade), atypical thymic carcinoids (intermediate-grade), Large cell neuroendocrine tumors and thymic small-cell carcinomas (high-grade) [12-14]. Thymic small-cell carcinomas are rare with aggressive nature with more tendency to have metastases on presentation [81]. Thymic carcinoids respond poorly to adjuvant therapy. So, complete surgical resection is the treatment of choice. If it is associated with endocrine syndrome (e.g., Cushing syndrome or multiple endocrine neoplasia [MEN] syndrome), octreotide therapy may help to relieve symptoms. Surgical debulking is also indicated if the tumor is invasive as it improves survival and palliates symptoms [82].

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