



RESEARCH ARTICLE

IMAGING OF THE SPLENIC HYDATID CYST

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ABSTRACT

Splenic hydatidosis has been reported since ancient times. Berlot in 1790 was the first to describe splenic hydatidosis as an autopsy finding. It may be detected incidentally or present with non-specific complaints. It is endemic in cattle-rearing areas of South America, Africa, Middle East, South Europe, India, and Australia. The rarity of splenic hydatid disease poses a diagnostic challenge for clinicians, particularly in non-endemic areas. As the hydatid cyst can present as a simple cyst without having the classic serological and imaging features, and later can lead to life-threatening complications like anaphylaxis, hydatid disease of spleen should be considered in differential in every patient in endemic areas with cystic lesion of spleen until proved otherwise.

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INTRODUCTION

Hydatid cyst is a parasitic disease caused by *Echinococcus*; this disease is endemic in farming areas but can occur worldwide. The most common site of this disease is the liver, followed by the lungs, kidney, bones and brain. Other sites are very rarely affected such as the heart, spleen, pancreas and muscles. Splenic hydatid disease has been reported to constitute up to 4% of cases of abdominal location of hydatid disease (Celebi, 2006) and may pose a diagnostic challenge for clinicians, especially in nonendemic areas because of the rarity of splenic hydatid disease (Kiresi, 2003).

Diagnosis and imaging of Hydatid cyst

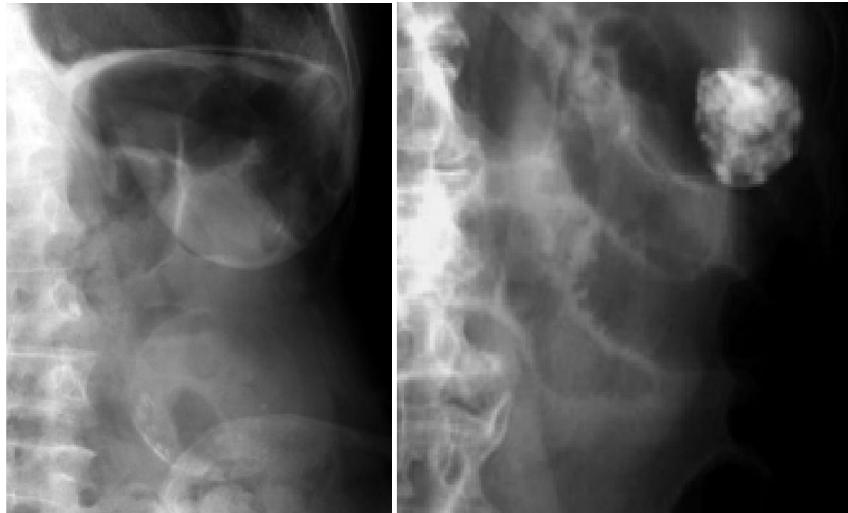
Splenic hydatid cysts are generally asymptomatic. Diagnosis is usually established incidentally by echography during investigation of unrelated symptoms or splenomegaly. When the cyst reaches an advanced size, the patient presents with a painful mass in the left hypochondrium (Celebi, 2006; Kiresi, 2003; Pedrosa, 2000). Other initial presentations include

portal vein compression, renal arterial compression and systemic hypertension or rupture of the splenic hydatid cyst to the other organs such as stomach or left colon (Celebi, 2006).

The imaging characteristics of splenic hydatid cysts are similar to those of hydatid cysts (Pedrosa, 2000) calcification of the cyst wall, the presence of daughter cysts and membrane detachment. The differential diagnosis for splenic hydatid cysts includes other splenic cystic lesions such as epidermoid cysts, pseudocysts, splenic abscesses, hematomas and cystic neoplasms of the spleen (Pedrosa, 2000; Durgun, 2003). Ultrasound, CT, and magnetic resonance imaging (MRI) are all appropriate for imaging of the Echinococcal liver disease. Imaging early in the disease process often reveals one or more simple-appearing cysts of varying size that are surrounded by either a thin well circumscribed wall or less often a by a slightly thickened irregular wall, with the wall thickness ranging from 1 to 10 mm. The next stage of the life cycle involves the development of daughter cysts (Pedrosa et al., 2000; Durgun et al., 2003; Gossios et al., 1997). At this stage, the cyst will typically demonstrate low echogenicity on ultrasound, hypodensity on CT, and low to intermediate signal intensity on T1- and high signal intensity on T2-weighted MR images. The Sonographic findings of splenic hydatid cysts are not specific, even if the typical findings of solitary, anechoic

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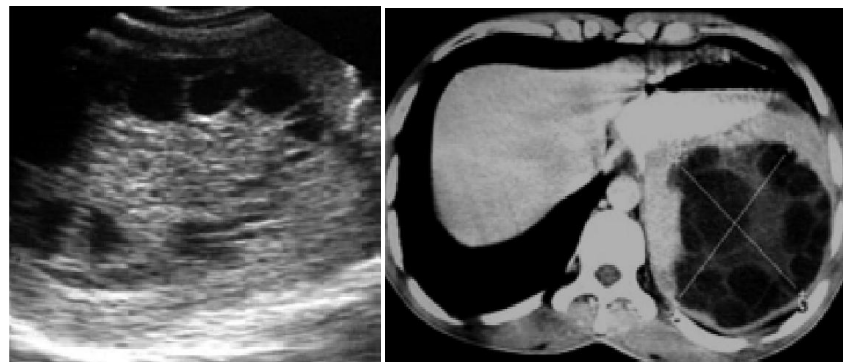
Abdominal X ray calcifications in hepatic area



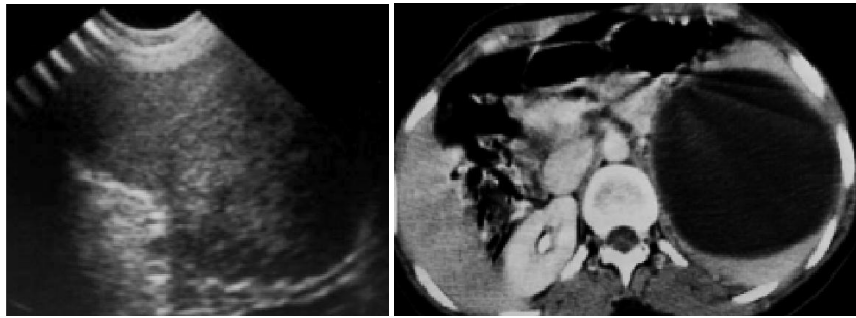
Ultrasonography and CT Scan Multiple splenic univesicular hydatid cyst associated with an hepatic hydatid cyst



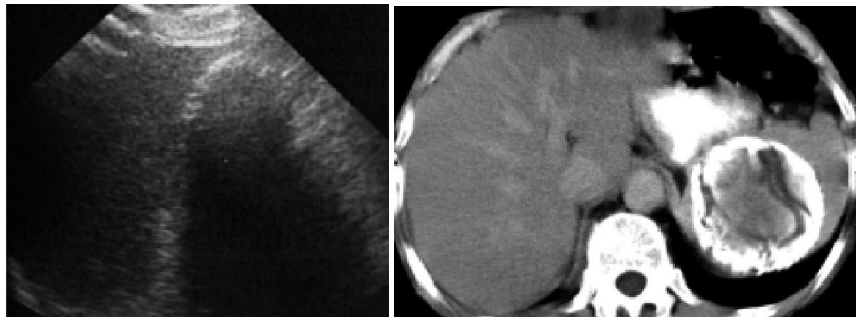
Ultrasonography and CT scan Splenic hydatid cyst With membrane detachment



Ultrasonography and CT Scan Splenic Multivesicular hydatid cyst



Ultrasonography and CT scan Voluminous Pseudotumoral hydatid cyst



Ultrasonography and Ct Scan Completely calcificated hydatid cyst



CT Scan Multiple hydatid custers of spleen associated with a renal hydatid cyst and pancreatic hydatid cyst

lesions are demonstrated. Sonography is helpful, especially in the early stages, when the lesion is cystic, in detecting daughter cysts, hydatid membranes, and hydatid sand (Pedrosa *et al.*, 2000; Durgun *et al.*, 2003). Ultrasound has a sensitivity of approximately 90-95% (Durgun, 2003). The most common appearance on ultrasound is an anechoic smooth, round cyst, which can be difficult to distinguish from a benign cyst. When the cyst contains membranes, mixed echoes will appear that can be confused with an abscess or neoplasm. When daughter cysts are present, characteristic internal septations result. Hydatid sand reflects a complex image which consists predominantly of hooklets and scolexes from the protoscolices. This finding may be visible when shifting the patient's position during imaging. When ultrasound reveals infoldings of the inner cyst wall, separation of the hydatid membrane from the wall of the cyst, or hydatid sand, a diagnosis of hydatid disease is probable (Durgun, 2003). When the fluid pressure in cyst becomes high, dissections may occur, resulting in the detachment of parasitic membranes, and these undulating pathognomic membranes seen on ultrasonography (USG) and

CT are known as snake/serpent signs (Gossios, 1997). In the more advanced stage of collapse; the membranes appear twisted on imaging known as spin/whirl sign (Durgun, 2003). The "Water-Lily" sign refers to a collapse of the endocyst layer which results in the inner cyst lining falling into the fluid in the dependent aspect of the cystic lesion. This gives the appearance of debris floating on a layer of fluid within the cyst. Owing to the risk of spontaneous or traumatic rupture, splenic hydatid cysts are treated surgically (Durgun, 2003). The standard treatment is total or partial splenectomy. Cyst fluid can be drained with puncture and aspiration to reduce the intracystic pressure, but splenectomy without puncturing the cyst is preferable (Durgun, 2003). Albendazol therapy is the mainstay of treatment in the postoperative follow-up period (Durgun, 2003).

Conclusion

A hydatid cyst must be included in the differential diagnosis of cystic lesions of the spleen. A splenic hydatid cyst should be

treated surgically due to the high risk of a rupture, and the ideal procedure in adulthood is standard splenectomy.

REFERENCES

- Celebi, S., Basaranoglu, M., Karaaslan, H., *et al.* 2006. A splenic hydatid cyst case presented with lumbar pain. *Intern Med.*, 45:1023–4.
- Durgun, V., Kapan, S., Kapan, M, *et al.* 2003. Primary splenic hydatidosis. *Dig Surg.*, 20:38–41.
- Gossios, K.J., Kontoyiannis, D.S., Dascalogiannaki, M., Gourtsoyiannis, N.C. 1997. Uncommon locations of hydatid disease: CT appearances. *Eur Radiol.*, 7:1303–8.
- Kiresi, D.A., Karabacakoglu, A., Odev, K., *et al.* 2003. Uncommon locations of hydatid cysts. *Acta Radiol.*, 44:622–36.
- Pedrosa, I., Saíz, A., Arrazola, J., *et al.* 2000. Hydatid disease: radiologic and pathologic features and complications. *Radiographics.*, 20:795–817.
