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Clinical Case: Colonic Metastasis of Operated Hepatocellular Carcinoma

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ABSTRACT

Background: Hepatocellular carcinoma (HCC) is the most common liver tumor and ranks as the second leading cause of cancer-related mortality worldwide due to its poor prognosis. Its prognosis is influenced by metastatic spread, mainly intrahepatic but also extrahepatic, which carries a more unfavorable prognosis. The most frequent hepatic metastases occur in the lungs, lymph nodes, bones, and adrenal glands. Atypical sites such as colonic involvement are exceptionally rare and scarcely documented in the literature.

Case Presentation: A 60-year-old female was referred for an atypical hepatic lesion in segment VII, which developed in an otherwise healthy liver. She underwent laparoscopic right hepatectomy in 2016. In 2022, she presented with tumor recurrence, elevated AFP levels, and the appearance of a tumor nodule in the right hypochondrium, suggestive of peritoneal metastatic localization from her previously operated HCC. She underwent right colectomy, and histopathological analyses confirmed the metastatic nature of the lesion, not peritoneal but colonic.

Conclusion: Elevated AFP levels in the context of HCC, even after surgery, should raise suspicion of metastatic recurrence, particularly extrahepatic. Even though rare, colonic metastasis could appear, sometimes in the form of very late recurrence. This underscores the importance of lifelong biological monitoring, including abdominal-pelvic CT scans.

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Introduction

Hepatocellular carcinoma (HCC) is the most prevalent liver tumor, typically developing in a cirrhotic liver (75-80% of cases), less frequently in non-cirrhotic chronic liver disease, and exceptionally on a healthy liver [1]. Its incidence has risen over the past 20 years due to increased hepatitis C infections, NASH cases, and improved diagnosis and treatment of cirrhosis complications. Globally, it ranks fifth in cancer incidence but, due to its poor prognosis, stands as the second leading cause of cancer-related mortality [2].

This prognosis is influenced, among other factors, by tumor extension, found in 30-50% of cases. These metastases are primarily intrahepatic. Extrahepatic metastases, with a worse prognosis, typically manifest in the lungs, lymph nodes, bones, adrenal glands, and peritoneum [3]. Atypical sites, such as colonic involvement, are scarcely documented in the literature. This case presents a colonic metastasis from a hepatocellular carcinoma.

Case Presentation

In this case, a 60-year-old female was being monitored for hepatocellular carcinoma discovered in 2016 during an abdominal assessment for gastric discomfort.

The initial lesion was atypical, presenting as a heterogeneous tissue formation occupying the entirety of hepatic segment VII, exhibiting hepatocytic features with a lipomatous component and arterial phase wash-in. After a review of imaging and discussion in a multidisciplinary meeting, a decision was made for surgical intervention without perioperative chemotherapy.

During the surgery, performed laparoscopically, the exploration of the abdominal cavity revealed no specific findings, notably no ascites, hepatic pedicle lymphadenopathy, or peritoneal carcinomatosis. An ultrasound identified a lesion in the right liver, displacing the right hepatic vein while respecting the middle hepatic vein. A laparoscopic right hepatectomy was performed.

Histopathological analyses confirmed a well to moderately differentiated hepatocellular carcinoma [figure 1]. The margins were clear (R0 resection), there was no vascular invasion, and the

Ki67% was positive, at approximately 10%. The postoperative course was uneventful. The patient underwent regular monitoring as per recommendations: every three months in the first year, then every six months, and eventually annually (AFP level and imaging). Due to the absence of progression after five years, only biological surveillance was maintained.

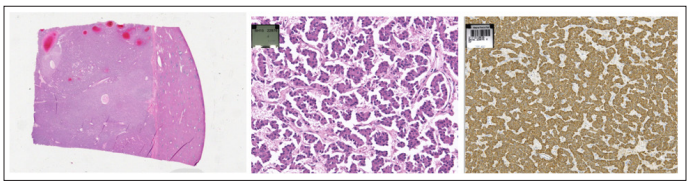

Figure 1: Initial Tumour, Operated in 2016

a. Slide with, on the right, a fairly thin strip of residual normal hepatic parenchyma, and on the left, a wide tumoral area that is slightly more basophilic and congestive (toward the top).
b. Tumor proliferation with a pseudo-acinar and macro-trabecular architecture, composed of hepatoid-appearing cells with a high nuclear-cytoplasmic ratio. 10x magnification.
c. Immunohistochemical study with the HEPATOCYTE antibody; the tumor (Hepatocellular Carcinoma - CHC) strongly expresses the HEPATOCYTE antibody.

In November 2022, with a moderate elevation in alpha-fetoprotein levels to 16.8 µg/L, a decision was made to conduct an abdominal-pelvic CT scan. The scan revealed a 7cm tumor adjacent to the right colon, arising subsequent to the hepatectomy, highly suggestive of a recurrence of her hepatocellular carcinoma operated on six years ago [figure 2].

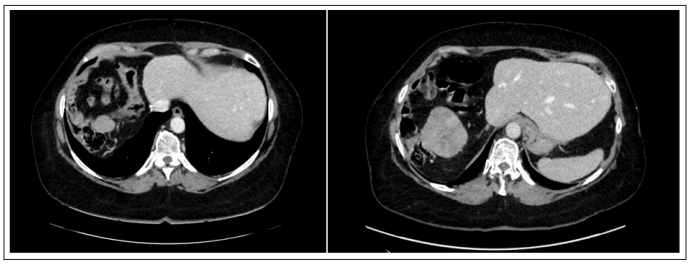

Figure 2: Pre-Operative CT

a. November 2021
b. November 2022

Following discussion in a multidisciplinary meeting, it was decided to propose surgical treatment in the form of a right colectomy. The patient underwent surgery in January 2022. Exploration of the abdominal cavity revealed a retracted mass in the right hypochondrium with diaphragmatic adhesion, without any other distant lesions. A right colectomy was performed with a transverse ileocolic side-to-side end-to-end mechanical anastomosis. The specimen was sent for histopathological analysis, which concluded a metastatic localization within the colonic wall rather than in the peritoneum. It was identified as a well-differentiated hepatocellular carcinoma, consistent with the previously known liver tumor's origin [figure 3,4].

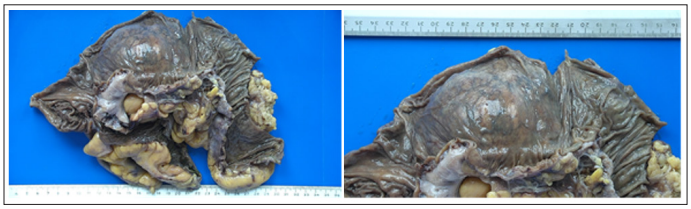

Figure 3: Right Hemicolectomy Specimen. The tumour is Only Visible as a "Bulging" in the Digestive Lumen.

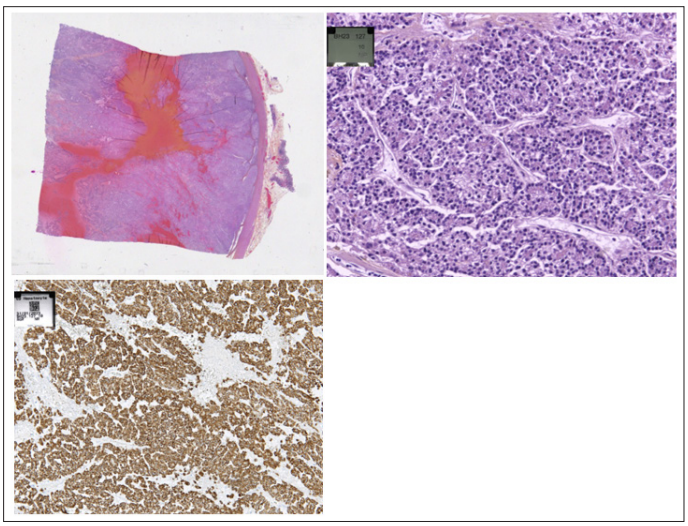

Figure 4: Metastatic Lesion

a. Slide mounted with the metastasis showing marked congestion.
b. Tumor proliferation with trabecular and pseudo-acinar architecture, composed of hepatoid-appearing cells. 20x magnification.
c. Immunohistochemical study with HEPATOCYTE antibody; the tumor strongly expresses the HEPATOCYTE antibody. 10x magnification.

Discussion

Hepatocellular carcinoma (HCC) accounts for 85 to 90% of liver cancers. Globally, it ranks as the sixth most common cancer in terms of incidence, yet due to its poor prognosis, it stands as the second leading cause of cancer-related mortality. Therefore, assessing prognostic factors, particularly extrahepatic involvement, appears crucial.

Pathophysiologically, it is a malignant epithelial tumor originating from hepatocytes, often developing as a nodular lesion. Its onset results from hepatocyte injury caused by alcohol, viruses, or steatohepatitis. In 15% of cases, such as this one, it arises in a healthy liver. Hepatic resection is then the main curative treatment.

Regarding extrahepatic involvement, it accounts for 30 to 50% of cases. Pathophysiologically, metastatic extension can occur through direct extension, via the bloodstream, or through lymphatic pathways. Consequently, metastases predominantly affect the lungs (55%) and lymph nodes (53%). Subsequently, occurrences in bones (28%), adrenal glands (11%), and peritoneum (11%) are observed [4]. Atypical sites (colonic, duodenal, splenic, diaphragmatic, pancreatic) are exceptionally rare and scarcely documented in the literature.

Colonic metastases from HCC are extremely rare. In a retrospective Japanese study conducted over 10 years, where 311 autopsies were performed, concluding 31 cases of HCC, among these autopsies, extrahepatic metastases of HCC were diagnosed in 21 cases (68%). Among these occurrences, only one colonic involvement was identified (4%) [5].

In our case, metastatic extension was facilitated by direct extension, with the right colon adjacent to the hepatectomy site. An article from China reported an intriguing case of a 60-year-old patient with HBV-related HCC discovered emergently due to hemorrhagic rupture of the lesion. The patient underwent right hepatectomy and subsequently developed multiple intrahepatic metastases, treated with surgery, chemoembolization, and radiofrequency ablation. Later, the patient presented with an extrahepatic metastasis in the sigmoid colon, underwent Hartmann's surgery, and histological analyses confirmed the metastatic origin of the hepatocellular carcinoma. Similar to our case, this patient underwent right hepatectomy, but metastatic extension was significantly influenced by the dissemination of tumor cells during the hemorrhagic rupture of the primary lesion [6].

Direct invasion of the digestive tract by HCC is exceedingly rare. Colonic involvement has an estimated incidence of approximately 0.5-2% of cases [7]. It is important to note that in most reported cases, HCC had initially been treated with chemoembolization rather than radical surgery, as in the present case.

In our case, the rise in AFP levels during follow-up aided in detecting metastatic recurrence, coupled with CT scanning. This underscores the importance of extended monitoring, even after surgical treatment, with an R0 resection.

Conclusion

An increase in AFP levels during follow-up should raise suspicion of metastatic recurrence. Although rare, colonic origin should not be disregarded. A thoraco-abdomino-pelvic CT scan appears indispensable for thorough examination.

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