



**PALLIATIVE AND CURATIVE LEFT PNEUMONECTOMY FOR A HUGE MALIGNANT SOLITARY FIBROUS TUMOR OF THE PLEURA IN AN OLD MAN. A CASE REPORT**

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**ABSTRACT**

A left pneumonectomy has been performed for a gigantic pleuropulmonary neoplasm in an old man who was in satisfactory clinical condition. The only symptom were cough and worasening dyspnoea. Despite the aggressiveness of the tumor, that has high rate of recurrence at 5 years, the patient has been curated with excellent oncological clearance and the best symptom palliation has been reached. Palliative surgery has to be evaluated also on a patient basis and not only on the basis of the risk of morbidity and mortality.

**Key words:**

gicgantc solitary fibrous tumor of the pleura, left pneumonectomy, palliation

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**INTRODUCTION**

In Literature up to 800 cases of solitary fibrous tumor of the pleura [1,3] have been reported, and these data confirm its rarity. Males and females are equal distributed and this is also for age. No correlation with exposure to asbestos, tobacco or other enviromental agents has been found for its development. Solitary fibrous tumor of the pleura was initially classified as “localized mesothelioma”, but recently with the aid of electronic microscope and immune his to chemistry has been possible emphasize that their origin is mesenchymal and not mesothelial. This is the reason why *nowdays* we prefer to use the term “solitary fibrous tumor of pleura”(SFTP) *insted* to call it “localized mesothelioma” [4]. Although most of SFTP are benign neoplasms, a part of these could have a malignant behavior. SFTP may remain silent for many years before turning into maligant form [5]. Most patients with SFTP become symptomatic when these tumors reach large size [2,6,7]. The symptoms are cough, chest pain and dyspnoea and if there is obstruction of the airway also hemoptysis and pneumonia [2,6] can be observed. Paraneoplastic syndromes, such as digital hypocratism and Pierre-Marie-Bamberg syndrome, are observed in 10-20 % of cases and specially with large size SFTPs. In less than 5% of patients with SFTPs an increase of insulin-like factor II type occur and this cause refractory to therapy hypoglycemia (Doege-Potter syndrome) [6,8,9]. Some patients may also present gynecomastia or galactorrhoea [1].

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Sometimes large size SFTPs may appear with unusual clinical presentation. Santambrogio *et al.* [10] described a case manifested with coughin and syncope and Shaker *et al.* [11] reported the case of a woman with lower limbs edema and dyspnea caused by a bulky SFTPs compression tom the right atrium and the inferior vena cava.

**Clinical Case**

A male aged 86 ys old has come to our observation on January 2019 because of a huge neoplasm of the left hemitorax .He lives alone and worked as a bricklayer , is a former smoker, doesn't refer alcohol assumption and no allergies. Suffers from diverticulosis and cholelitiiasis and in 2011 he was submitted to removal of colon polyps. Since 2009 he was diagnosed hypothyroidism and in 2013 he was found affected of anemia. He is also affected of depression, blood hypertension and bilateral iliac-femoral atheroma. He has been operated on for cataract to the left eye. On spring 2018 he had an important head traumatism but CT scan was negative and there were no consequences. From summer 2018 he started with worsening dyspnoea. On 12/11/2018 his general practitioner prescribed chest X – Ray. Since a huge left pleural effusion has been detected the patient was sent to the Emergency, then he has been recovered in Pulmonology Unit. O.E...: dullness of lower 2/3 of left hemitorax, important vesicular breathing decrease. No peripheral oedema. Rythmic but not so well audible heart sound. Palpation of abdomen revealed indolent , normal organs of hypocondrium . Drumstick fingers (Picture 1).



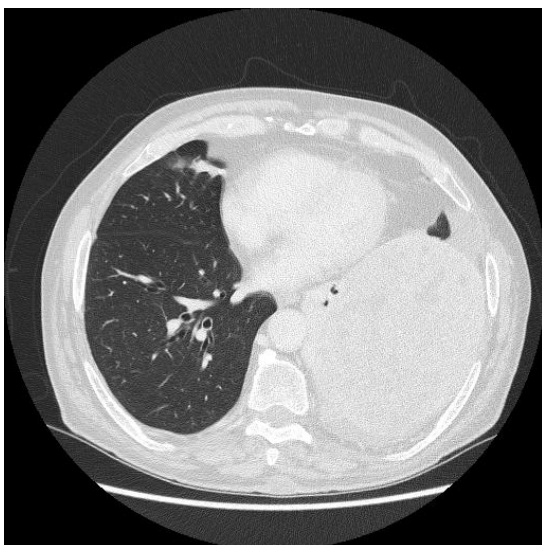
Picture 1 Clubbing

Cardiorespiratory parameters were: O<sub>2</sub> Sat 93% at rest, Heart Rate 93/min. Home therapy was: Simvastatin 20 mg/die, Cardioaspirin 100 mg/die, Pantoprazole 20 mg/die, Furosemide 10 mg/die, Ramipril 2,5 mg x 2 /die and Paroxetina 20 mg/die.

Once he was admitted in Pulmonology Unit patient has been submitted to chest CT scan (16/11/2018) (Picture 2 and 3)

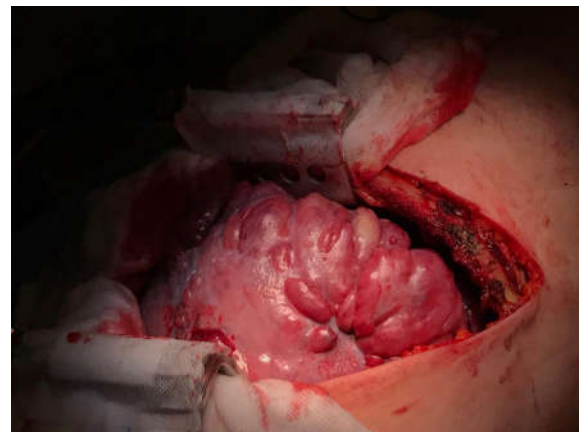


Picture 2 Huge neoplastic mass within left hemitorax



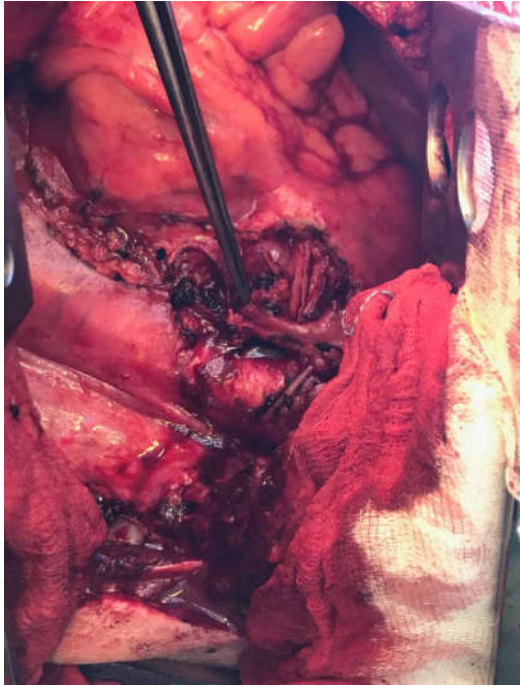
Picture 3 Huge neoplastic mass within left hemitorax

that showed a gigantic mass within left hemitorax with consensual pleural effusion (sized 17x10 cm antero-posterior and 16 cm from top to bottom), no mediastinal adenopathy was found. Abdomen CT scan was negative. After introduction of a needle into the pleural cavity 1.400 cc of turbid pleural fluid has been taken out. Cytology: serum-fibrinoid deposits, mesothelial and inflammatory cells. Quantiferon: negative. Bronchoscopy showed "ab extrinseco" compression on the left bronchial tree. Trans-bronchial biopsies have been taken but resulted ineffective. This is the reason why on 11/12/2018 FNAC has been executed and the result was "mesenchymal proliferation of spindle cells with wide collagenous fibro hyalin amount, positive to CD34, BC and negative to CK7, CK8/18, Calretinin, EMA, S100, WT1, Actin 1A4 and Desmin. Immunophenotypic profile suggests the diagnosis of solitary fibrous tumor of pleura". Then patient came to our observation and his case has been discussed within the chest-pathology multidisciplinary group. The final decision was to submit surgery. Pre-operative investigations were: EGA in range; DLCO: middle level reduction of CO transfer, Spirometry: FEV<sub>1</sub> 1.49 over a theoretic value of 1.84, FEV<sub>1</sub>/FVC 85 over a theoretic value of 72 (slight restriction), bronchoscopy showed indirect aspects of ab extrinseco compression on the left bronchial tree, cardiologic evaluation found good heart function (>4 METs), asymptomatic. Global pump function of left ventricle was found normal. On 27/02/2019 patient received a left thoracotomy on 5th intercostal space. After pleural cavity has been open we removed 1.600 cc of citrine fluid and a gigantic mass involving the entire left lung and occupying the whole pleural space appeared (Picture 4)



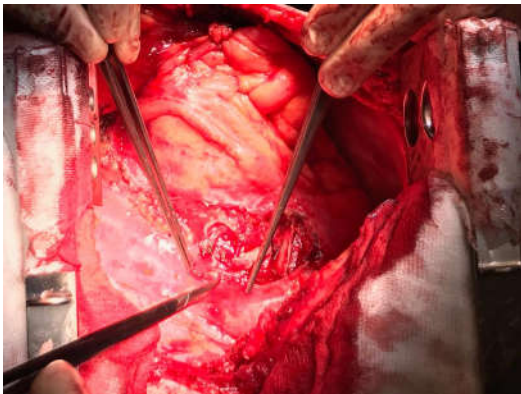
Picture 4 Huge neoplastic mass at left thoracotomy

Such dimension of the tumor required to enlarge thoracotomy anteriorly towards epigastric, as for an access for thoraco-freno-laparotomy, with consensual resection of the 6th rib anteriorly. The complete examination of the left lung showed a complete hepatization of the left lower lobe and an almost complete hepatization of the left upper lobe, of which the apex only was ventilated. The hilum of the lung was very difficult to divide and pneumonectomy revealed to be the only kind of feasible intervention (Picture 5).



**Picture 5** Left Pneumonectomy has been performed

The procedure has been completed with the mediastinal sampling (lymph nodes level 5 and 7 were taken, that resulted negative at frozen section) and the bronchial stump was covered with a flap of mediastinal peri-aortic pleura as we are in the habit to do in case of pneumonectomy is performed (Picture 6).



**Picture 6** Preparing the pleural flap for the bronchial stump

Once the specimen has been removed its weight was 2.100 gr. (Picture 7)



**Picture 7** Surgical specimen: left lung

The examination of specimen has been as follows: “*totally deformed left lung containing a 20 x 15 cm neoplasm. Mesenchymal tumor with spindle cells, focal necrosis and 8 mitosis/HPF. Morphologic and immunophenotypic profile suggesting malignant solitary fibrous tumor of the pleura. Immunophenotype: STAT6:+, CD34:+, S100: -, Smooth Muscle Actin: -, Caldesmon: -, Desmin: -*”

## DISCUSSION

This old patient, despite of the advanced age, had no important comorbidities and the only symptom he referred was worsening dyspnoea. Indication for surgery was based not only on the need of an oncological clearance, but we also considered the best palliation for his symptoms. The good clinical condition which patient presented, even if his left lung was inefficient by all means, played a fundamental role in the decision making. In fact after the left lung has been removed it was possible to note an important improving of blood arterial gas because of the lacking of shunt effect. Patient was regularly extubated and sent to the ward. Post-operative period was uneventful and ventilation maintained excellent. In 12th P.O. day patient has been discharged. In this case SFTP presented as a sessile tumor with histological characteristics of clear malignancy (high number of mitosis, necrosis, hypercellularity). According classification of De Perrot [5] this kind of neoplasms associates to a recurrence rate of 63% and to a mortality of 30% within 2 years. Nonetheless we think that for this patient pneumonectomy has represented not only the correct oncological therapy of a locally advanced pleuropulmonary neoplasm, but also the best palliation one could offer him. Regarding this point we can remark as neoplasm has grown up rapidly from November 2018, when it was 17 x 10 cm, to February, when diameters of the mass measured 20 x 15 cm. So if we consider how rapidly the neoplasm developed it is reasonable to hypothesize that the mass wouldn't be resectable within other 2 months and patient will surely deteriorate his respiratory and systemic symptoms. Moreover we remark that in this case only the surgical specimen has driven to a correct diagnosis of malignancy. So also in this case the previous diagnosis of solitary fibrous tumor of the pleura with FNAB was not exhaustive. As what assistance to patient concerns the support of relatives has revealed fundamental, with whom we had a speech before and after intervention. As told in previous works (12, 13), contribution of relatives is very important and allows to ameliorate assistance to patients in the brief and long term post-operative period.

## CONCLUSION

In conclusion we can assert that for this old man with left locally advanced pleuropulmonary cancer the choice of performing a pneumonectomy has been correct by all means nevertheless the age. Absence of comorbidities and good health condition reinforced the indication for such an important intervention as left pneumonectomy. In other terms, as we can observe in Literature, also in this case the old age of patient didn't represent an absolute contraindication for surgery, even if it was a huge and no mini-invasive operation. This case drives to criticize the common opinion that palliative surgery has to be considered only on the basis of morbidity and mortality, while probably could be better to outline its

benefits in terms of ameliorating quality of life. (14). Most studies infact still focus on morbidity and mortality since palliative surgery has been recognized having only increased risk for complications , although recent studies demonstrate clearly an important improvement in this regard. This is the reason why the benefits of palliative surgery should focus mainly on quality of life, symptoms control and prevention. So it is clear how further investigations are required to ameliorate the definition of successfully outcome for palliative surgery and hopefully to include outcomes assessment on a patient basis.

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