



**Case Report / Olgu Sunumu**

## 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.

Abnormal localization of the liver tissue is typically seen in abdominal organs such as the gallbladder, spleen, adrenal gland, and pancreas. Intrathoracic liver tissue is extremely rare which may occur due to congenital abnormalities or after a trauma or surgical procedure.<sup>[1]</sup> In the majority of cases, it is detected incidentally, as it is usually asymptomatic.

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

### ÖZ

Heterotopik supradiafragmatik karaciğer dokusu oldukça nadir bir patolojidir. Genellikle asemptomatiktir ve sıklıkla rastlantısal olarak saptanır. Bu yazıda, öksürük ile aralıklı sırt ve göğüs ağrıları oluşan ve radyolojik olarak intratorasik paravertebral bir kitle saptanan bir kadın olgu sunuldu.

**Anahtar sözcükler:** Aksesuar karaciğer, intratorasik kitle, supradiafragmatik karaciğer, torakoskopi.

was taken to evaluate its association with the aorta; however, no such association was found. The forced expiratory volume in one second (FEV<sub>1</sub>) value was 2.0 L (73.8%), and the FEV<sub>1</sub>/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

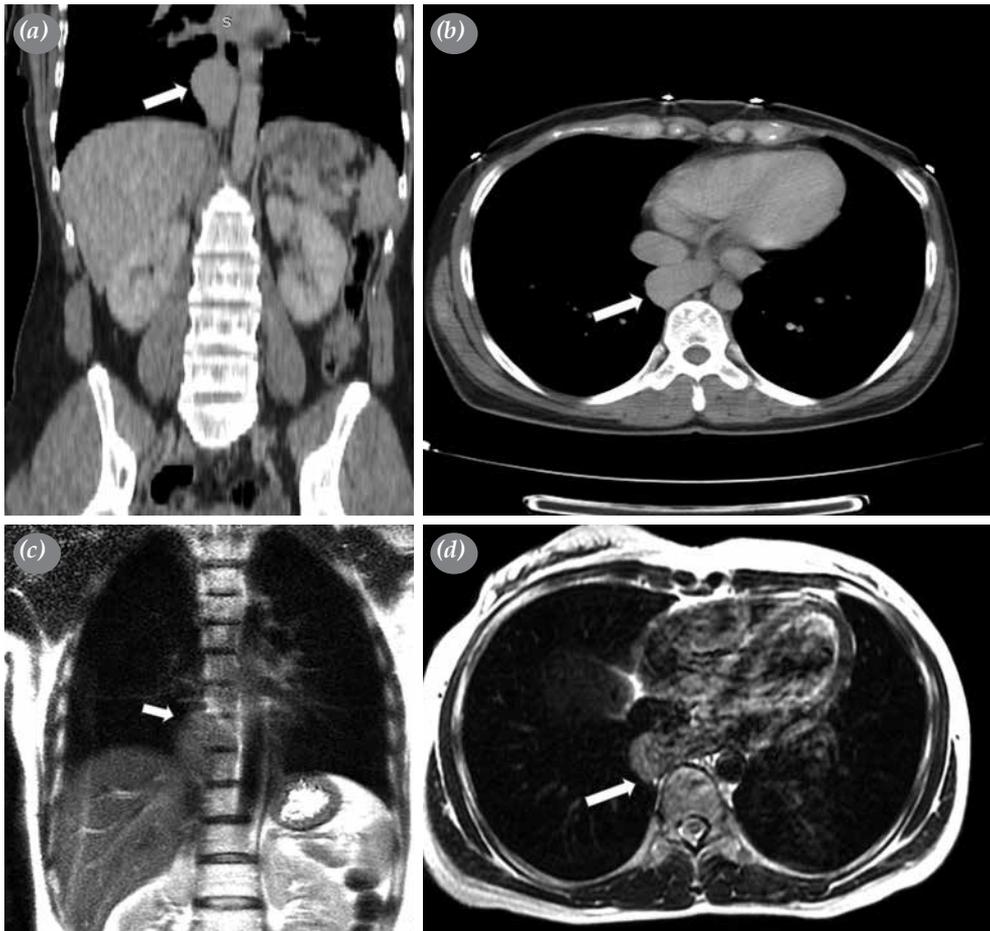
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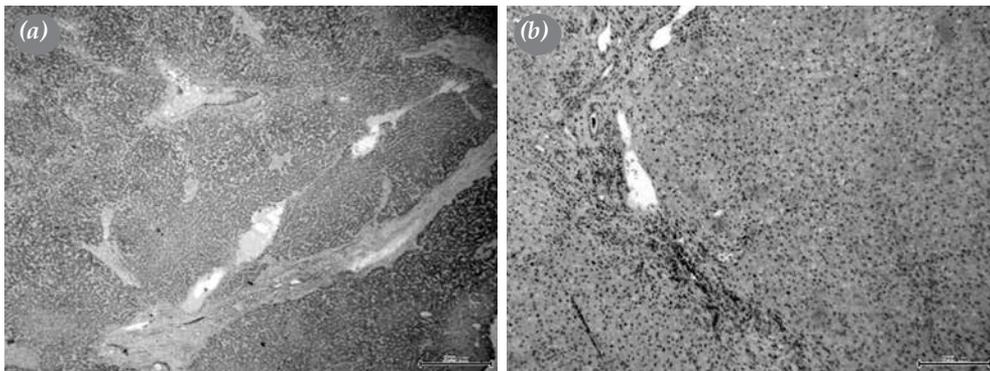
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**Figure 1.** (a) A thoracic computed tomography showing a lesion of about 2.9 cm in the coronal plane. (b) An axial plane of thoracic computed tomography. (c) A contrast-enhanced magnetic resonance imaging showing extension of the mass toward thorax (coronal plane, T<sub>2</sub> sequence). (d) An axial plane of thoracic magnetic resonance imaging.



**Figure 2.** (a) Positivity for hepatocyte-specific antigen (Hep Par-1) at  $\times 40$ . (b) Liver tissue involving a central vein, portal area, and lobular structure (H-E $\times 200$ ).

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.<sup>[1]</sup> 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.<sup>[2]</sup>

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.<sup>[2]</sup> Although they are asymptomatic in most cases, they may result in chest pain, coughing, hemoptysis, or dyspnea.<sup>[1]</sup> 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.<sup>[1]</sup> 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.<sup>[3,4]</sup> 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.*<sup>[5]</sup> 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 24<sup>th</sup> 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.<sup>[5]</sup> 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.<sup>[6,7]</sup> 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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#### **REFERENCES**

1. Wang C, Cheng L, Zhang Z, Xie T, Ding H, Deng Q, *et al.* Accessory lobes of the liver: A report of 3 cases and review of the literature. *Intractable Rare Dis Res* 2012;1:86-91.
2. AN J, Han J, Lee KS, Choi YS. Supradiaphragmatic heterotopic liver presenting as a pleural mass: a case report. *Tuberc Respir Dis* 2010;69:191-5.
3. An J, Han J, Lee KS, Choi YS. Supradiaphragmatic heterotopic liver presenting as a pleural mass: a case report. *Tuberc Respir Dis* 2010;69:191-5.
4. Han S, Soylu L. Accessory liver lobe in the left thoracic cavity. *Ann Thorac Surg* 2009;87:1933-4.
5. Chen YY, Huang TW, Chang H, Hsu HH, Lee SC. Intrathoracic caudate lobe of the liver: a case report and literature review. *World J Gastroenterol* 2014;20:5147-52.
6. Choi SU, Kim HK, Kim J. Heterotopic supradiaphragmatic liver combined with intralobar pulmonary sequestration. *Ann Thorac Surg* 2008;85:1809-10.
7. Adin ME, Çetinçakmak MG, Deniz MA, Göya C. Accessory liver within the thoracic cavity. *Surg Radiol Anat* 2018;40:1085-91.