INTRODUCTION

A teratoma is a germ cell tumor made up of embryonic ectoderm, endoderm, and mesoderm, most commonly found in the gonads. The mediastinum is a rare location for a teratoma, accounting for only 7% of germ cell tumors. Mature mediastinal teratomas are often asymptomatic, though they can present with respiratory complaints and/or chest pain. Treatment typically involves complete resection through video-assisted thoracoscopic surgery (VATS).

CASE DESCRIPTION

Chief Complaint:
12-year-old female patient with no previous medical history presented to the Emergency Department with a chief complaint of left shoulder and back pain.

Work Up and Diagnostic Procedures:
Computed tomography (CT) chest revealed a 7.2 x 6.9 cm mass in the left anterolateral mediastinum with suspected phrenic nerve involvement due to an elevated hemidiaphragm and left effusion with an atelectatic lower lobe. A single-port diagnostic and staging thoracoscopy revealed a mature teratoma containing epidermis-like tissue and sebaceous units. Fluoroscopic sniff test showed appropriate diaphragm movement.

Surgical Management:
Thoracoscopic entry was begun at the 8th intercostal space at the mid-axillary line in addition to 2 more 10 mm ports placed superiorly and anteriorly. The anterior portion of the lung lobes was intimately adherent to the tumor. This was maintained en bloc with resection specimens through careful dissection and stapled resection of the space between the pulmonary parenchyma and mediastinum. The phrenic nerve was released from the tumor, maintaining pleura en block with specimen. Dissection was then carried out from an intimate adhesion to the superior pulmonary vein and pulmonary artery, allowing complete separation and skeletonization of the phrenic nerve from the tumor. Remnant superior anterior mediastinal tissue was dissected and resected above the innominate vein to confirm negative tumor margins.

Post-Operative Course:
The patient was discharged home on post-operative day 2 without complications. A follow-up CT Chest 4 months later showed complete re-expansion of lower lobe with no signs of recurrence.

DISCUSSION

Teratomas are uncommon in children. When they are present, they are not typically located in the mediastinum. In those that do have thoracic teratomas, chest pain is a common presenting symptom but the findings of left hemidiaphragm elevation, which suggest phrenic nerve involvement, is much less common. Surgical approach to these masses can be via sternotomy, thoracotomy, or thoracoscopy.

Performing a sternotomy or thoracotomy in any patient is very morbid, particularly so in a 12-year-old. VATS was successful in complete resection of this patient’s mass en bloc and with preservation of her left phrenic nerve function.

This report demonstrates the value and role of a minimally invasive approach to minimize morbidity, chest wall growth alteration, and sound oncologic principles of resection in the pediatric population of centers with the volume and expertise to be proficient at these techniques.

REFERENCES