Case Report

Congenital Riedel’s lobe of the liver: A case report

Short Title/Running Head: A Case Report of Riedel’s Lobe

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Abstract

Riedel’s lobe of the liver is a rare anatomical variant that is often incidentally found on imaging or the presence of hepatomegaly on physical exam. Although patients are usually asymptomatic, its presentation can vary, ranging from nonspecific symptoms to more severe symptoms such as torsion, obstruction, rupture, and bleeding. We present a patient with asymptomatic hepatomegaly who was incidentally found to have Riedel’s lobe of the liver with an elevated IgG mitochondrial antibody. The range of symptoms associated with this rare anatomic variation highlights its an importance in diagnosis and surveillance in this patient population.
Keywords: Case report, Liver abnormality, incidental finding, liver anatomy, accessory hepatic lobe

Introduction

The liver is the largest internal organ in the human body and may present with anatomical variations. Riedel lobe of the liver is a rare anatomical variation described as a downward tongue-like projection of the anterior edge of the right liver lobe to the right of the gallbladder. [1] The incidence of Riedel’s lobe varies depending on the diagnostic criteria and methods but has been reported to be within 3.3% and 14.5%. [2] We report a case of a 43-year-old female with an incidental finding of non-palpable Riedel’s lobe.

Case Description/Methods:

A 43-year-old female was referred for evaluation of hepatomegaly, which was revealed on MRI and CT scan dating back to 2016. Medical history notable for Irritable Bowel Syndrome (IBS), uterine fibroids, and a history of a tumor removal from her right breast. Patient denies any history of alcohol, illicit drugs, hepatotoxic medications, or pre-existing liver disease. Physical exam was unremarkable and abdominal exam did not reveal any mass or abnormalities. Routine blood examination was within normal limits as well as liver function tests with preserved hepatic synthetic function and normal iron studies. Hepatitis panel (A, B, C), anti-smooth muscle antibody, and LKM-1 IgG antibody was negative. ANA, alpha-1 antitrypsin, and tissue transglutaminase were all negative as well. The only lab abnormality was an elevated IgG mitochondrial M2 antibody 54.5 (normal less than 20 units).

CT, MRI, venous duplex, and liver biopsy were all performed. CT abdomen performed in 2016 showed an enlarged liver, measuring up to 197.3mm in the sagittal plane (fig 1). CT abdomen
performed in 2020 was significant for an enlarged liver with the right lobe extending into the pelvis and ‘not completely included in the study’ (fig 2). As shown in figure 2, the liver measured up to 215.4mm in the sagittal plane. MRI abdomen revealed a markedly enlarged liver measuring up to 23.8cm in its craniocaudal dimension with extension into the pelvis with the pancreas deviated to the left, likely secondary to the prominent hepatomegaly. Venous duplex significant for normal directional flow in the portal and hepatic veins with no evidence of portal hypertension. Liver biopsy revealed signs of sinusoidal dilatation nonspecific for veno-occlusive outflow obstruction with no signs of inflammation, steatosis, or fibrosis.

The patient was diagnosed with Riedel’s lobe of the liver. She was discharged from the hospital without treatment with a recommendation to repeat an MRI in 1 year, as torsion is a reported complication of Riedel’s lobe over time. Patient will be recommended to repeat LFTs and anti-mitochondrial antibody to determine progression/significance prior to follow up in 6 months.

**Discussion**

Riedel’s Lobe is an extremely rare hepatic morphologic variant that was first described by Corbin in 1830 and defined by Riedel in 1888 as “a round tumor on the anterior side of the liver, near the gallbladder, to its right.” [3] The etiology of Riedel’s lobe has been suggested to be either congenital or acquired. The congenital origin is thought to be due to a disemembrplastic anomaly in the development of a hepatic bud, leading to the formation of accessory lobes in the infrahepatic space. [4,5] Accessory lobes are composed of normal liver parenchyma that can be connected directly to the original liver, by mesentery, or by a pedicle. [6] Patients with accessory hepatic lobes may have a history of omphalocele or gastroschisis, suggesting that a malformation involving the foregut and abdominal wall may be related. [7] On the other hand, Riedel’s lobe may be due to acquired risk factors, such as intrapelvic inflammatory conditions. Riedel first
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postulated that inflammation in nearby structures, such as the gallbladder or appendix, resulted in
the elongation of the liver. [3]

The formation of accessory hepatic lobes is extremely rare with an estimated prevalence of 1%. [2,8] Accessory hepatic lobes have been discovered predominantly in adults but have been reported in patients as young as 2 months old to 79 years old. [7,9] The prevalence of Riedel’s lobe in the general population varies depending on the diagnostic criteria, imaging techniques, etc. but is in the range of 3.3% to 14.5%. [2] It has been shown to be higher in women (4.5-19.4%) compared to men (2.1-6.1%). [2] A radiologic series showed a higher prevalence of Riedel’s lobe (31%) and showed no statistical difference between genders. [5] The wide range underscores the differences in diagnostic criteria and methods. Our case represents this unique finding in a middle-aged woman.

Patients with Riedel Lobe can present with palpable or non-palpable hepatomegaly. Differential diagnoses of palpable hepatomegaly include emphysema, congestive heart failure, and other causes of liver disease such as hepatitis, cirrhosis, and malignancy. Imaging, such as hepatobiliary ultrasonography, abdominal CT, abdominal MRI is utilized to differentiate and establish the diagnosis. While most patients with Riedel Lobe are asymptomatic, it may lead to abdominal discomfort, nausea, bloating, and constipation in the event of torsion or external compression of the lobe. There have been approximately 20-30 cases that report mechanical complications, such as torsion of the accessory lobe. Other severe complications reported include gastric outlet obstruction, bleeding, and rupture. Interestingly, cases of malignancy involving Riedel’s lobe have been reported including primary hepatocellular carcinoma and metastatic nodules. In our case, our patient presented without symptoms and denied any history of complications caused by the accessory lobe.
Conclusion

Our patient was referred after incidental detection of hepatomegaly. Although she was asymptomatic at presentation and denied any history of complications due to the Riedel’s lobe, knowledge and surveillance of the accessory lobe is important as it may not always remain clinically latent. Interestingly, our patient was found to have elevated IgG mitochondrial M2 antibody (AMA-M2). AMA-M2 is usually associated with primary biliary cirrhosis (PBC) but can also be found in patients with autoimmune hepatitis. Anti-smooth muscle antibody was negative in our patient. Antimitochondrial antibody is highly sensitive and specific for PBC. Positive results in the setting of normal liver function tests (LFTs) indicate an increased risk of PBC development in the future. [10] Our patient presented without any or prior symptoms, normal LFTs, and liver biopsy showed mild sinusoidal dilatation and no signs of inflammation, steatosis, fibrosis, or pathognomonic bile duct lesions. Taking into account our patient’s history, workup thus far, and the little we know about Riedel’s lobe, we will repeat an MRI, AMA-M2, LFTs prior to follow up in 1 year.

Images:

Fig. 1. Liver measuring up to 197.3mm in the sagittal plane on a computed tomography (CT) scan of the abdomen and pelvis in 2016.

Fig. 2. Liver measuring up to 215.4mm in the sagittal plane on a CT scan of the abdomen and pelvis in 2020.

References: