

## **Modified Clamshell Thoracotomy on a 46-Year Old Male with a Massive Spindle Cell Neoplasm Occupying the Entire Left Hemithorax: A Case Report**

Benign mediastinal tumors may sometimes cause symptoms especially in cases of giant mediastinal tumors – these are tumors that are at least 10 centimeters in widest diameter. These cases may cause mediastinal mass syndrome leading to cardiorespiratory decompensation hence should be addressed through a multidisciplinary approach to achieve favorable outcomes.

A 46-year old male presented with a 20-year history of progressively enlarging intrathoracic mass accompanied by dyspnea, easy fatigability, orthopnea, productive cough, and weight loss. The patient was tachypneic on oxygen support at 2LPM via nasal cannula. He had asymmetric chest expansion with left-sided lagging, dullness and absent breath sounds. The apex beat was displaced at the 5th intercostal space, right parasternal line. Chest radiograph showed a space-occupying lesion with calcifications at left hemithorax causing complete opacification and contralateral deviation of mediastinal structures. Contrast-enhanced chest CT scan revealed a large isodense structure, exhibiting heterogenous enhancement with intralesional calcifications is seen occupying the entire left hemithorax measuring 18.48 x 19.20 x 27.37cm. The lesion causes mass effect seen as compression of the remaining atelectatic left lung, displacement of the mediastinal structures to the contralateral side and tracheal compression with notable fat planes to adjacent structures including the heart and aorta.

Prior to intubation, cardiopulmonary bypass access was established utilizing the right femoral artery and vein in case of hemodynamic or airway compromise. A central line was inserted percutaneously on the left femoral vein. Awake nasotracheal intubation under fiber optic guidance was done and an armored endotracheal tube with an internal diameter of 6 mm was used. Transesophageal echocardiography revealed an incidental finding of a 1.1cm pedunculated homogenous mass at the inter-atrial septum. Given the high-risk nature of a massive tumor resection and excision of a right atrial mass, the relatives of the patient did not consent for the cardiac procedure. A modified clamshell thoracotomy approach was done by incising along the fourth intercostal spaces from both anterior axillary lines, meeting at transverse incision across the sternum and was extended by doing a lower median sternotomy with a left subcostal incision. Dense adhesions were noted to the left parietal pleura and left lung. Multiple parenchymal tears with bleeding were noted along the upper and lower lobes of the left lung after rigorous adhesiolysis. Negligible expansion was noted after attempted forced ventilation of the left lung, hence proceeded with left pneumonectomy. The postoperative course of the patient was unremarkable and was asymptomatic on follow-up 2 months after surgery. The final histopathology of the tumor showed a low grade spindle cell neoplasm with primary considerations of a leiomyoma or schwannoma.

Meticulous preoperative planning and multidisciplinary meetings are important in cases of large mediastinal masses due to the risk of cardiorespiratory decompression among other possible complications. Patient's health status and urgency of intervention should be put into consideration in cases of unexpected intraoperative findings prior to making a surgical decision.