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Intramural Gallbladder Hematoma Mimicking Gallbladder Neoplasm and The Importance of MRI in Diagnosis

Safra Kesesi Neoplazmını Taklit Eden İntramural Safra Kesesi Hematomu ve Tanıda MRG'nin Önemi

Mustafa YILDIRIM [1*], Hakan ARTAŞ [2]

[1] Elazığ Fethi Sekin Şehir Hastanesi, Radyoloji, Elazığ, Türkiye

[2] Fırat Üniversitesi Tıp Fakültesi, Radyoloji, Elazığ, Türkiye

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Abstract

Intramural gallbladder hematoma is a rare cause of abdominal pain. Symptoms are generally non-specific. Therefore, imaging methods are important for diagnosis. But despite simultaneous radiological imagings, it may be difficult to diagnose a gallbladder hematoma. Because it has similar imaging findings with gallbladder neoplasm and tumefactive biliary sludge. We present a case with intramural gallbladder hematoma mimicking gallbladder tumor and its radiological findings.

Keywords: Gallbladder Hematoma, Cholecystitis, MRI

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Öz

Safra kesesi hematomu karın ağrısının nadir bir sebebidir. Semptomlar genellikle non-spesifiktir. Bu yüzden görüntüleme yöntemleri tanıda önemlidir. Ancak eşzamanlı radyolojik görüntülemelere rağmen, safra kesesi hematomunu teşhis etmek zor olabilir. Çünkü safra kesesi neoplazmı ve tümefaktif safra çamuru ile benzer görüntüleme bulgularına sahiptir. Biz safra kesesi tümörünü taklit eden intramural safra kesesi hematomlu bir olguyu ve radyolojik bulgularını sunuyoruz.

Anahtar Kelimeler: Safra Kesesi Hematomu, Kolesistit, MRG

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[*]**Sorumlu Yazar (Corresponding Author):** Mustafa Yıldırım, **e-mail**: mustafa23468@outlook.com

Introduction

Intramural gallbladder hematoma is very rare. Hematoma in the gallbladder (GB) is generally associated with hemobilia, cholecystitis, gallbladder neoplasm, cystic artery aneurysm, and trauma (1). Abdominal ultrasonography is the first and major imaging method in gallbladder diseases. Tumefactive biliary sludge, gallbladder hematoma and gallbladder neoplasm are hyperechogenic on US and it is difficult their distinction sonographically (2). MRI can be used as a problem solver. We present the case of intramural gallbladder hematoma, causing a mass-like appearance on ultrasound and the importance of MRI in diagnosis.

Case Report

A 57-year-old male patient was admitted to the hospital with right upper quadrant pain. On physical examination, Murphy's sign were positive. Laboratory examinations revealed leukocytosis (15,750/mm3). Hemogram (hemoglobin, 14.9 g/dL; hematocrit, 45%), platelet count (242,000/mm3), liver enzymes (aspartate aminotransferase 27 U/L, alanine aminotransferas 35 U/L), total bilirubin, amylase and lipase levels were within normal limits. Prothrombin time and partial thromboplastin time were also normal.

On the sonographic examination, echogenic, mass-like lesion was observed on the gallbladder wall. On the doppler examination, suspicious vascular flow was observed from the lesion (Figure 1). Gallstone and moderate gallbladder wall thickening were other accompanying findings. On MRI examination, the lesion was hyperintense on non-contrast T1-weighted images (Figure 2) and hypointense on T2-weighted images. On dynamic abdominal MRI, there was no enhancement in the lesion. (Figure 3). The patient was operated. In the cholecystectomy material, histopathology findings of cholecystitis and intramural gallbladder hematoma were observed. The patient was discharged on the 3rd day.

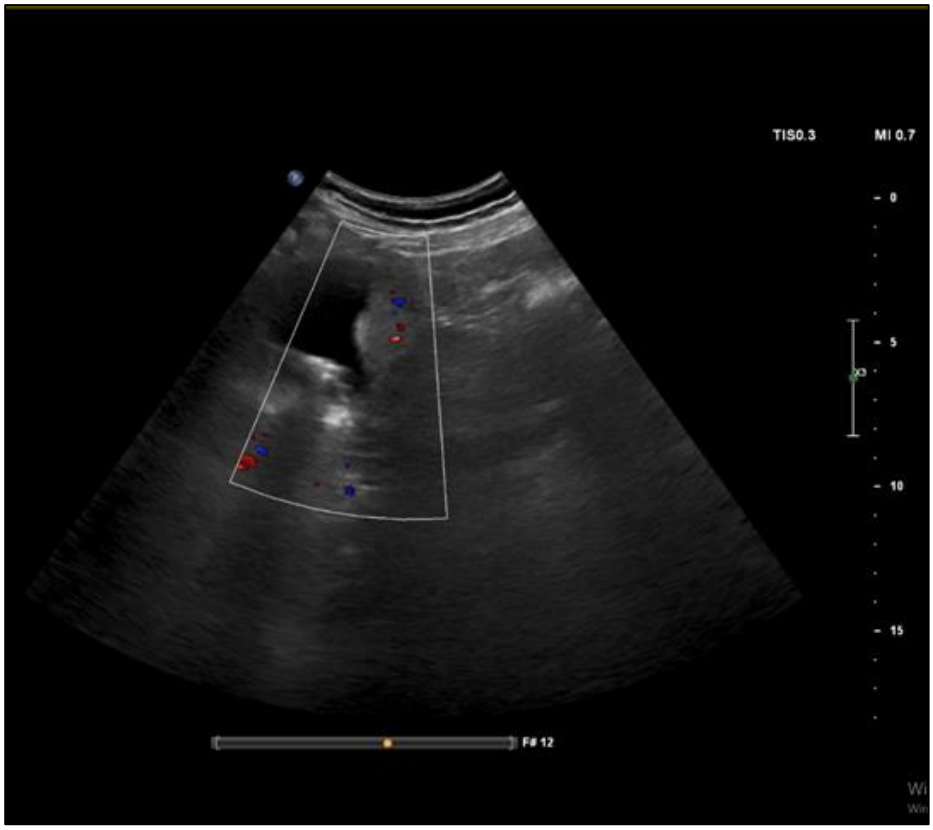

Figure 1. Transabdominal ultrasonography shows polypoid echogenic lesion on the gallbladder wall. Doppler ultrasonographic examination show color singals in the lesion.

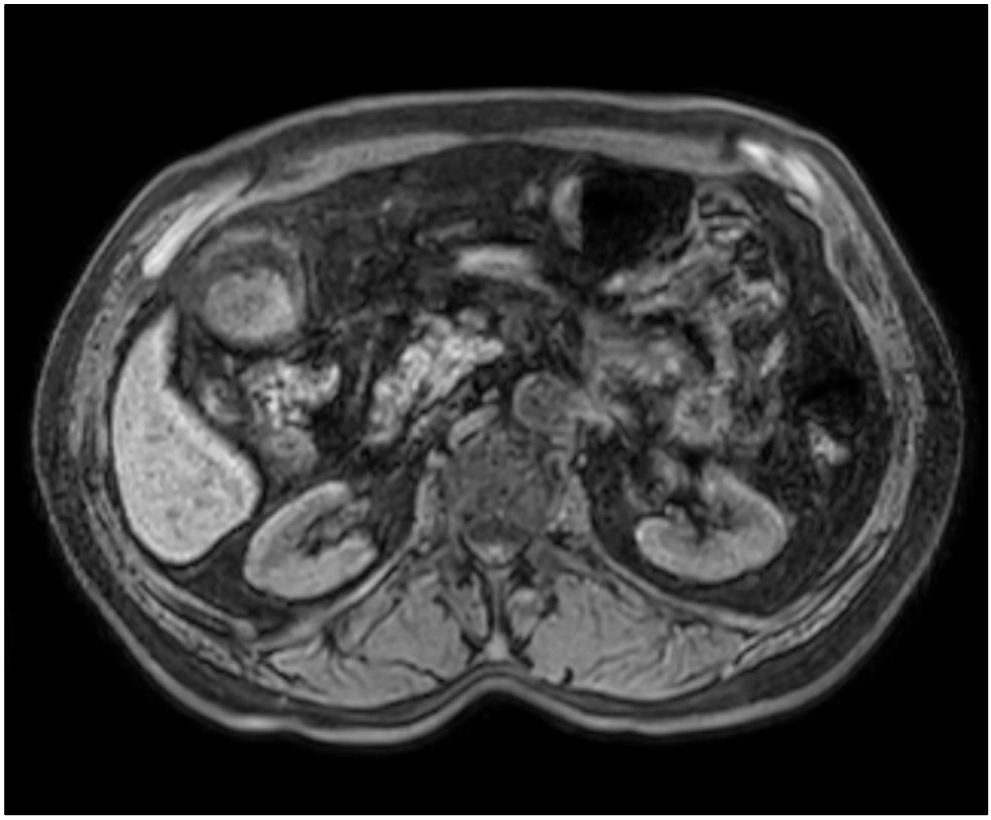

Figure 2. Hyperintense mass-like lesion in the gallbladder on T1-weighted axial MR image.

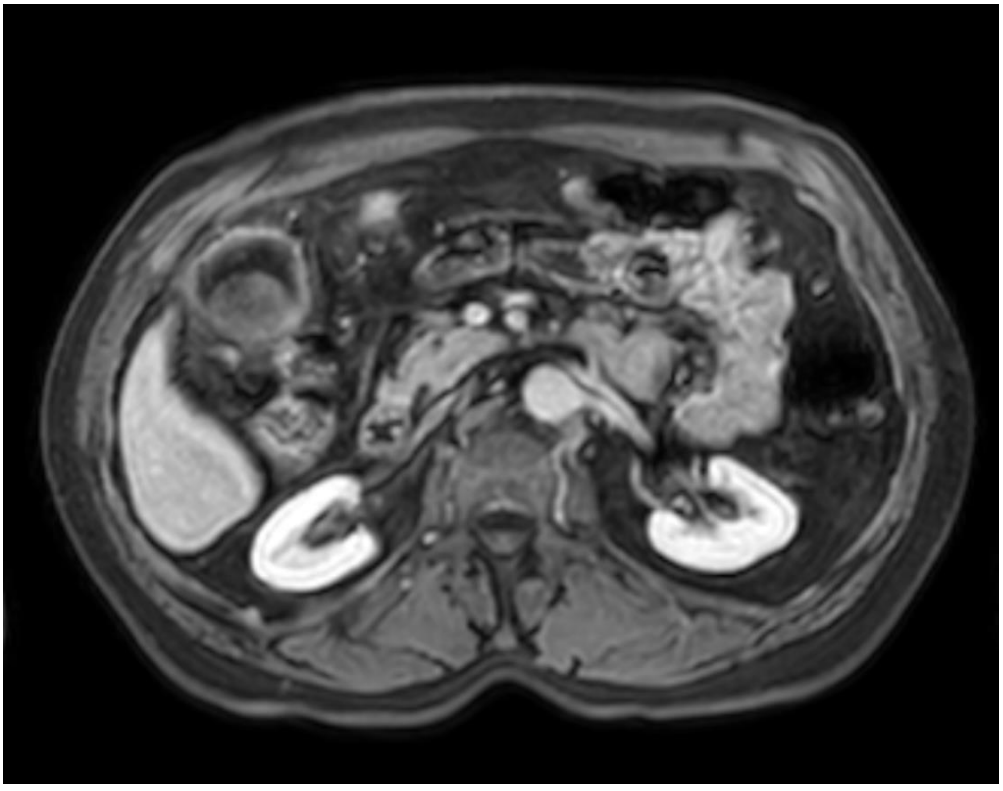

Figure 3: Non-enhancing gallbladder lesion on the dynamic MRG

Discussion

Gallbladder hemorrhage is a very rare condition. It was first reported by Sandblom in 1948 (3). The most common causes are trauma and percutaneous liver biopsy. (4). Hemophilia, gallbladder neoplasm, anticoagulant therapy, aneurysm rupture, and bleeding diathesis are other causes. Coexistence of cholecystit and hemorrhage has been reported rarely (4). In our case, gallbladder hematoma and acute cholecystitis were together.

Diagnosing an intramural gallbladder hematoma with symptoms alone can be difficult. Therefore, imaging methods are important for diagnosis. Ultrasound is the first modality to be used. Computed Tomography (CT) and MRI can also be used for accurate diagnosis. Despite simultaneous radiological imaging, it may be difficult to diagnose a gallbladder hematoma. Because it has similar imaging findings with gallbladder neoplasm and tumefactive biliary sludge.

Gallbladder hematoma can be seen as an intraluminal echogenic mass. and it may be mobile. In our case, the hematoma in gallbladder wall didn't gravitate with changing position. In addition, the false vascular flow was observed on the doppler examination. All of these are the factors that cause misdiagnosis. The false vascularity observed on the doppler examination was evaluated in favor of the twinkle artifact. Twinkling artifact is the result of intrinsic machine noise seen with color Doppler ultrasound (5). Rough, echogenic surfaces can demonstrate twinkle artifact on color Doppler ultrasound.

Tumefactive sludge, gallbladder neoplasm, and gangrenous cholecystitis are in the differential diagnosis of the echogenic lesion in the gallbladder (6). In the early period of gallbladder neoplasm, it can be seen as focal intraluminal mass with wall involvement. The tumor is often has irregular, but sometimes ill-defined margins. Sonographically, it is in heterogeneous pattern with predominantly low echogenicity. Gallstones or gallbladder wall calcifications, may be seen within the mass (7). On CT examination, patchy moderate contrast enhancement is usually seen. MR is reliable and useful for both diagnosis and staging. Lymph node invasion and hepatic invasion sensitivity on MRI has been reported as 92% and 100%, respectively (8).

Sludge is usually incidentally found at ultrasound and easily recognized. Gallbladder sludge typically appears as a low amplitude homogeneous echoes. Sludge can create a mass-like lesion called a tumefactive sludge (7). In clinical practice, at the US examination, when the tumefactive sludge is incidentally detected, short-term USG following or additional imaging methods should be used. This may include CT, MRI and contrast material–enhanced US (9). Tumefactive gallbladder sludge contains cholesterol monohydrate crystals. Therefore, blood flow is not seen on color Doppler US (10). But gallbladder cancer generally demonstrates blood flow at power and color Doppler US. These features are important clues in differential diagnosis (11).

Ultrasonographic and computed tomographic findings of the gallbladder hematoma, gallbladder carcinoma and tumefactive gallbladder sludge may be similar. MRI is useful in differential diagnosis. Hematoma signals are similar to skeletal muscle on T1-weighted imaging and appear hypointense on T2-weighted imaging (12). Gallbladder hematoma is seen as a non-enhancing lesion on contrast-enhanced imaging, as in our case.

Conservative treatment is sufficient for the treatment of intramural gallbladder hematoma. However, in our case, there were also signs of acute cholecystitis and the patient was operated.

As a result, although the gallbladder hematoma is rare, its physical examination and radiological findings mimic many pathologies. Additional radiological imaging, especially MRI, should be done for the diagnosis.

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References

1. Tan SW, Lai SK, Ng KW, Chen P, Chen KH, Jiang CF. Intramural gallbladder hematoma mimicking gallbladder neoplasm in a 33-year-old male. J Chin Med Assoc 2005; 68:146-9
2. Gore RM, Yaghmai V, Newmark GM, Berlin JW, Miller FH. Imaging benign and malignant disease of the gallbladder. Radiol Clin North Am 2002;40:1307-23, vi.
3. Sandblom P. Hemorrhage into the biliary tract following trauma; traumatic hemobilia. Surgery 1948;24:571-86.
4. Kwon TK, Jeon SH, Park HW, Jung WJ, Hwang JY, Park KS, et al. A case of intraluminal gallbladder hematoma after percutaneous liver biopsy. Taehan Kan Hakhoe Chi 2002; 8:486-9.
5. Brant WE, Helms CA. Fundamentals of diagnostic radiology. Lippincott Williams & Wilkins. (2007) ISBN:0781765188.
6. Scharling ES, Geisinger KR. Case of the day. Hemobilia: intraluminal gallbladder hematoma. J Ultrasound Med 1993;4:240–9.
7. Argha Chatterjee, Camila Lopes Vendrami, Paul Nikolaidis, Pardeep K. Mittal, Andrew J. Bandy, Christine O. Menias, Nancy A. Hammond, Vahid Yaghmai, Guang-Yu Yang, Frank H. Miller. Uncommon Intraluminal Tumors of the Gallbladder and Biliary Tract: Spectrum of Imaging Appearances. (2019) RadioGraphics. 39 (2): 388-412.
8. Schwartz LH, Black J, Fong Y et-al. Gallbladder carcinoma: findings at MR imaging with MR cholangiopancreatography. J Comput Assist Tomogr. 26 (3): 405-10.
9. Sparchez Z, Radu P. Role of CEUS in the diagnosis of gallbladder disease. Med Ultrason 2012;14(4):326–330.
10. Seong M, Kang TW, Kim M, et al. Tumefactive gallbladder sludge: the MRI findings. Clin Radiol 2016;71(4):402.e9–402.e15.
11. Komatsuda T, Ishida H, Konno K, et al. Gallbladder carcinoma: color Doppler sonography. Abdom Imaging 2000;25(2):194–197.
12. Shimura T, Kajima T, Tsutsumi S, Yoshida T, Uchiumi H,Kuwano H. Gallbladder hematoma in a patient with hemophiliaB: report of a case. Hepatogastroenterology 2000;47:939–41.