CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 39 (2017) 19–24

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Surgical approach in thymectomy: Our experience and review of the literature

Vincenzo Giuseppe Di Crescenzo[a,*], Filomena Napolitano[a], Claudio Panico[a], Rosa Maria Di Crescenzo[b], Pio Zeppa[c], Alessandro Vatrella[d], Paolo Laperuta[a]

[a] Department of Medicine and Surgery, Thoracic Surgery Unit, University of Salerno, Italy
[b] Department of Medicine and Surgery, Pathology Unit, Federico II University of Naples, Italy
[c] Department of Medicine and Surgery, Pathology Unit, University of Salerno, Italy
[d] Department of Medicine and Surgery, Section of Respiratory Diseases, University of Salerno, Salerno, Italy

ARTICLE INFO

Article history:
Received 26 April 2017
Received in revised form 18 July 2017
Accepted 18 July 2017
Available online 22 July 2017

Keywords:
Thymoma
Thymectomy
Myasthenia gravis
Median sternotomy
Video-assisted thoracoscopic surgery (VATS)
Robotic video-assisted thoracoscopic (R-VATS)

ABSTRACT

AIM: Thymectomy is the main treatment for thymoma and patients with myasthenia gravis (MG). The traditional approach is through a median sternotomy, but, recently, thymectomy through minimally invasive approaches is increasingly performed. Our purpose is an analysis and discussion of the clinical presentation, the diagnostic procedures and the surgical technique. We also consider post-operative complications and results, over a period of 5 years (May 2011–June 2016), in thymic masses admitted in our Thoracic Surgery Unit.

METHODS: We analyzed 8 patients who underwent surgical treatment for thymic masses over a period of 5 years. 6 patients (75%) had thymoma, 2 patients (25%) had thymic carcinomas. 2 patients with thymoma (33%) had myasthenia gravis. We performed a complete surgical resection with median sternotomy as standard approach.

RESULTS: One patient (12%) died in the postoperative period. The histological study revealed 6 (75%) thymoma and 2 (25%) thymic carcinomas. Post-operative morbidity occurred in 2 patients (25%) and were: pneumonia in 1 case (12%), atrial fibrillation and pleural effusion in 2 patients (25%). One patient with thymoma type A recurred at skeletal muscle 2-years after surgery.

CONCLUSIONS: Thymic malignancies are rare tumors. Surgical resection is the main treatment, but a multimodal approach is useful for many patients. Radical thymectomy is completed removing all the soft tissue in the anterior mediastinum between the two phrenic nerves and this is the most important factor in controlling myasthenia and influencing survival in patients with thymoma. Open (median sternotomy) approach has been the standard approach for thymectomy for the better visualization of the anatomical structures. Actually, video-assisted thoracoscopic surgery (VATS) thymectomy and robotic video-assisted thoracoscopic (R-VATS) approach versus open surgery has an equal if not superior oncological efficacy, better perioperative complications and survival outcomes.

© 2017 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

The work has been reported in line with the SCARE criteria [52]

Thymoma is the most frequent primary mediastinal neoplasm in adults [1], usually benign and slow-growing. The most frequent metastatic localizations are to the pleura, pericardium and/or diaphragm [1]. Therefore, complete surgical resection is the main treatment. Median sternotomy has been long considered the best for resection approaches [2,3]. Actually, minimally invasive methods have emerged over recent decades including video-assisted thoracoscopic (VATS) and robotic video-assisted thoracoscopic (R-VATS) approaches [4–8]. Thymic malignancies are uncommon tumors. The most important histological patterns in mediastinal neoplasm are: thymomas, thymic carcinomas (TC) and neuroendocrine thymic tumors (NETT). Thymoma is most frequent between 35 and 70 years of age and has a gender distribution slightly more common in older women [9]. Patients with myasthenia gravis are generally younger, with a broad peak between 30 and 60 years. Thymomas have an indolent growth pattern and may be confused with a benign growth. Autoimmune diseases, such as myasthenia gravis, systemic lupus erythematosus (SLE), rheumatoid arthritis, thyroiditis, present a linkage in the aetiology of thymoma.

* Corresponding author at: Department of Medicine and Surgery, University of Salerno, Thoracic Surgery, Baronissi Campus, Via S. Allende, 84081 Baronissi, Salerno, Italy.
E-mail addresses: vdicrescenzo@unisa.it (V.G. Di Crescenzo), milena.napolitano@yahoo.it (F. Napolitano), panico@sangiovannieruggi.it (C. Panico), rose.dicrescenzo@libero.it (R.M. Di Crescenzo), pzeppa@unisa.it (P. Zeppa), avatrella@unisa.it (A. Vatrella), laper@libero.it (P. Laperuta).

http://dx.doi.org/10.1016/j.ijscr.2017.07.028
2210-2612/© 2017 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Table 1
Patients' symptoms on presentation (patients may have more than one clinical feature).

	Numbers	Percentage%
Patients	8	
Chest pain	3	37
Cough	4	50
Shortness of breath	2	25
Superior Vena Cava syndrome	1	12
Weight loss	2	25
Ptosis	2	25
Double vision	2	25
Generalized fatigue	2	25
Fever	1	12
Night sweats	1	12
Asymptomatic	3	37

Thymoma could be asymptomatic (30%) and discovered incidentally including chest surgery for unrelated reasons. About 30% of patients with thymomas have myasthenia gravis [10], but only 21% of patients with myasthenia have thymomas [11]. Thymomas are primary tumors of thymic epithelial cells, generally benign, instead of thymic carcinomas considered malignant with a worse prognosis [12,13]. Thymic epithelial tumors are classified according to World Health Organization (WHO), considering both histological and morphological features [14]. The Masaoka staging, introduced in 1981, is the most widely used one and it is based on clinical description of local extension of the neoplasm [15,16]. Another classification is the Tumor-node-metastasis (TNM) staging. In general, approximately 40% thymomas present at Stage I, 25% each at Stages II and III, 10% at Stage IVa and 1%–2% at Stage IVb. Invasion into mediastinal tissue (Stages II, III) is present in 50% of thymomas, with pleural invasion being most common followed by pulmonary and pericardial invasion. Approximately 30% of these cases have involvement of innominate vein or superior vena cava and 20% have phrenic nerve involvement. Direct extension is also seen into aorta and pulmonary artery (11%) and chest wall (8%) [17]. Most of thymic tumors have non-malignant appearing thymic epithelial cells mixed with variable proportions of lymphocytes. Despite his lack of malignant cytological features and their indolent behavior, thymomas have invasive and metastatic potential and should not be considered benign [18,19]. Computed tomography (CT) is the standard diagnostic and preoperative staging modality for thymoma. Thymomas typically appear as rounded or oval masses in early stages. Presence of irregular margins, multiple calcifications and areas of low attenuation are suggestive of invasion [20]. Preservation of fat planes between the thymoma and the adjacent structures indicate a noninvasive tumor while their absence is suspicious for invasion. The presence of smooth or lobulated contour, homogenous enhancement, absence of pericardial or pleural effusion or calcification in the tumor are indirect signs of a thymoma or a well-differentiated thymic carcinoma [21].

2. Materials and methods

Over a period of five years, May 2011–June 2016, in the Thoracic Surgery Unit of "S. Giovanni di Dio e Ruggi D'Aragona" Hospital of University of Salerno, were observed and treated 8 patients with thymic masses (4 men and 4 women with a mean age of 55 years – range 25–72 years). Six patients (75%) had thymoma, 2 patients (25%) had thymic carcinomas. Two patients with thymoma (33%) had myasthenia gravis. The symptoms of 8 patients is summarized in Table 1. Thymoma could be asymptomatic (3 cases in our study) and discovered incidentally including chest surgery for unrelated reasons. About 40% of patients have local symptoms. They usually include chest pain (3 patients in our observations), cough (4 cases) and shortness of breath (2 cases) from compression of the airways or from the neuromuscular effects of myasthenia gravis. Less commonly superior vena cava syndrome (1 case) and weight loss occurs (2 cases) in rapidly growing tumors. When clinically manifest myasthenia gravis present with ptosis (2 cases), double vision (2 cases) and generalized fatigue (2 cases), particularly worse late during the day. One patient showed fever and night sweats making it difficult to differentiate from lymphoma.

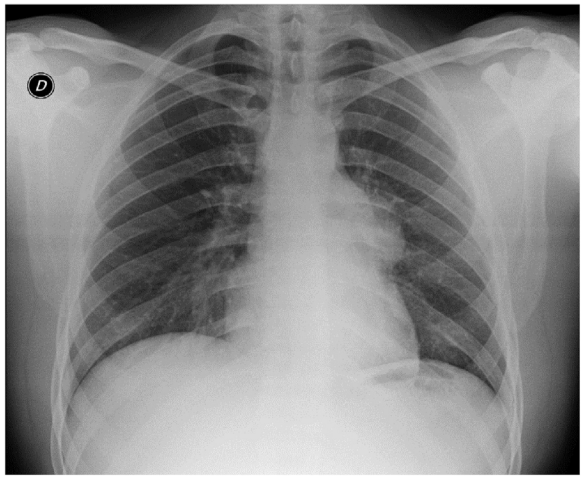

Fig. 1. Standard thoracic X-ray: enlargement of the mediastinal opacity.

The preoperative diagnosis was made by anamnesis, clinically examination, thoracic X-ray examination, total body CT scan exploration, flessible bronchoscopy. For histopathologic diagnosis we performed Fine needle aspiration (FNA) in 4 cases (only 2 resulted suspected for thymomas) and needle biopsy or open biopsy (anterior parasternal mediastinotomy, thoracoscopy) in 2 cases. Two cases presented with myiastenia gravis symptoms and had no histopathologic examination.

Six patients (75%) had thymoma, 2 patients (25%) had thymic carcinomas. Two of 6 patients with hymoma had myastenia gravis.

En-bloc resection of the entire thymus gland and surrounding areolar tissue was performed with median sternotomy as standard approach. Radical thymectomy was obtained by removing all the soft tissue in the anterior mediastinum between the two phrenic nerves. These surgical interventions were performed under general anesthesia with tracheal intubation. Patients were positioned in the supine position with the arms either tucked in at their sides or slightly extended at the side. All patients were ventilated with a single-lumen endotracheal tube. Either a complete (6 cases in our study) or a partial sternotomy (2 cases in our observation) was used and the thymus and thymic pathology were resected en bloc.

A patient with a thymoma type A recurred at skeletal muscle 2-years after surgery. Therefore, we performed a radical surgery resection of metastases before adjuvant treatment [26].

3. Results

The standard thoracic X-ray revealed an enlargement of the mediastinal opacity (Fig. 1). Computed tomography (CT) is the standard diagnostic and preoperative staging modality in order to define preoperative treatment. CT, performed in all patients, has always consented to evaluate size, location and relationships of enlarged thymic mass. (Figs. 2, 3, 4, 5, 6). Intravenous contrast is essential in determining vascular anatomy and its relationship to the tumor. CT is important in predicting whether a tumor is easily resectable or not, and which structures may need to also be removed. CT is also useful for detecting recurrence after a previ-

Download English Version:

https://daneshyari.com/en/article/5732730

Download Persian Version:

https://daneshyari.com/article/5732730

Daneshyari.com