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Clinical Case

Simple Liver Cyst as A Differential Diagnosis of Right Adrenal Cyst

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Abstract

Simple hepatic cyst is a rare entity that usually presents asymptomatically. Its diagnosis is based on imaging studies. Surgery is indicated in symptomatic patients or those with suspected malignancy. We present the case of a woman who underwent surgery for a symptomatic simple hepatic cyst, with an intraoperative diagnosis compatible with an adrenal cyst, with a pathological anatomy result of a simple adrenal cyst. The case shows us the importance of making an adequate differential diagnosis between simple hepatic cyst and simple adrenal cyst since they have similar clinical and radiological characteristics.

Introduction

Simple hepatic cyst (SHC) is a clinical entity with a low prevalence, being more frequent in women. It generally presents asymptomatically. Although, in those cases where the lesions reach a considerable size, it can manifest with gastrointestinal symptoms. In symptomatic cases, surgical treatment would be indicated (1).

The diagnosis of this pathology is mainly based on imaging studies, such as ultrasound and computed axial tomography (CAT). In doubtful cases, magnetic resonance imaging (MRI) plays a relevant role. These tests allow to evaluate the size of the lesion and make a differential diagnosis with other pathologies, both benign and malignant (2).

However, the distinction with other entities can be complex, especially in the case of premalignant or malignant lesions. Due to the anatomical proximity and the similarities in the behavior of the QSH, it can be confused with cysts of the right adrenal gland. Therefore, it is essential to consider the right adrenal cyst within the possible diagnostic alternatives.

Clinical Case

A 35-year-old woman with no relevant personal history was being followed up by the Digestive Service due to abdominal pain and distension. Upon abdominal examination, no masses were found on palpation. Laboratory tests did not show any infectious or immunological alterations.

The abdominal CT scan (Image 1) showed a large space-occupying lesion

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(SOL) located in the right lobe of the liver, with dimensions of 17 x 15.7 x 12 cm (longitudinal, anteroposterior, transverse), well defined and with completely cystic characteristics, without solid components or 3 calcifications. The lesion displaces the right kidney in an inferior and medial direction, with no other abnormalities identified in the liver parenchyma. calcifications. The lesion displaces the right kidney in an inferior and medial direction, without identifying other abnormalities in the liver parenchyma.

After ruling out infection by Echinococcus spp., the case was presented to the Hepatobiliary-pancreatic Tumors Committee. Due to the magnitude of the lesion and the associated secondary symptoms, surgical treatment was decided for possible symptomatic giant HSQ.

An exploratory laparoscopy was performed, revealing a cystic lesion located in the posterior lateral segments of the liver (segments VI-VII), with an approximate dimension of 15 x 15 cm. The lesion causes displacement of the inferior vena cava, the hepatic flexure of the colon, the kidney and right adrenal gland, as well as the right hepatic lobe. After complete dissection of the lesion, complete dependence on the adrenal gland without origin at the hepatic level is evident.

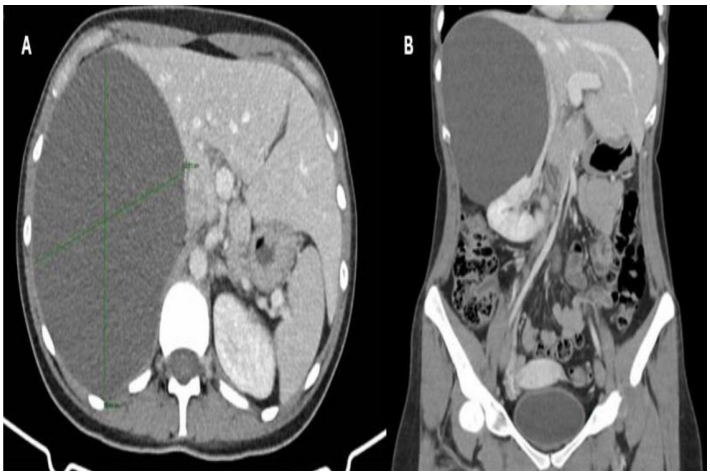

Figure 1: *Abdominal CT scan showing a well-defined lesion in the right hepatic lobe, measuring 17x15.7x12cm (LxAPxT) (A) that displaces the right kidney medially and inferiorly (B).*

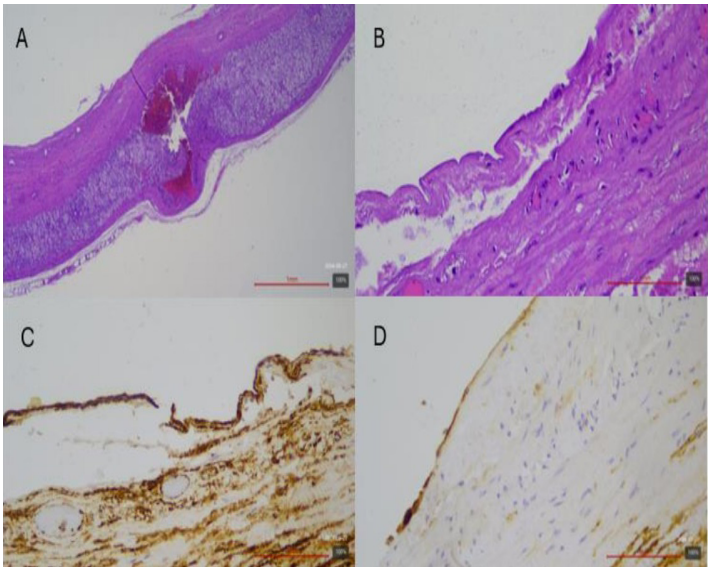

Figure 2: *Histological sections of adrenal parenchyma showing a cystic cavity lined by flat endothelium expressing CD34 and D2-40, confirming its endothelial origin. A: 5x hematoxylin-eosin stain. B: 40x hematoxylin-eosin stain. C: CD34 immunohistochemistry. D: D2-40 immunohistochemistry*

Given the findings, complete excision of the cyst was carried out by means of enucleation associated with a total adrenalectomy, due to the close relationship and fusion with the right adrenal gland, in relation to the probable adrenal origin of the lesion.

The postoperative period was without significant complications, and the patient was discharged on the third postoperative day.

The anatomopathological analysis confirmed the diagnosis of an endothelial type cyst of adrenal origin without histological characteristics of malignancy, with a positive immunohistochemical study for CD34 and D2-40 (Image 2).

Discussion

SH is a rare entity, with an estimated prevalence of 10-20%. It is more common in women, especially those over 40 years of age. In general, they are usually incidental findings during surgical interventions, autopsies or imaging studies. The most common presentation is small-sized SH (<5 cm), characterized by thin walls and an asymptomatic course. However, when the size of the SHQ exceeds 5 cm, they can generate gastrointestinal symptoms such as abdominal pain or distension, palpable mass, postprandial fullness and secondary to infection, rupture or bleeding (1).

In the study of SHQ, laboratory tests are usually normal, and the diagnosis is based on clinical and imaging studies. Among the radiological tests, ultrasound, CT and MRI stand out (2). Although these lesions do not present radiological pathognomonic characteristics. Radiological criteria include: rounded mass, smooth edges, thin and regular walls, without internal structures (1).

The differential diagnosis of SHQ can be complex, especially when faced with premalignant liver lesions such as mucinous cystic neoplasia (MCN) and biliary intraductal papillary neoplasia (IBPN). It is also essential to rule out the presence of focal nodular hyperplasia, cystadenoma and cystadenocarcinoma.

In particular, hydatid cysts should be considered, the exclusion of which requires serological studies (2,3).

Likewise, among the possible entities to be taken into account is the adrenal incidentaloma, specifically the right

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adrenal cyst. Regarding adrenal incidentalomas, they are lesions of the adrenal gland larger than 1 cm, diagnosed incidentally (4). Cystic adrenal masses, mainly simple adrenal cysts (SACs), share important similarities with SHCs. SHCs are rare or infrequent lesions, with an incidence of 1-2% (5). They usually appear in young women, between the third and sixth decades of life, and generally, unilaterally. Clinically, these lesions are asymptomatic in most cases. However, when they are associated with symptoms, these include abdominal pain, gastrointestinal discomfort or palpable masses, similar to SHCs. The diagnostic approach should include the evaluation of hormonal function and the risk of malignancy (4,6).

At the radiological level, both in CT and MRI, SSQs are characterized by being rounded, well-defined and thin-walled images. They show hyperintensity in T2 sequences, without contrast enhancement. Histologically, they are classified into four types: endothelial cysts (45%), pseudocysts (39%), epithelial cysts (9%) and parasitic cysts (7%) (5,7–9).

Treatment of SSQs is indicated in the presence of symptoms or suspicion of malignancy. Drainage or aspiration of the cyst is not recommended due to the high recurrence rate, with minimally invasive surgery being the treatment of choice. In the absence of suspicion of malignancy, and with surgical indication due to symptoms, laparoscopic fenestration is preferred. On the contrary, when malignancy is suspected, complete excision of the cyst is recommended (10).

In the case of SSQ, management remains a controversial issue. The most accepted criteria for surgical intervention include the presence of symptoms, tumor size (>5 cm) and suspicion of functionality or malignancy. Although there is no consensus on the ideal surgical technique, which may include enucleation, decortication, marsupialization or adrenalectomy (7). Laparoscopy is considered the approach of choice whenever feasible. Therefore, hepatic and adrenal cysts are rare entities that share similar clinical and radiological characteristics, which raises the

need to perform an accurate differential diagnosis. Both conditions have a low prevalence and are more common in women, generally 6 around the fifth decade of life. They usually occur asymptomatically, although in some cases they may be associated with gastrointestinal symptoms. The diagnosis of these lesions requires the use of various imaging tests, such as ultrasound, CT or MRI. However, the anatomical proximity between the liver and the right adrenal gland can make it difficult to distinguish between the two pathologies, increasing the risk of erroneous diagnoses.

A thorough anamnesis, complemented by appropriate analytical studies and imaging tests, is essential to guide the diagnosis. However, in the majority of cases, the definitive diagnosis can only be established after the removal of the lesion and its subsequent anatomopathological study. Surgical treatment is mainly indicated for large cysts that present symptoms or when there is suspicion of malignancy.

References

1. De Medicina A, Fernando A, Morazán D, Cortes C, Ayestas J. Case Report Liver Cyst: About a Case Abstract. Arch Med . 2022;16(2):3.
2. Polette D, Mils K, López Domínguez J, Barrios O, Leiva D, Puig I, et al. Diagnosis and treatment of liver cysts: Usefulness of intracystic tumor markers (CEA and CA 19.9.). Spanish Surgery Organ Of the Spanish Cir Asoc . 2024;102(1):19-24.
3. Allue M, Palacios P, Jimenez A. When and how to treat symptomatic giant liver cysts. Gastroenterol Hepatol. 2021 ;44(3):226-8.
4. Patricio Gac E, Patricio Cabané T, Jaime Jans B, Andrés Marambio G, Mauricio Díaz B, Verónica Araya Q, et al. Surgical management of Adrenal incidentaloma. Rev Chil surgery. 2012;64(1):25-31
5. Goel D, Enny L, Rana C, Ramakant P, Singh K, Babu S, et al. Cystic adrenal injuries: A report of five cases. Cancer Rep. 2020 ;4(1):e1314.
6. Melvin M, Grumbach M, Beverly M, Biller M, Glenn D, Braunstein M. Management of clinically inapparent adrenal mass. Ann Intern Med. 2003 ;138(5):424-9. Available at:
7. https://www.researchgate.net/publication/10876568_Management_of_the_ Clinically_Inapparent_Adrenal_Mass_Incidentaloma
8. Ramírez-Beltrán AA, Rosas-Nava JE, Franco-Morales A, Medrano-Urtecho HM, González-Cuenca E, Corona-Montes VE, et al. Adrenal cyst: our experience in its laparoscopic management. Cir Cir . 2021;89(2):252-7.
9. Patricio Cabané T, Patricio Gac M, Jorge Mariño B, Daniela Ibacache A, 7
10. Alejandra Ledezma S, Claudia Morales H. Primary adrenal cyst. Rev Chil surgery . 2011;63(6):617-22.
11. Reginelli A, Vacca G, Belfiore M, Sangiovanni A, Nardone V, Grassi R, et al. Pitfalls and differential diagnosis on adrenal injuries: current concepts in CT/MR imaging: a narrative review. Gland Surg. 2020;9(6):2331.
12. Candel MF, Flores B, Albarracín A, Soria V, Miguel J, Campillo Á, et al. Adrenal incidentalomas. A disease on the rise. Cir Esp.2006 ;79(4):237-40.