

Case Report

An Unexpected Hepatocellular Carcinoma arising From an Unknown Nonalcoholic Fatty liver

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Keywords

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- Non-Alcoholic Fatty Liver Disease
- Steatosis
- MRI

Abstract

Development of Hepatocellular Carcinoma in the context of Non-Alcoholic Fatty Liver Disease is an issue of serious concern in a landscape where NAFLD has rapidly become a major condition of liver illness. NAFLD is often misdiagnosed, as these patients are asymptomatic and their laboratory tests are within normal range. We hereby present the case of a 34-year old woman who came to our attention for severe anemia in a known history of genitourinary tract bleeding. Performing an ultrasound scan as a first-line exam it was discovered a large abdominal mass, at first described as a uterine neof ormation. Only an MRI allowed to determine the hepatic nature of the mass and, after the resection, the histopathologic analysis confirmed the diagnosis of highly differentiated hepatocellular carcinoma arising in the context of marked steatosis.

ABBREVIATIONS

BMI: Body Mass Index; CEUS: Contrast-Enhanced Ultrasound; FNH: Focal Nodular Hyperplasia; HCC: Hepatocellular carcinoma; MRI: Magnetic Resonance Imaging; NAFLD: Non-Alcoholic Fatty Liver Disease; NAS: NAFLD Activity Score; NASH: Non-alcoholic Steatohepatitis

INTRODUCTION

Non-alcoholic Fatty Liver Disease (NAFLD) is characterized by excessive fat presence in liver, associated with insulin resistance. Currently, it's the predominant liver disorder in Western countries, and it's closely bond to metabolic syndrome and its risk factors. NAFLD encompasses a spectrum of disorders such as the Non-Alcoholic Fatty Liver (NAFL) and its progressive form, the Non-alcoholic Steatohepatitis (NASH), which can evolve in fibrosis, cirrhosis and Hepatocellular Carcinoma (HCC) [1].

HCC mortality is increasing in the last years, making it currently the third cause of death among all neoplasms, a growth that is paralleled by the increased prevalence of NAFLD.

Although the main risk factor for HCC is cirrhosis of any etiology, in the NAFLD spectrum there are many reported cases in non-cirrhotic or even with steatosis alone in the absence of active necroinflammation [2]

Currently, even if NAFLD-associated HCC is a frequent cause for liver transplantation, the present guidelines do not pose

definite recommendation on surveillance in these patients. Therefore, the clinician has to face with few or no indications a hardly diagnosed entity which potentially poses patients at risk of a lethal condition. This case is an example of this scenario: a HCC malignancy diagnosed accidentally in a young patient affected by a then unknown NAFLD.

CASE PRESENTATION

A 34-year-old woman came to our attention after an access to the emergency department for anemia due to genitourinary tract bleeding in the context of a long history of metrorrhagia.

She had no previous history of liver disease or known alteration of liver function; known comorbidities were: a thalassemic trait, mild dyslipidemia, and an overweight condition (BMI: 25,9). Laboratory evaluation showed a reduction in hemoglobin levels: 6.2 g/dL with a MCV of 55.2 fl. Serum transaminase, γ -glutamyltranspeptidase and alkaline phosphatase were all within normal limits, and serologic tests for hepatitis A, B and C were negative.

DISCUSSION

Routine ultrasonography performed in the emergency department showed a large abdominal mass (Figure 1) primarily attributed to a uterine neof ormation, which was later investigated with magnetic resonance imaging (MRI) with hepato-specific contrast. The MRI showed a mass measuring 12,3 x 14 x 12,6 cm,

indivisible from the VI segment with a vascular supply (Figure 2). In the context of the lesion it was possible to see areas with mixed adipose tissue with small hyper vascular and hemorrhagic areas. Two similar masses were found, one in the IV segment, with a 4 cm transversal diameter, and another one in the anterior hepatic margin. At a first glance the greater mass (as the other similar two) was described as an adenoma, while two smaller nodules in the VI and VII-VIII segment were instead deemed as Focal Nodular Hyperplasia (FNH). Moreover, serologic tumor markers were negative - Alpha-fetoprotein of 1,8 ng/ml.

The patient later underwent a selective resection of the V-VI segments, due to the dimension of the neoplasm (Figure 3): the removed mass was described by the pathologist as a highly differentiated hepatocellular carcinoma (HCC) [3] with microscopic features microacinar structures separated by hepatic cells trabeculae and loss of reticulin, a marker of neoplastic transformation, absent in well differentiated HCCs, while present in normal liver sections [4] (Figure 4). Marked steatosis



Figure 1 EUS Large abdominal mass.

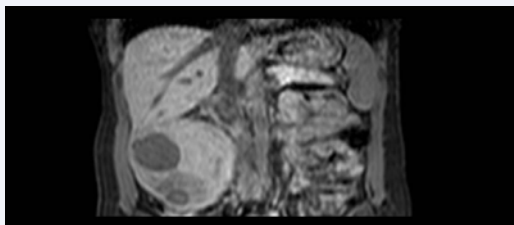


Figure 2 T1-Weighted Gradient-Echo sequence, coronal section.



Figure 3 Pathology.

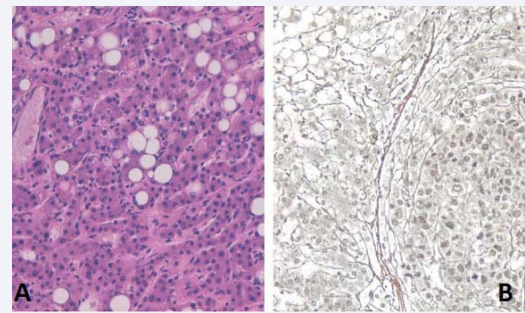


Figure 4 (A - Left) - Well differentiated hepatocellular carcinoma with steatosis (original magnification x200) (B - Right) - Normal liver with intact reticulin (left) and hepatocellular carcinoma with reticulin loss (right) original magnification x 200.

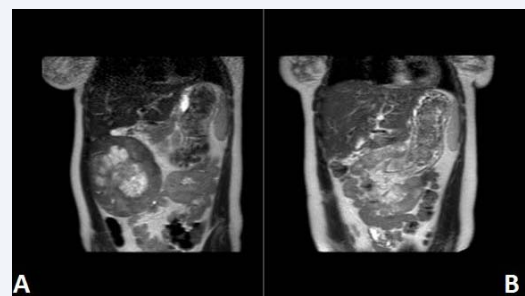


Figure 5 Single-shot Turbo Spin Echo, Coronal Section, Before and After Surgery (A) - Before and (B) - After Surgery.

was reported, along with the absence of necroinflammation, ballooning or fibrosis, with a NAFLD Activity Score (NAS) of 2 [5]. No fibrous stromal layers separating the cells in trabeculae were reported, and CK7 expression was absent. MRI executed three months after surgery (Figure 5) showed that the liver was diffusely filled with numerous fatty nodules, most of which were sub-centimetric and hypovascular in all the performed sequences. Four nodules between 1 and 2 cm in size were identified in the VI, VII and the VIII segments: follow up with MR and CEUS was not sufficient to rule out a neoplastic proliferation, so biopsies of the different nodules were performed. No neoplastic proliferation was found, only evidencing marked and diffuse macro and micro-nodular steatosis, more pronounced than in the previous biopsy: inflammation and ballooning were absent (NAS: 3) and fibrosis too.

After four years from the surgery, the patient is in good health conditions. Currently undergoes bi-annual follow-up with CEUS or MRI, and the four nodules previously reported are stable in dimensions, with no detectable growth.

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