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Case Report

Removal of Giant Solitary Pleural Fibroma from a Patient on Oxygen Therapy

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Abstract

Solitary pleural fibroma is a rare neoplasm occurring in less than 5% of all pleural tumors. We present a case of solitary fibrous tumor of pleura in a 66 year old lady, who presented in a critical condition. To our best of knowledge this case is one of the largest pleural fibroma removed, which was reported in the literature. Radiological examinations are provided and surgical intervention described in detail.

Keywords: *Solitary Fibrous Tumor; Pleura; Surgical Treatment*

Introduction and Case Report

A 66 year, old lady presented at our hospital in a critical condition. She was complaining of chest pain and shortness of breath. She was on oxygen therapy and unable to keep saturations above 88%.

Her symptoms started more than 12 months before first presentation to hospital. Initial biopsy was taken at an overseas hospital, which showed lymphoma, a second biopsy at her local hospital showed benign fibroma. However she was refused surgery due to very large mass and deteriorated clinical condition.

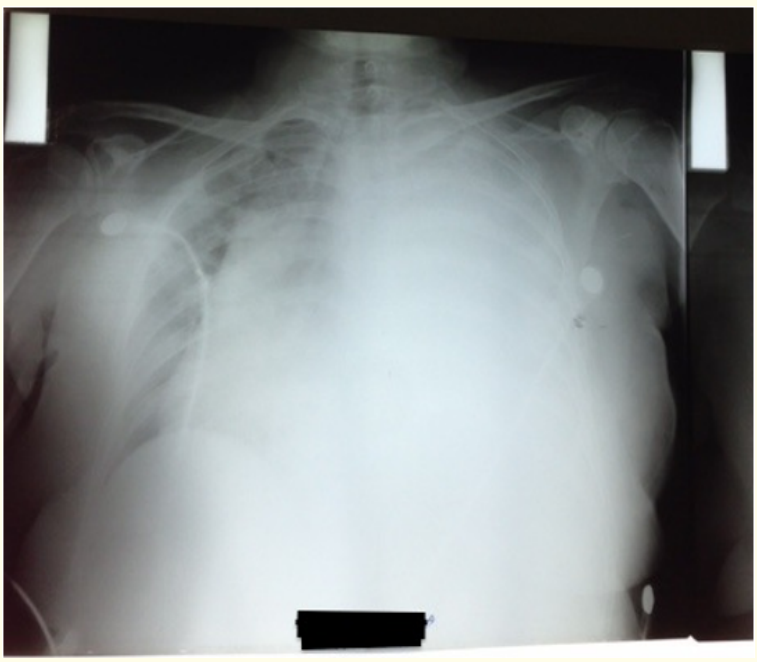

Figure 1: *Preoperative chest radiography, showing opacity of the left haemithorax. Trachea and the heart are shifted to the right.*

Surgical procedure

Patient was anesthetized and intubated with double lumen, right sided endo-tracheal tube. Central line was inserted on her right jugular vein and arterial monitoring through right radial artery. Her saturation was 84 - 86%. Patient was prepared and draped in standard fashion for left posterior-lateral thoracotomy. Due to hemodynamic compromise, Noradrenalin was started. Thoracotomy at her fifth inter-costal space was performed. It was impossible to enter the thoracic cavity due to the size of the mass and adherence to the chest wall. Dissection with diathermy was used to free the access into the chest. Initially the mass was freed from adhesions towards the apex, however due to the large size, a second inter-costal opening between seventh and eighth rib was performed. A large arterial feeding vessel was identified on the diaphragmatic surface of the mass. The tumor was divided with diathermy in two large pieces in order to remove it from the chest cavity. Size of the tumor was 41 cm in length and weighted 3.4 kg (Figure 2).

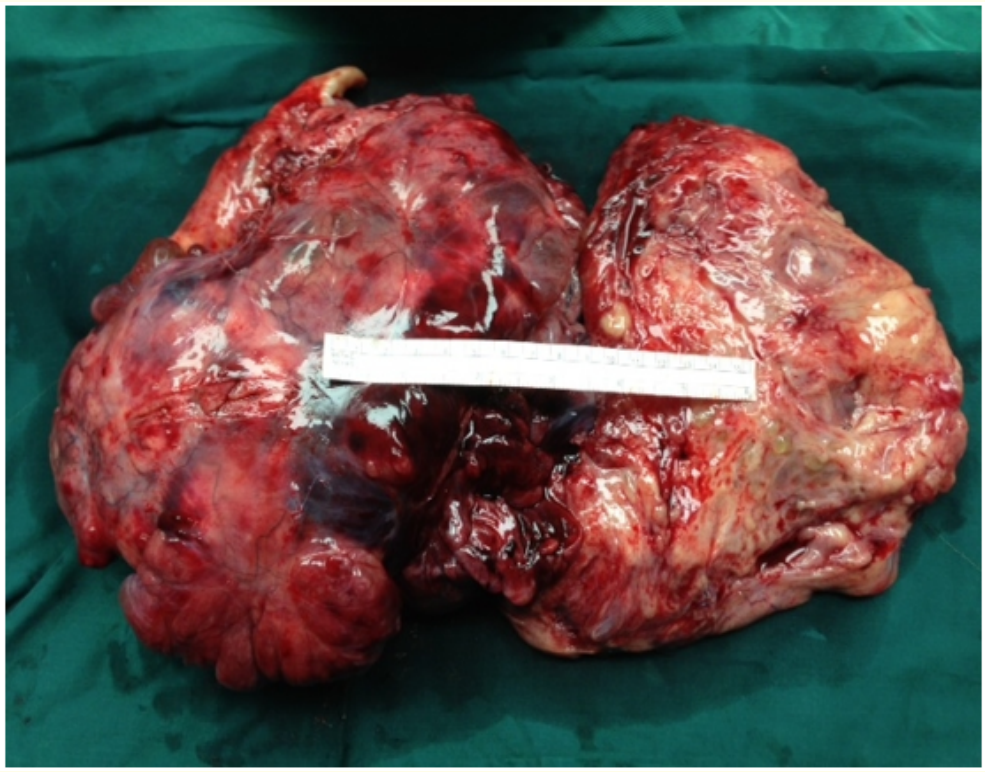

Figure 2: *Intraoperative picture of a large fibroma removed from the left side of the chest.*

Hemodynamic condition improved and Noradrenalin was stopped. Left lung inflated normally and saturations returned to normal.

Patient was transferred to intensive care unit in stable hemodynamic condition and was extubated 4h later, maintaining normal saturation. Her chest radiography post-operatively looked normal, with the lung fully inflated and the mediastinum shifted back to its normal position (Figure 3). Patient remained in intensive care unit for 24h and transferred to the ward were she stayed for further 5 days. She was discharged home on her sixth postoperative day. Her radiographic imaging was normal.

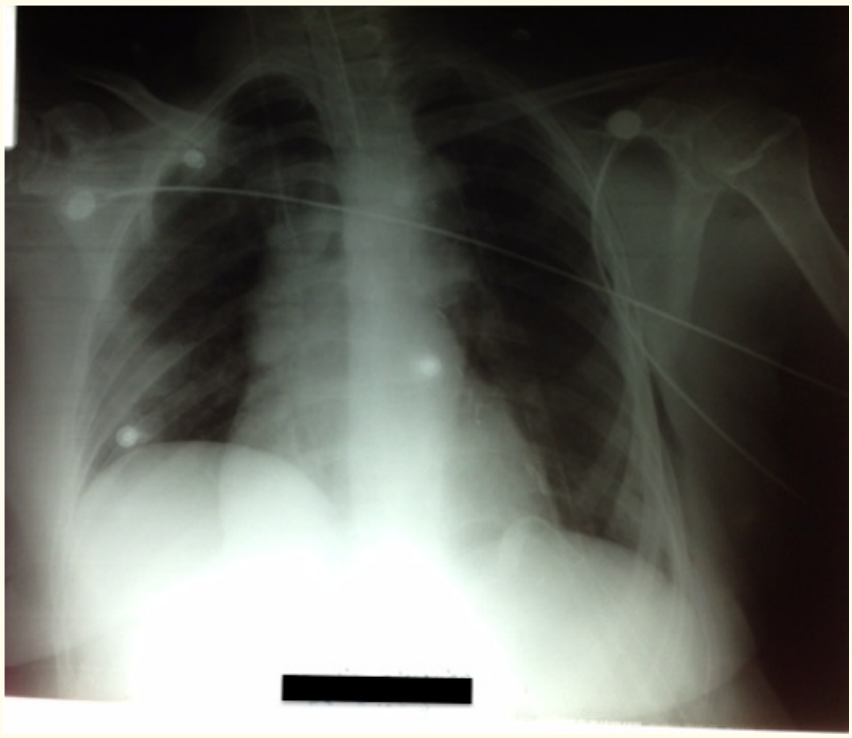

Figure 3: *Postoperative chest radiography, showing reexpansion of the left lung. Trachea returned to normal position and the heart started to shift towards the left. Two chest drains are seen in the left haemithorax.*

Discussion

Pleural fibrous tumor is a rare neoplasm originating from mesenchymal tissue. They occur in a region of 2.8 cases per 100.000 persons per year [1,2]. Pleural fibroma was described for the first time in literature by Wagner in 1870. In 1931, Klemperer and Robin classified pleural fibrous tumor as an independent disease [3]. In 2006 Robinson conducted a review of fibrous tumors, he found 800 cases reported in literature since 1931 [4]. Up to date approximately 1000 cases has been reported in the literature.

Solitary pleural fibroma has been reported in all age groups, with peak incidence in 60 - 70 years of age. Gender distribution is equal between both sexes, although some studies show a predilection for woman [5]. Majority of patients are symptom free until the tumor advances in size, were compression of adjacent structures will start causing symptoms such as chest pain, dyspnea and cough. In asymptomatic patients diagnosis is based on incidental finding.

In our patient symptoms started only after tumor reached enormous size and started compressing organs around. Although symptoms started years before, patient refused seeing the doctor until she reached the stage when she was unable to maintain normal breathing and was started on oxygen therapy.

CT of thorax is the best examination, showing a well differentiated homogenous mass; however not all fibromas are homogenous, heterogeneity has been described as well [5]. Differentiation between benign and malignant fibromas cannot be made by CT scan therefore a biopsy might be required, although some studies have shown that accuracy of CT guided biopsy is in a region of 16 - 45% [5,6] these results are very low and they demonstrate that preoperative biopsy is of limited assistance in diagnosing fibromas. Many authors do not recommend Ct guided biopsy [5].

In our patient CT guided biopsy was performed in two different centers with only one center giving the true diagnosis. This confirms what other colleagues have demonstrated, that CT guided biopsy has limited accuracy.

Complete surgical resection remains the main treatment for both types of fibromas, malignant and benign. Clinical outcome will depend on completeness of resection [1]. Pre-operative imaging its crucial in defining the size of the tumor, location, invasion into other structures and vascularity of the tumor. Our patient unfortunately presented very late to the hospital. The size of the tumor was large, that caused shifting of the mediastinum to the right, compromising the right lung and hemodynamic state. She was refused operation in two other hospitals, mainly due to the very large size of the tumor. She was sent home on oxygen therapy. We offered her an operation only as her last chance of survival. Surgery was very challenging due to the hemodynamic compromise caused by returning the patient on the side. We opted to perform a left posterior-lateral thoracotomy, initially on the 5th inter-costal space and mobilize most of the tumor, then entering the 8th inter-costal space in order to divide the vascular pedicle of the tumor. The tumor was removed in two large pieces.

Patient made a good recovery and left lung inflated normally. She was discharged home after six days in hospital. At 30 days follow up, she made a good recovery and was back to her normal life.

Recurrence of these tumors has been reported even after seventeen years from surgery and is more likely to happen in malignant solitary fibromas [1]. Therefore long follow up is important.

Conclusion

Although fibromas can be very large, refusing the operation to a patient who otherwise was healthy should not be an option. Removal of these giant masses can be done safely and these patients can go back to their normal life, which otherwise would have been terminated early.

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