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ARP Case Report Nº 14: Primary Hepatic Lymphoma

Caso Clínico ARP Nº14: Linfoma Hepático Primário

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Clinical Case

A 75-year-old woman presented with complaints of vague abdominal pain since 3 months.

Routine laboratory investigations were unremarkable, except for slight anemia. Serum alfa fetoprotein (AFP) level, serum lactate dehydrogenase (LDH) level and serum carcinoembryonic antigen (CEA) levels were within normal limits. Liver function tests were altered, showing elevated alanine transferase level, alkaline transferase level and alkaline phosphatase level.

The ultrasound was inconclusive due to bowel gas interposition.

A computed tomography (CT) scan of the abdomen and a MRI were performed. Three liver lesions were identified: one in the segments II/III, another in the segments I/IV and the last one in the segment IV. These lesions did not cause noticeable mass effect and a few vessels were seen traversing the lesions without changes in caliber (fig.1E). They were spontaneously hypodense on the CT scan. On MRI, the lesions revealed high signal intensity on the T2 weighted and low signal intensity on the T1 weighted images. There was no signal loss in opposed phase images, which excluded intracellular fat deposition. After contrast administration, the lesions revealed a hypovascular nature and no contrast uptake on the hepatobiliary phase. These findings altogether suggested the diagnosis of hepatic lymphoma. An ultrasound-guided percutaneous lover biopsy was performed and the proposed diagnosis was confirmed. Further 6 month follow-up of the patient revealed no other focus of lymphoma except the ones in the liver, which prompted the diagnosis of primary hepatic lymphoma.

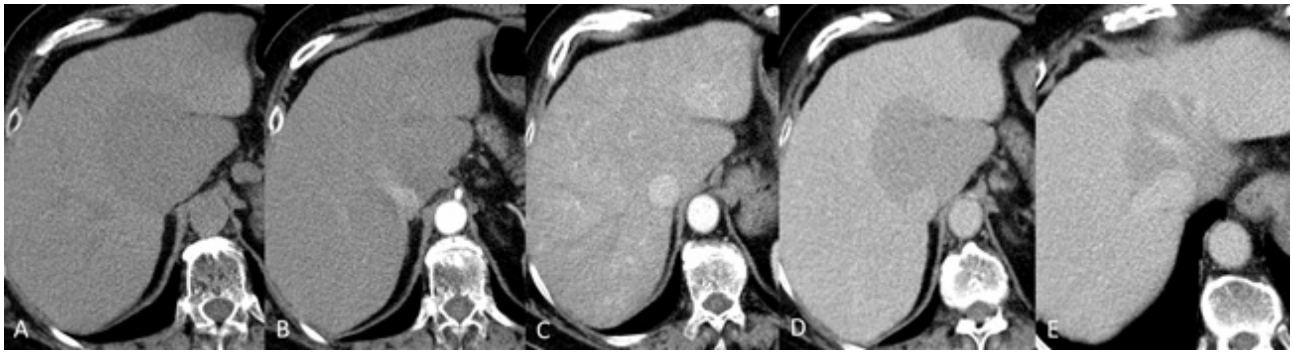

Fig. 1 – Contrast-enhanced CT scan (A, pre-contrast; B, arterial phase; C, portal venous phase; D and E, equilibrium phase). There are two lesions in the liver parenchyma, one in the segments II/III and another in the segments I/IV. These lesions are spontaneously hypodense and remain hypodense in the portal venous and equilibrium phases. They do not cause significant mass effect and the hepatic veins are seen traversing the lesion without any change in caliber (E).

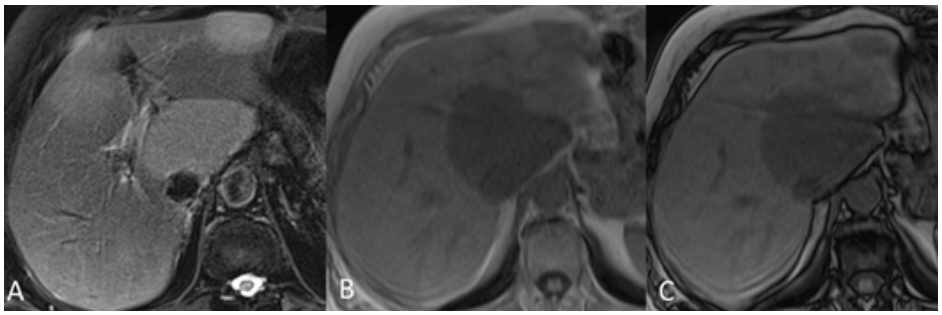

Fig. 2 – MRI (A, T2 Fat-saturated; B, T1 in-phase; C, T1 out-of-phase). The lesions are homogeneously hyperintense on T2 and hypointense on T1 weighted images. There is no signal loss or gain in the in-phase and out-of-phase images.

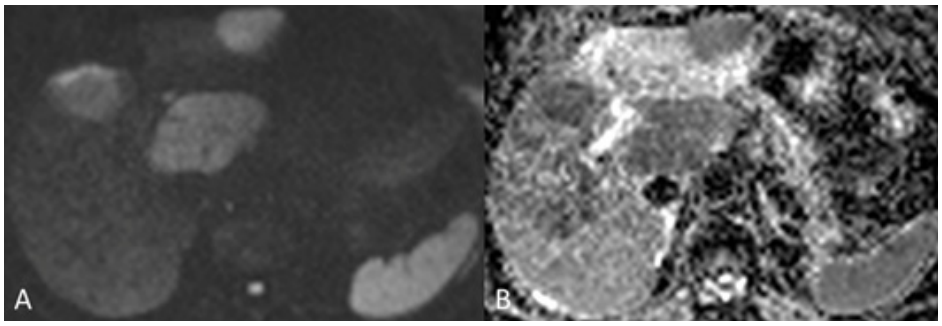

Fig. 3 – MRI (A, DWI (B-800); B, ADC map). Note an additional lesion on the segment IV. All lesions demonstrate restricted diffusion with low ADC values.

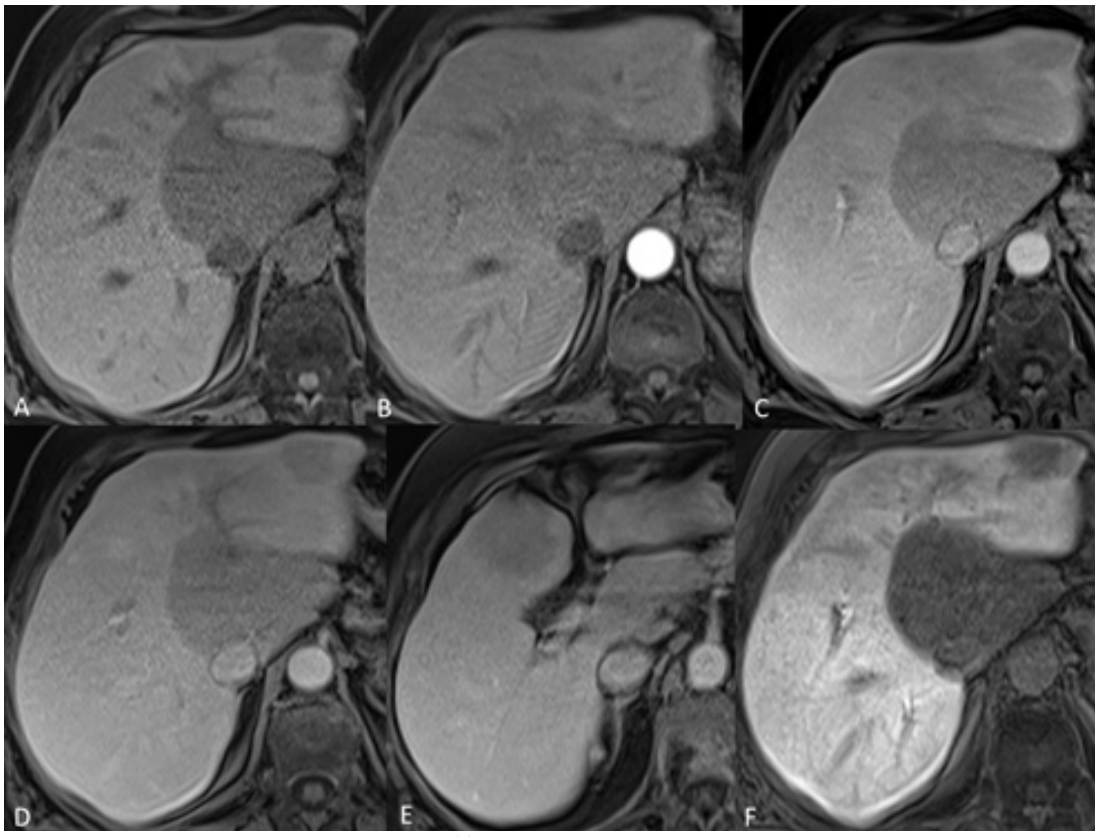

Fig. 4 – Contrast-enhanced MRI using Gd-EOB-DTPA (pre-contrast; arterial phase; portal venous phase; transitional phase; hepatobiliary phase). All lesions remain hypointense for the entire study, including the hepatobiliary phase.

Discussion

Primary hepatic lymphoma (PHL) is rare, representing <1% of all non-Hodgkin's lymphoma. It is defined as lymphoma that is confined to the liver and perihepatic lymph nodes, without evidence of involvement of other visceral organs, distant lymph nodes or bone marrow for at least 6 months after the onset of hepatic disease.

PHL is mostly diagnosed in the 4th-5th decade and shows a male predominance. It is commonly associated with viral hepatitis B and C, Epstein-Barr virus and human immunodeficiency virus.

It is important to make the differential diagnosis with secondary involvement of the liver with lymphoma because the management and prognosis differ significantly.

Radiologically PHL manifests as a solitary lesion in 60% or as multiple lesions in 35-40% of the cases.

The lesions have soft tissue attenuation and are usually homogeneously hypodense on non-contrast-enhanced computed tomographic (CT) scan. Areas of necrosis and hemorrhage may occasionally be seen but calcification is rare in the absence of treatment. The majority of the lesions demonstrate minimal to no enhancement on all post-contrast phases. On magnetic resonance (MR) imaging, the lesions tend to be homogeneously hypo to isointense on T1-weighted images and hyperintense on T2-weighted images. Enhancement patterns on MRI are similar to that seen on CT. The highly cellular nature of lymphoma typically results in restricted diffusion and whole-body diffusion-weighted imaging has been suggested to be as sensitive as FDG-PET/CT in staging of lymphoma.

Although there are no pathognomonic imaging features diagnostic of hepatic lymphoma, the radiologist should be aware of this possibility when facing a homogeneous hypoenhancing intraparenchymal liver lesion, without significant mass effect, in a middle aged man without a known primary malignancy. Secondary involvement of liver by lymphoma is relatively easier to diagnose on imaging studies due to the concomitant involvement of other organs (especially the spleen) and generalized lymphadenopathy.