A rare intrathoracic mass: Accessory liver lobe

Nadir bir intratorasik kitle: Aksesuar karaciğer lobu

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ABSTRACT

A heterotopic, supradiaphragmatic liver tissue is an extremely rare entity. It is usually asymptomatic and is often detected incidentally. Herein, we report a female case who had cough-induced occasional back and chest pain and in whom an intrathoracic paravertebral mass was radiographically detected.

Keywords: Accessory liver, intrathoracic mass, supradiaphragmatic liver, thoracoscopy.

ÖZ

Heterotopik supraddiaphragmatik karaciğer dokusu oldukça nadir bir patolojidir. Genellikle asemptomatiktir ve siklikla rastlantı olarak saptanır. Bu yazıda, öksürük ile aralıklı sırt ve göğüs ağrısı olan bir kadın olgu sunuldu.

Anahtar sözcükler: Aksesuar karaciğer, intratorasik kitle, supradiaphragmatik karaciğer, torakoskopi.

In this article, we report a rare case of an accessory liver lobe (ALL) in the light of literature data.

CASE REPORT

A 26-year-old female patient presented to our hospital complaining of cough and occasional chest and back pain. Her medical history revealed no prior surgery or trauma. Computed tomography (CT) revealed a lesion approximately 2.9×1.7 cm in size, having a soft tissue density in the posterior neighborhood of the inferior vena cava in the right hemithorax in the right lateral region of the esophagus (Figure 1a, b). No fluorodeoxyglucose uptake was found on her positron emission tomography (PET)/CT. A CT angiogram was taken to evaluate its association with the aorta; however, no such association was found. The forced expiratory volume in one second (FEV₁) value was 2.0 L (73.8%), and the FEV₁/forced vital capacity (FVC) value was 80.75%. Surgery was decided for the diagnosis and treatment. A written informed consent was obtained from the patient.

A single-port video-assisted thoracoscopic surgery (VATS) was performed. A brown, encysted, and smooth-surface lesion was visualized neighboring the inferior vena cava and esophagus at the paravertebral solid component. An exploration showed that the lesion extended medially toward under the diaphragm, and a biopsy was taken with the suspicion that it could be a liver tissue. The frozen-section revealed a normal liver tissue, and the operation was completed without any resection. The patient was discharged without any postoperative complications. Three-dimensional (3D), contrasted magnetic resonance imaging (MRI) was performed for the demonstration purposes. On MRI, a well-contoured, accessory liver was seen extending toward the left liver lobe in the lower thoracic region.
at a prevertebral distance (Figure 1c, d). Paraffin-embedded sections also confirmed that it was a normal liver tissue (Figure 2a, b).

**DISCUSSION**

The heterotopic, supradiaphragmatic liver tissue is an extremely rare entity. An ALL may be associated
with an anomaly which developed in the embryological period or it may occur after a trauma or surgery.[1] It is mostly seen in the neighborhood of abdominal structures, such as the gallbladder, spleen, pancreas, umbilicus, adrenal gland, and omentum; however, it can be also located in the thoracic cavity, although rare.[2]

Abnormal localization of the liver tissue occurs in two ways. While it is called an ectopic liver when it is not connected to the normal liver tissue, it is classified as an ALL when it is connected to the liver lobe.[3] Although they are asymptomatic in most cases, they may result in chest pain, coughing, hemoptysis, or dyspnea.[4] In our case, the patient experienced back pain. Two months after the operation, her pain was spontaneously regressed. At six months, pain completely resolved. We believe that the complaint was not associated with the lesion, due to reduced pain in the postoperative period.

Furthermore, ALLs are frequently encountered along with paravertebral lesions. Due to its localization, an ALL can be interpreted as a pulmonary tumor, pleural tumor, pulmonary sequestration, neurogenic tumor, or hydatid cyst. It is not always possible to detect the lesion on a posteroanterior chest X-ray in ALL cases. A 3D contrast-enhanced CT of the thorax and upper abdomen is often useful for the evaluation of any abdominal extension of the mass and its association with the surrounding vascular structures. An MRI scan can be also used specifically for the assessment of the association of the mass with the lung parenchyma and liver.[5] Revealing the vascular relationship of the mass with the liver using hepatic angiography is another diagnostic method used for the accessory liver tissue. In our case, a transthoracic needle biopsy and hepatic angiography were not performed, as the preliminary diagnosis of this lesion was a paravertebral neurogenic tumor.

Diaphragmatic integrity is impaired in liver herniation in ALL patients, unless the diaphragm integrity is constantly maintained. Rarely, diaphragmatic defects are seen in 29% of cases.[3,4] In our case, liver herniation was not considered due to the fact that it was connected to the pedicle by normal liver tissue, intact of diaphragm during thoracoscopic exploration, and lack of a trauma history. In a report, Chen et al.[5] presented 23 cases in the English literature. Eighteen of these cases had an involvement of the right hemithorax, and most of the thoracic liver cases had a connection to the normal liver with a pedicle passing through the diaphragm. To the best of our knowledge, our case is the 24th case on this topic in the literature.

No special treatment or resection is recommended for the asymptomatic cases which can be diagnosed with ALL preoperatively.[5] Surgical resection may be considered in symptomatic cases or when there is a possibility of the accessory liver tissue to become twisted leading to ischemia. Some authors have argued that ectopic liver or ALL may progress into cancer, hepatitis, or local cirrhosis after a pathological alteration.[6,7] A thoracoscopy should be preferred as the first-line surgical approach. In our case, no resection was attempted, considering the size of the mass and the length of the pedicle, and the fact that the risk of twisting was not likely in our case.

In conclusion, the intrathoracic accessory liver is seen very rarely and can be overlooked on a radiological examination. It should be considered in the differential diagnosis of the masses with supradiaphragmatic localization. A thoracoscopic approach can be effectively employed for the diagnosis and treatment of such asymptomatic masses.

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