

IMAGE | LIVER

# Water Lily and Snake Signs

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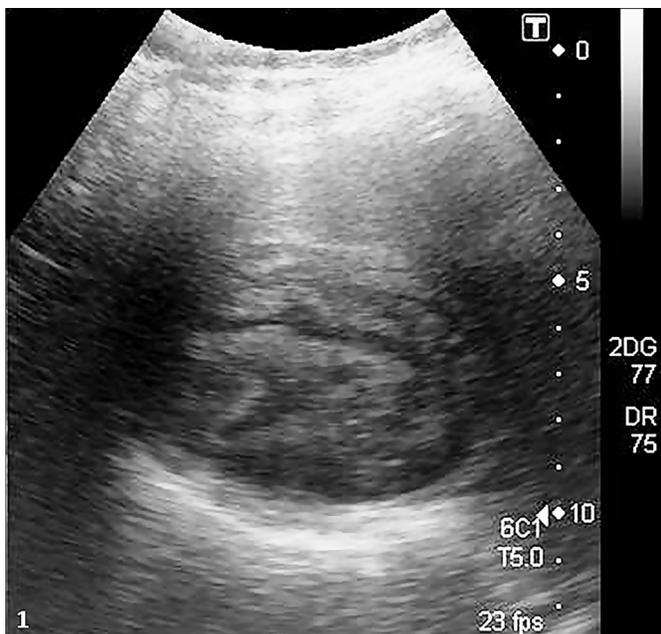
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## CASE REPORT

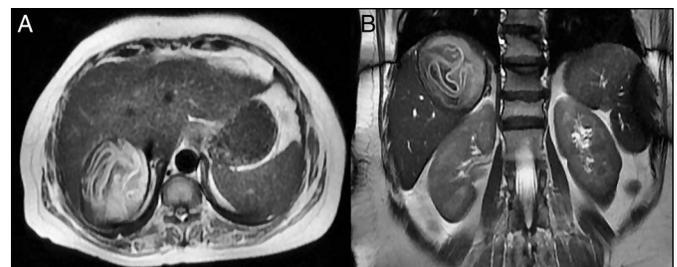
A 55-year-old Kashmiri woman who presented with right upper quadrant pain was referred to our center with a diagnosis of complex cystic space occupying lesion in segment VII of liver on ultrasonography elsewhere. She denied fever, jaundice, weight loss, gastrointestinal bleeds, or alcohol and drug abuse and did not suffer from chronic comorbid conditions. Clinical examination was positive for mild pallor and firm non-tender hepatomegaly. Laboratory tests revealed normocytic normochromic anemia with hemoglobin 9.4 g/dL and normal liver and renal function tests. Tumor markers such as alpha-fetoprotein, carcinoembryonic antigen, and CA 19-9 were within normal limits. Serology for hydatid disease (immunoglobulin G) was positive. Ultrasonography at our institute revealed a complex cystic lesion in the liver with floating membranes (water lily sign; Figure 1). Magnetic resonance imaging revealed a well-defined 7.5-cm T1 hypointense and T2 hyperintense cystic lesion containing undulating collapsed membranes (snake sign) consistent with Gharbi Class II cyst (Figure 2). She was offered surgical resection but chose chemotherapy with albendazole and is currently on follow-up without symptoms.

Hydatid disease is one of the most frequent causes of liver cysts worldwide, and it is prevalent in rural areas with poor sanitation, with poor living conditions, and with animals in close proximity. The most common complaint in affected patients is pain

over the right upper abdomen. Classification is based as per Gharbi et al or World Health Organization classification.<sup>1,2</sup> Ultrasonography is useful for detection of cystic membranes, septa, and hydatid sand, whereas computed tomography is best for cyst wall calcification, infected cysts, and peritoneal seeding. Magnetic resonance imaging is also useful for demonstration of cyst wall defects as well as passage of contents through a defect. All imaging modalities demonstrate specific signs as were seen in our patient.<sup>3</sup> Enzyme-linked immunosorbent assay is the most widely used serology. Nonoperative or operative methods are used to manage hydatid disease, with



**Figure 1.** Abdominal ultrasonography showing a complex cystic lesion within the liver containing floating membranes, suggestive of water lily sign.



**Figure 2.** (A and B) Abdominal magnetic resonance imaging revealing a complex cystic T1 hypointense and T2 hyperintense lesion within the liver with undulating membranous content within, suggestive of snake sign.

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the nonoperative method including chemotherapy (useful in cysts <4 cm) and/or percutaneous treatment. Albendazole is a benzimidazole carbamate with an active metabolite, albendazole sulfoxide, which is active against protoscoleces of *Echinococcus granulosus* with better cyst penetration. Standard regimen (10–15 mg/kg/d) uses 3 cycles of 1 month with a break of 14 days in between cycles with systemic availability accentuated by coadministration of a fatty meal and liposomal or soya bean emulsion encapsulation.<sup>4</sup>

## DISCLOSURES

Author contributions: CA Philips designed the study and wrote the initial draft. L. Anand acquired pertinent images. Both authors confirmed and approved the final version of the manuscript. CA Philips is the article guarantor.

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Informed consent was obtained for this case report.

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