

Mediastinal Tumors Undergoing Surgical Management – A Prospective Study

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A B S T R A C T

Introduction: Multiple different types of mediastinal masses may be encountered in imaging techniques in symptomatic or asymptomatic patients. The location and composition of these lesions are critical to narrowing the differential diagnosis. Study aimed to bring out of the improvement of the thorough preoperative workup of patients before taking up the case for surgery

Material and Methods: This was a prospective study from 2014 to 2019, a period of 5 years. All the patients underwent total excision of the tumor without significant morbidity and mortality

Results: Benign tumors were the most common tumors nearly 70%. The female incident was high. Neurogenic tumors 38% and Dermoid 26% were the most common subtype.

Conclusion: Mediastinal tumor was a rare presentation which needs tertiary care. Preoperative thorough clinical and the diagnostic investigation is needed for taking up the case for planning definitive surgery.

Keywords: Computed Tomography (CT), Lymphoma, Mediastinal Mass, Thymoma

INTRODUCTION

Mediastinal masses include a wide variety of tumors afflicting people of all ages and remain an interesting diagnostic challenge. They may be congenital or acquired, which can be primary or secondary tumours. Secondary mediastinal tumours are more common than the primary tumours, and most frequently represent lymphatic involvement from primary tumours of lung or infra-diaphragmatic organs such as pancreatic, gastro-oesophageal and testicular cancer. Masses in the anterior mediastinum include thymoma, lymphoma, pheochromocytoma, germ cell tumours and parathyroid lesions. Masses in this area are more likely to be malignant than those in other compartments.^{1,2} Mediastinal space is narrow; any mass arising from there will compress the adjacent structures leading to life-threatening emergencies. Symptoms at presentation are seen in 60% of the patients.³ Symptoms are due to compression or direct invasion of surrounding structures or due to paraneoplastic syndromes. With this in background, the study was conducted to assess the incidence, to evaluate the clinical presentation, treatment modalities as well as outcome of mediastinal masses.^{4,5,6} Study aimed to bring out of the improvement of the thorough preoperative workup of patients before taking up the case for surgery

MATERIAL AND METHODS

This was a prospective study from 2014 to 2019, a period of

5 years. In Dept of Cardiovascular Thoracic Surgery, Govt Rajaji Hospital Madurai. All the patients underwent total excision of the tumor without significant morbidity and mortality

Inclusion criteria: Selection of patients was done after thorough preoperative investigations and taken up for definitive surgery are included in the study. Exclusion criteria: Patients with advanced stages such as inoperable secondaries, SVC obstruction etc., are excluded from the study

Patients fulfilling the above criteria were enrolled in the study after taking informed consent. A detailed history with special emphasis on symptoms. Most of the patients were asymptomatic and few presented with non-specific chest pain and few with dyspnea.

Chest X-ray, CT thorax, routine hematological, biochemical investigations, and serological test for HIV/ HbsAg were done in all cases. Other investigations included bronchial brushings for cytology, sputum cytology for Acid Fast Bacilli (AFB), pleural fluid analysis.

RESULTS

Total number of patient were 42, The age range affected by mediastinal tumour was between 3 to 52 years, with the mean age of 28 years. About 61% of cases were female (26 patients) and 38% of cases (16 patients) were males, with a female to male ratio of 1:0.6 [Figure 1]. Most common symptoms of present study was chest pain, present in 28 patients (67%),

dyspnea was present in 6 patients (14%), mass lesion was present in 6 patients (14%), compression symptoms were in 2 patients (5%) [Figure 2]. Most common location of tumor

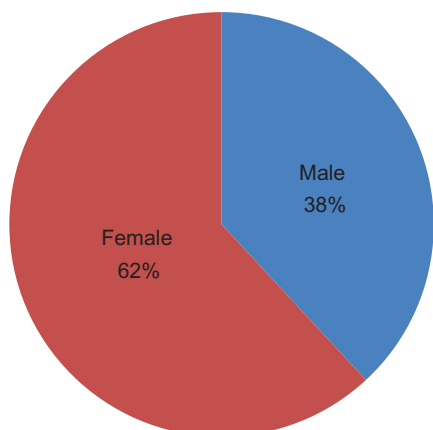


Figure-1: Gender distribution

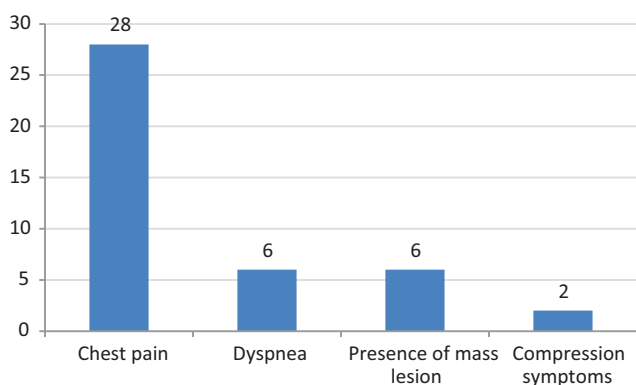


Figure-2: Clinical profile

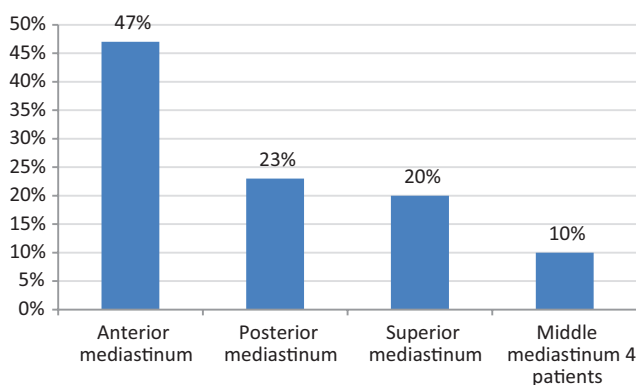


Figure-3: Location of the tumor

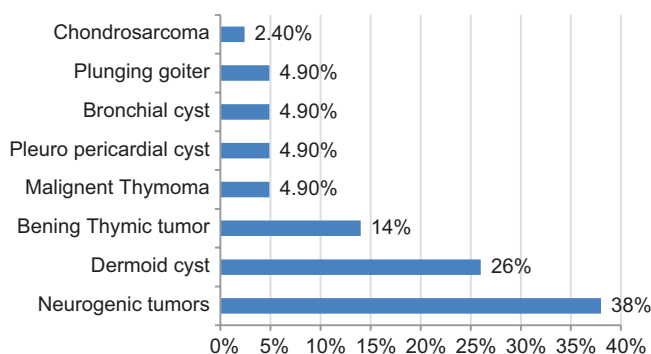


Figure-4: Biopsy report

was anterior mediastinum in 20 patients (47%), followed by posterior mediastinum in 10 patients (23%), superior mediastinum in 8 patients (20%), middle mediastinum in 4 patients (9%) [Figure 3].

Nearly all tumors were benign except for two cases of Malignant Thymoma which was excised with capsule intact so patient was not submitted for chemotherapy or radiotherapy. Most common tumor was neurogenic tumors, seen in 16 patients (38%) followed by dermoid cyst, seen 11 patients (26%), thymic tumors was present in 8 patients (19%) of which 2 patient had malignant thymoma, pleuro pericardial cyst was seen in 2 patients (4.9%), bronchial cyst was in 2 patients (4.9%), plunging goiter was present in 2 patients (4.9%), whereas chondrosarcoma was seen in 1 patient (2.4%) [Figure 4].

DISCUSSION

Mediastinal tumors are usually classified into the three or four categories according to their original location in the thorax. Each tumor has some particular pathologic tendency, and methods of management are decided depending on tumor characteristics. Pathology of posterior mediastinal tumors (PMTs) differs between children and adults. Most of the PMTs in adults are benign lesions; they are mostly malignant in children. Obviously, surgery is curative for benign tumor, but plays an important role even in treating malignant PMTs in the context of a multimodality therapy. The indications for thoracoscopic surgery, including robotic surgery for the management of PMTs, have been extended with the improvement and refinements of the instruments.^{7,8} However, thoracoscopic surgery remains a choice only for selected cases or a complementary therapeutic option for PMTs.⁹⁻¹²

In our series of 42 cases over a period of 5 years, we operated all successfully without significant mortality and morbidity and without residual disease or recurrence. Most of our patients were from low socio-economic group with age group from 3 to 52 years. Female were more than males 16:26^{13,14} Majority of tumors nearly 50% occupied anterior mediastinal compartment, posterior mediastinum formed 25%, and we had Neurofibroma and Schwannoma.¹⁵ Nearly all tumors were benign except for two cases of Malignant Thymoma^{16,17} which was excised with capsule intact so patient was not submitted for chemotherapy or radiotherapy. We had four patients less than 5 years, diagnosed dermoid cyst^{18,19} and bronchial cyst. Almost all patients were followed up for a period of 1 to 3 years and found no residual or recurrent disease.²⁰⁻²² Proper evaluation and planned incision for surgery helped us to achieve this outcome

CONCLUSION

The mediastinal tumor is a rare presentation which needs tertiary care. In planning the surgical strategies, radiographic images are essential. Chest radiograph is a useful and simple examination to detect and diagnose the tumor according to the mediastinal distinctions. Preoperative thorough clinical and diagnostic investigation is needed for taking up the case for planning definitive surgery.

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