Pulmonary hamartoma, the most common benign tumor of the lung, is most often presented as a solitary pulmonary nodule of a peripheral localization. We report a case of a large, centrally located, invisible in chest X-ray, histopathologically (PH) verified hamartoma. A 63-year-old male was admitted for hospital treatment with obvious symptoms and signs of right-sided lobar pneumonia. His treatment was started with a combination of antibiotics Ceftriaxone and Ciprofloxacin. Because of his obviously bad condition with wheezing and bronchial secret in his lungs, an urgent bronchoscopy was performed. A huge amount of bronchial secret was found in his bronchial tree and, surprisingly, a tumor in the upper left lobe. For further evaluation computed tomography (CT) scan was performed and it verified right pneumonia but, it also revealed large (13.3x11.2mm) endobronchial tumor in upper left lobe which wasn’t clinically or radiographically presented. From a bronchobiopsy, we received an inconclusive PH finding. It was concluded that the best treatment is a surgical sleeve resection lobectomy, which was performed. Definite pathohistological finding was hamartoma and the patient was successfully healed.

Keywords: hamartoma; pneumonia; bronchoscopy; sleeve resection.

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1. INTRODUCTION
Most common tumor of lungs (tracheobronchial tree) is malignant. However, in rare cases benign tumor also exist as endobronchial tumor (hamartoma, lipoma, leomyma). Those are benign tumors with a good prognosis and availability of definite healing if they are diagnosed on time. In this report we describe a patient with massive pneumonia and lung hamartoma, which was discovered by accident.

2. CASE REPORT
A 63 year old man presented with short term high fever, cough and fatigue. His clinical status showed signs of pneumonia in right lung with high SE 90, Le 12 and CRP 150. Chest x-ray showed massive pneumonia in lower right lobe with signs of consolidation in upper left lobe. For further evaluation computed tomography (CT) scan was performed and it verified right pneumonia (Figure 1) but, it also revealed large (13.3x11.2mm) endobronchial tumor in upper left lobe which wasn’t clinically or radiographically presented (Figure 2). Bronchoscopy showed tumor in the incipient part of the bronch for upper left lobe which extended to the left main bronch (Figure 3). Initially, benign endobronchial tumor was suspected, biopsy was performed twice but histopathologic evaluation of bronchoscopic biopsy material showed only adipose tissue, which was inconclusive (Figure 4). Safe bronchoscopy (immunofluorescent bronchoscopy) confirmed these findings without a defect in coloring mucosa. Patient was treated with cephalosporins and chinospons in adequate dosage for 7 days. After that treatment x-ray was performed again and it showed complete response in the right lung but still without a tumor in the left lung. Having in mind that PH findings were inconclusive but with endobronchial localization of the tumor, we came to conclusion that it was indicated to perform surgical treatment of the tumor to prevent irreversible pulmonary damage distally. The upper left lobe was entirely removed surgically (sleeve resection), patient was fully recovered and dismissed with normal X-ray and clinical findings.

3. DISCUSSION
Pulmonary hamartomas or mesenchymomas are the most common form...
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Figure 2. Tumor in left upper lobe bronchus

Figure 3. Bronchoscopic view of intraluminal tumor

Figure 4. Histology

of benign lung tumors with an incidence of between 0.025% - 0.32% according to different necropsy studies (1). They constitute 75% of all benign lung lesions (1). It hasn’t been proved that race or smoking habit increase the frequency of pulmonary hamartoma but it has been noticed that hamartomas occur more in men than women (2:1 or even 3:1) (2). The peak incidence is between the fifth and sixth decades (1, 2). The exact etiology of pulmonary hamartomas is unknown, although several theories have been postulated, including that these hamartomas result from hyperplasia of normal lung tissues, a cartilaginous benign neo-

plasm, or a response to inflammation (3). Usually hamartomas are composed of tissues that are normally presented in lung, including adipose, epithelial, fibrous tissue and cartilage. The histology of the parenchymal lesions usually reveals a predominant chondroid differentiation (80%), with fibroblastic (12%), fatty (5%) and osseous (3%) differentiation making the rest (3, 4, 5). In our case it was predominantly made of adipose differentiation. More than 90% of hamartomas are peripheral and less than 10% are located centrally, in the connective tissue of small bronchi (4). Pulmonary hamartomas are most frequently asymptomatic and typically discovered incidentally as coin lesions on a routine chest x-ray in size from 1 cm to 8 cm in diameter in various series. Occasionally they can be located endobronchially but in the beginning they rarely cause any symptoms, later they can cause coughing, expectoration, wheezing, recurrent obstructive pneumonias with fever and leukocytosis, even in some cases haemoptysis, bronchiectasis, atelectasis, and eventually destruction of parenchyma distal to the tumor occlusion. In our case the size of the tumor was 13.3x11.2mm and it didn’t cause any such symptoms. Most are discovered incidentally on routine radiography and require CT scan for further evaluation. However, in 30% of cases, CT findings clearly indicating a benign lesion (calcifications, fat) are absent, and bronchoscopy, percutaneous biopsy, or open biopsy may be necessary for definitive diagnosis. Endobronchial hamartoma usually appears at CT as a lesion with a smooth edge, focal collections of fat, or fat collections that alternate with foci of calcification (5).

Pulmonary hamartomas have little or no malignant potential but they have potential of growth. Presented as peripheral lesion, they are usually simply observed after a definitive diagnosis but in cases of central localization of the tumor treatment usually includes local resection through a bronchoscope or a bronchotomy incision (3). In our case, because of the size and the localization of the tumor local resection was impossible and, to prevent obstruction of the lung, it was necessary to remove the upper left lobe after thoracotomy.

Differential diagnosis would suggest bronchogenic carcinoid, Non-small or Small cell carcinoma, arteriovenous malformation, metastases in lung, lymphoma, granuloma, etc. (6). The value of our case lies in size and central presentation of this tumor which was incidentally discovered during the treatment of contralateral pneumonia. Bronchobiopsy, performed twice, including safe bronchobiopsy also didn’t give positive PH verification of hamartoma because of the high percentage of fat tissue. The localization of the tumor indicated surgical treatment with sleeve resection of the main bronch; the possibility of any other treatment (cryotherapy, laser) was excluded because of the size and localization of the tumor and, therefore risk of causing the atelectasis of the lung in near future (2). Centrally located pulmonary hamartoma represent rare case of hamartoma that is most often diagnosed incidentally in early stage. Due to its extensive growth, it can easily cause an atelectasis of the lung with respiratory insufficiency as its consequence. Because of the various types of tissues that compose this tumor it is very difficult to get PH verification by bronchobiopsy. In conclusion, in case of tumor centrally located, without damaged mucosa, without signs of enlargement of lymph nodes in mediastinum, it should always consider pulmonary hamartoma. Our case showed successful treatment of hamartoma with central localization.

REFERENCES