

PULMONARY SEQUESTRATION OF THE RIGHT UPPER LOB IN A WOMAN

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SUMMARY

We present an unusual case of a young woman with a several-years history of bronchopulmonary infection, symptomatic on the right side, who underwent complete noninvasive studies showing a benign pulmonary lesion in right upper lobe. A right upper lobectomy was performed. Histologically, a typical intralobar sequestration was found.

ÖZET

Bir kadın hastada sağ üst lobda pulmoner sekestrasyon

Bir kaç yıldır sağ tarafında semptomatik bronkopulmoner enfeksiyon bulguları veren bir genç hanım hastayı sunuyoruz. Noninvaziv çalışmalar iyi huylu bir lezyon olarak gösteriyordu. Sağ üst lobektomi yapıldı. Mikroskopik olarak tipik bir intralober sekestrasyon saptandı.

INTRODUCTION

Intralobar pulmonary sequestration (ILS) in an upper lobe is uncommon. Pulmonary sequestration has generally been considered a congenital malformation, mainly because of the presence of one or more systemic arteries to the sequestered portion of lung. There are ILS and extralobar pulmonary sequestration (EPS) forms, the intralobar form embedded in normal lung and the extralobar form separated from adjacent lung by its own visceral pleural investment (1,2,3,4,5). It is defined as an area of nonfunctioning abnormal lung tissue which characteristically has no connection with the tracheobronchial tree (5,6). The venous drainage of the extralobar type is usually into the systemic venous system, whereas the intralobar type drains into the pulmonary venous system (2,7). ILS are three to six times more frequent than EPS (1). Intralobar

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sequestration is almost always located posterobasally in the lower lobe, with a left-side preponderance (2,4).

CASE REPORT

A 34 year old woman was admitted to Department of thoracic surgery with, dyspnea, general fatigue and-productive cough. She had noted recurrent attacks of "bronchitis" accompanied by right-sided chest pain during the previous three years. A chest roentgenogram showed an opacity in the anterior segment of the right upper lobe (Fig.1).

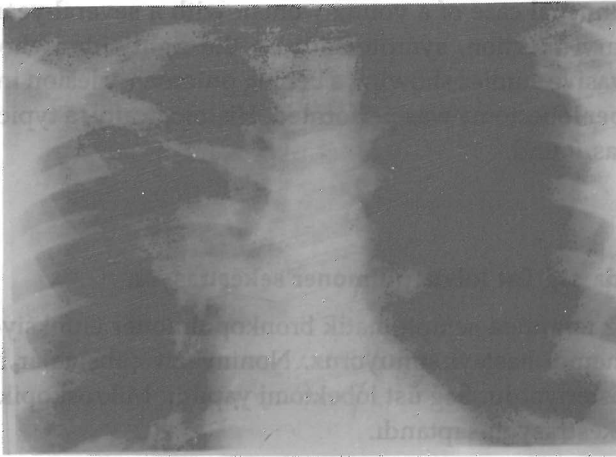


Figure 1: Chest radiographs shows opacity of the right upper lobe.

Routine biochemical and haematological investigations showed no abnormality. Bronchoscopically, normal segmental bronchi in both lungs was noted. Computed tomographic (CT) scan showed a solid mass within the right upper lobe anterior segment. Discrete infiltrative signs within the right posterior and apical segments were also present (Fig 2). A systemic artery was not shown by CT. The pulmonary perfusion scan with $^{99m}\text{TcMAA}$ showed a perfusion defect in the right upper lung field (figure 3). Diagnostic thoracotomy was planned and a right postero-lateral thoracotomy was performed. A right upper lobectomy was decided on because an irregular mass (about 4x6 cm) was found occupying the upper lobe anterior segment, with severe collateral inflammatory infiltration around it and extending into the apical segment. Before lobectomy a wedge resection of the mass was done. A small artery was found and it was going toward the sequestered segment. This artery was divided. No systemic venous return was identified. A right upper lobe lobectomy was completed. The patient recovered very well, with excellent clinical improvement, and returned normal life. The pathological report showed pulmonary sequestration with acute and chronic infection and cavitory lesions (Fig 4,). Biyopsi No.34-93.

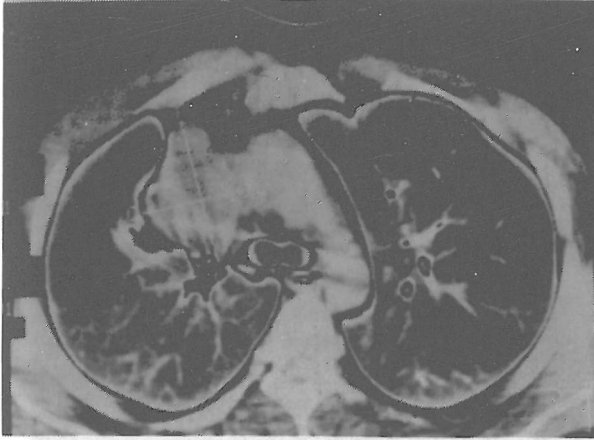


Figure 2:CT scan of the same patient. The lesion, appears as a soft-tissue mass within the lung.



Figure 3:Perfusion scan showed a defect in the right upper lung field.

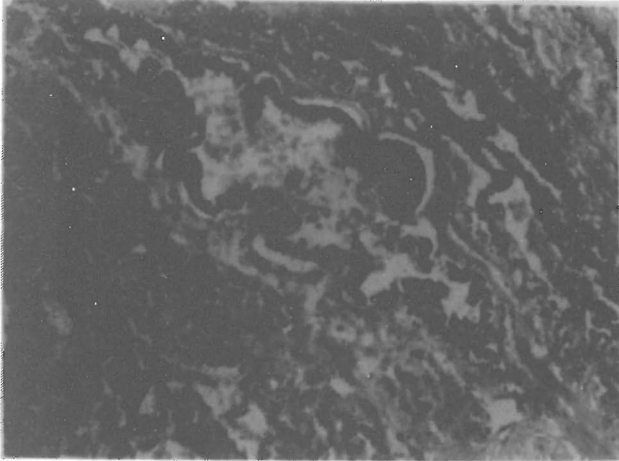


Figure 4: Photomicrograph showing thick-walled intercommunicating cystic spaces and vascular rich tissue containing numerous macrophages (H+E,x40).

DISCUSSION

Intralobar sequestration is almost always located posterobasally in the lower lobe. Reported in the literature, authorities found that approximately 98 % of pulmonary sequestrations involved the lower lobe (1,2,4,6). This suggests that upper lobe intralobar sequestrations are rare. The symptoms of intralobar pulmonary sequestration in older children and young adults are respiratory in origin (5,8,9). ILS can be recognized as radiopaque areas within normal pulmonary tissue associated with symptoms and signs of pulmonary infection and bronchiectasis (9,7,10). Recurrent fever, chills, cough, pleuritic pain, and purulent sputum production are the most common signs (6,9,11). An intralobar sequestration usually becomes manifest clinically in the first two decades of life. Gustafson reported 10 patients, ranging 5 to 39 years, underwent operation for an intralobar sequestration (11). The usual radiographic finding is a cystic or solid mass in the base of the lung. ILS exhibit various morphological features such as pseudotumors, and atelectases. Other findings include normal appearing lung, hyperlucent areas a combination of solid and cystic masses, and pneumonia (2,7,8,9,12). Radiographs in our case showed solid mass. Congenital anomalies and secondary lesions such as tuberculosis and parasitic infestations are occasionally observed in association with bronchopulmonary sequestrations, but neoplasms are rare (5,8,9,10,12). Computerized tomography and magnetic

resonance imaging can confirm the diagnosis of pulmonary sequestration. Ikezoe at all and Schulman at all showed the value of noninvasive techniques (2,3,6,13).

Definitive diagnosis has generally been made by angiographic demonstration of an abnormal artery and supplying the lung. Most of these arteries arise from the thoracic or abdominal aorta. In rare cases the abnormal vessel may arise from the celiac, innominate, subclavian or bronchial arteries (6). In our case a systemic artery was not shown by CT, presumably because of unfavorable orientation or small size of the vessel. Surgery is the rule in case of doubtful diagnosis or to treat symptomatic sequestration (5). The patient was operated on with a presumptive diagnosis of benign pulmonary mass by noninvasive methods. Pathological findings in operative specimen was consistent with intralobar pulmonary sequestration.

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