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Case Report

Misleading Imaging of a Hepatic Lesion: Hepatic Lymphoma in a Patient with a History of Dual Primary Malignancies

Kaoutar Maslouhi*, Zineb Izi, Eric Michel Charlemagne Kessi Junior, Basma Dghoughi, Youssef Omor, Rahida Latib and Sanae Amalik

Department of Radiology, National Institute of Oncology, CHU Ibn Sina, Faculty of Medicine and Pharmacy of Rabat, Rabat, Morocco

***Corresponding Author:** Kaoutar Maslouhi, Department of Radiology, National Institute of Oncology, CHU Ibn Sina, Faculty of Medicine and Pharmacy of Rabat, Rabat, Morocco.

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Abstract

Primary hepatic lymphoma (PHL) is a rare malignancy that can mimic hepatic metastases, particularly in patients with known primary cancers such as colorectal and bladder carcinomas. We report the case of a 68-year-old patient with a history of colorectal adenocarcinoma and urothelial bladder carcinoma, who presented with a hypodense hepatic lesion initially suspected to be metastatic. Histopathological examination and immunohistochemistry of the liver biopsy confirmed a diagnosis of diffuse large B-cell lymphoma, germinal center subtype. PET/CT imaging revealed no extrahepatic involvement. This case highlights the diagnostic challenges of PHL and emphasizes the importance of histological confirmation to distinguish it from metastatic disease, ensuring appropriate therapeutic management. Multidisciplinary collaboration is essential to optimize patient outcomes.

Keywords: *Primary Hepatic Lymphoma; Liver Biopsy; Rare*

Introduction

Hepatic lesions discovered on imaging in patients with a history of cancer are frequently interpreted as metastases, especially in the context of colorectal and bladder cancers, both known for their potential to metastasize to the liver. However, not all hepatic lesions are of metastatic origin, and certain differential diagnoses, though rare, must be considered.

Hepatic lymphoma-whether primary or secondary-is an uncommon and often underrecognized entity that can mimic metastasis clinically, biologically, and radiologically. The likelihood of misdiagnosis is even higher in patients with dual malignancies, where the metastatic hypothesis is naturally favored.

We report the case of a patient with a history of colorectal adenocarcinoma and urothelial carcinoma of the bladder, in whom a hepatic lesion initially suspected to be metastatic was ultimately diagnosed as lymphoma, highlighting the diagnostic pitfalls in imaging and the importance of a multidisciplinary approach.

Case Report

A 68-year-old male patient with a medical history of two primary malignancies - a colorectal adenocarcinoma treated with surgery and adjuvant chemotherapy two years earlier, and a urothelial carcinoma of the bladder managed by transurethral resection and intravesical therapy - was referred to our department for routine follow-up imaging.

A contrast-enhanced abdominopelvic CT scan revealed a hypodense hepatic lesion located across segments V and VI (Figure 1). The lesion showed mild peripheral enhancement without significant washout, suggesting a hepatic metastasis in light of the patient's oncologic background. An additional ultrasound was performed, revealing a heterogeneous hypoechoic solid hepatic lesion with lobulated contours (Figure 2).

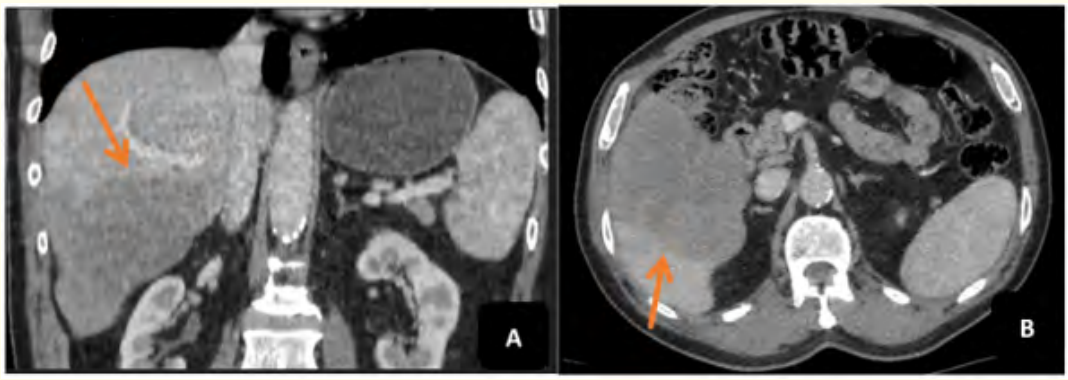

Figure 1: *Contrast-enhanced abdominal CT scan in coronal (A) and axial (B) views (orange arrow) showing a hypodense hepatic lesion straddling segments V and VI.*

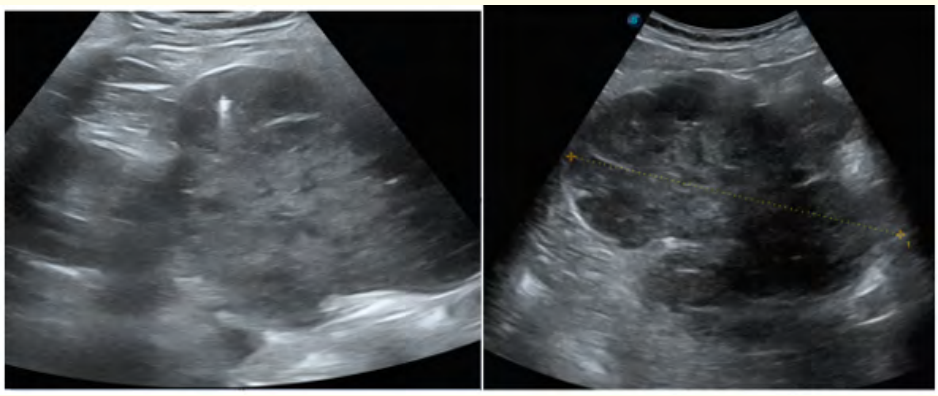

Figure 2: *Ultrasound image showing a heterogeneous hypoechoic solid hepatic lesion with lobulated contours.*

Laboratory tests, including liver function tests and tumor markers (CEA and CA 19-9), were within normal limits. The patient had no clinical signs of liver involvement and reported no systemic symptoms such as fever, night sweats, or weight loss.

Given the discordance between the imaging findings and the patient's oncologic profile, an ultrasound-guided liver biopsy was performed. Histological examination (Figure 3) revealed a dense infiltrate of atypical lymphoid cells. Immunohistochemical analysis showed positivity for CD20, CD10, and Bcl6, and negativity for cytokeratins, consistent with a diagnosis of diffuse large B-cell non-Hodgkin lymphoma (NOS), germinal center type.

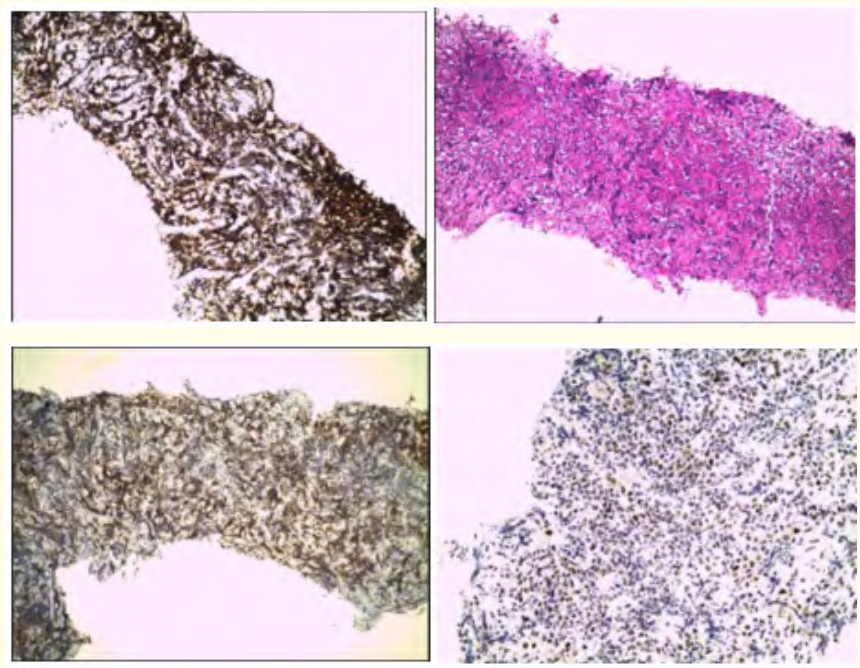

Figure 3: *Histological examination and immunohistochemical showing Diffuse proliferation of atypical large lymphoid cells infiltrating hepatic sinusoids. Immunohistochemistry positive for CD20, CD10, Bcl6, p53, and Ki67 (75%), negative for cytokeratin, CD3, CD5, CD30, and C-MYC. Diagnosis: diffuse large B-cell lymphoma, germinal center subtype, hepatic localization.*

The patient was referred to the hematology department, where a tailored treatment regimen including immunochemotherapy was initiated. At 6-month follow-up, imaging demonstrated a partial response with no signs of disease progression.

Discussion

Primary hepatic lymphoma (PHL) is a rare entity, accounting for less than 1% of non-Hodgkin lymphomas and approximately 0.016% of primary hepatic tumors [1,2]. It is characterized by isolated liver involvement without significant lymph node or bone marrow disease at diagnosis, distinguishing it from secondary hepatic lymphomas, which are common in disseminated systemic disease [3].

In the context of a patient with colorectal and bladder cancers, the discovery of a hepatic lesion primarily raises suspicion of hepatic metastasis, which is by far the most frequent cause. Hepatic metastases from colorectal and urothelial cancers are common and their

imaging features are well described [4]. However, the radiological presentation of hepatic lymphoma can be misleading, with lesions that appear hypo- or isodense on CT, hypoechoic on ultrasound, and lacking typical contrast uptake, sometimes making it difficult to differentiate from metastases or other focal liver lesions [5,6].

The radiological features of PHL are often nonspecific. On MRI, these lesions are typically hypo- or isointense on T1-weighted images, hyperintense on T2, show diffusion restriction, and exhibit mild homogeneous enhancement after gadolinium administration, which can mimic other malignant hepatic lesions [7,8]. Positron emission tomography with FDG (FDG-PET) is useful for detecting extrahepatic spread and assisting in differential diagnosis [9].

Diagnostic confirmation relies on liver biopsy with histological and immunohistochemical studies. The presented case shows a diffuse proliferation of large B-cells expressing CD20, CD10, and Bcl6, consistent with diffuse large B-cell lymphoma (DLBCL), germinal center subtype, the most common subtype in PHL [10,11]. The expression of p53 and a high Ki67 index (75%) indicate active cell proliferation, while negativity for epithelial markers (cytokeratin) excludes carcinoma [12].

Treatment of PHL primarily involves immunochemotherapy, often combining rituximab (anti-CD20) with CHOP protocol (cyclophosphamide, doxorubicin, vincristine, prednisone), which has significantly improved prognosis [13]. Isolated hepatic localization is not itself a poor prognostic factor, but close monitoring is essential due to the risk of subsequent dissemination [14].

This case highlights the importance of considering hepatic lymphoma in the differential diagnosis of a liver lesion in patients with cancer history, especially when imaging characteristics are atypical. Biopsy and thorough immunohistochemical analysis are indispensable to avoid mismanagement that could worsen prognosis [15].

Conclusion

Primary hepatic lymphoma is a rare condition that can be easily overlooked, especially in patients with a history of cancer where hepatic metastases are initially suspected. This case highlights the importance of a rigorous diagnostic approach combining advanced imaging techniques and histological confirmation with immunohistochemistry to avoid misdiagnosis and delays in appropriate treatment. Multidisciplinary collaboration among radiologists, oncologists, hematologists, and pathologists is essential to ensure accurate diagnosis and optimal management, thereby improving the prognosis for patients with this disease.

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