Unusual Unique Renal Metastasis of Rectal Carcinoma

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ABSTRACT

Rectal cancer Is a Common malignant pathology; its usual spread in volves the liver and lungs. The occurrence of renal metastases is exceptional. CT scanning aims to evaluate extension and may incidentally reveal a renal mass, which can be better characterized through MRI and ultrasound. We describe a case of a solitary renal metastasis from rectal cancer and underscore the significant role of imaging in positively diagnosing this uncommon pathology.

CASE REPORT

INTRODUCTION

Renal metastases can be unilateral or bilateral, solitary or multifocal.The most frequent symptoms were abdominal or flank pain, hematuria, weight loss, sweats and fever but most patients with renal metastases have no specific symptoms [1].

2 separate cases of adenocarcinoma of the colon with metastasis to the chin and the bladder, both of which are unusual sites of colorectal cancer metastasis are reported as unusual locations [2].

While melanomas are commonly linked to secondary kidney localization, it's rare for rectal cancer to cause a singular renal metastasis. The specific incidence of renal metastases stemming from rectal cancer is relatively limited, comprising only about 1 to 3% of metastatic cases in individuals with colorectal cancer. Here, we present a case detailing a singular renal metastasis in the setting of metastatic rectal cancer involving the liver and peritoneum

CASE REPORT

Our 29-year-old patient, previously treated for rectal adenocarcinoma with RCC (regional chemotherapy) and surgery, experienced a metastatic relapse to the liver and peritoneum, requiring hepatectomy. He presented with a recurrence of clinical symptoms.

Pelvic MRI revealed a relapse of the disease, showing a mass in the lower rectum measuring 31x42mm. TAP (thorax, abdomen, and pelvis) CT scan confirmed pelvic peritoneal localizations and a mass adjacent to the site of the hepatectomy. An hepatic MRI was requested for characterization.

The MRI revealed the aforementioned mass with heterogeneous T2 signal restriction in places and an annular enhancement after gadolinium injection. This mass extended into the periduodenal region, suggesting a secondary peritoneal localization.

Discovery of a right renal mid-mass demonstrating iso T2 signal with heterogeneous characteristics, enhanced in some areas with slight diffusion restriction and a low ADC at 0.70. The diagnosis of a unique renal metastasis from rectal cancer was established.

DISCUSSION

Colorectal cancer (CRC) is the second and the third most diagnosed malignancy (excluding non-melanoma skin cancers) in females and males, respectively [2]. Additionally, it is the third leading cause of cancer-related death in developed countries [2] resulting in related mortality in 50% of the patients [3].

Dietary habits, such as excessive consumption of red meat and alcohol, might contribute to its development. Originating from cells lining the rectum, it arises when initially normal cells undergo chaotic transformation and proliferation, culminating in the formation of a malignant mass or cancer. The likelihood of cure is substantially decreased in patients with colorectal cancer with metastatic lesions. Regional lymph node metastasis is seen in about 35% of patients with colorectal cancer, but genetic factors leading to colorectal metastasis to lymph nodes are not well understood [4].

These cancerous cells can detach from the primary tumor, utilizing lymphatic or blood vessels to invade other regions of the body, including nearby lymph nodes, the liver, lungs, or peritoneum, forming secondary tumors known as metastases. Although uncommon, rectal tumors can exceptionally progress to renal metastases.

The kidney is a common location for micrometastases in patients with malignant melanomas. These lesions are usually

small, multiple, asymptomatic, and bilateral, and associated with a known primary lesion [5].

The diagnosis of a solitary renal metastasis stemming from cancer presents a challenge, necessitating an anatomopathological approach for confirmation, given documented associations between rectal cancer and primary renal cancer in existing literature. Nevertheless, the existence of other secondary sites might offer predictive value. These renal metastases are frequently discovered incidentally during primary cancer staging, notably through various medical imaging examinations.

Ultrasound examination reveals a uniform, hypoechoic mass exceeding 2 cm, although it might underestimate the count in cases of multiple renal metastases. CT scans retain significance particularly in cystic renal masses, but their primary utility lies in incidentally detecting renal metastases, presenting as iso- or hypodense masses with tissue density, sometimes exhibiting contour deformations and moderate enhancement. Meanwhile, MRI demonstrates hypo-T1 and hyper-T2 characteristics, moderately enhanced due to the hypovascular nature of renal metastases

CONCLUSION

Distant metastasis from colorectal carcinoma most often occurs in the liver and lungs. Metastasis to bones, adrenals, lymph nodes, brain, and skin has also been reported [6].

A solitary renal metastasis secondary to rectal cancer is a rare pathology. The often inconspicuous clinic and biology highlight the pivotal role of imaging (ultrasound, CT scan, and MRI), particularly if other secondary locations are absent. Conversely, a solitary metastasis may mimic a combination of two cancers, rendering the diagnostic decision more challenging, hence the importance of histology in providing a definitive diagnosis.

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FIGURES

Figure 1: IRM T2 sagittal : showing tumor thickening in the rectum with T2 SIGNAL

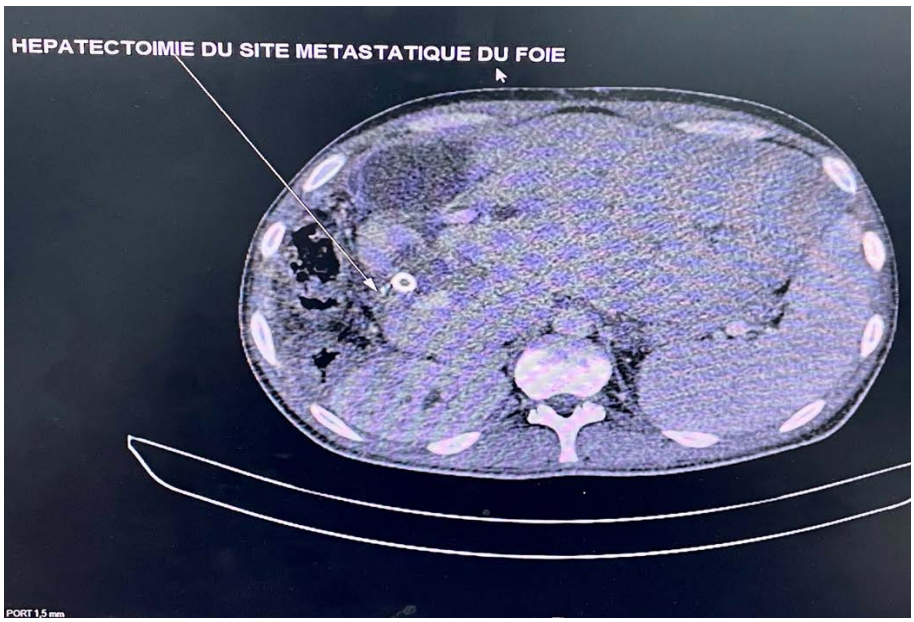

Figure 2: CT Axial : Right hepatectomy for secondary metastases in the liver.

Figure 3: Axial section showing a right renal mass with secondary appearance in iso T2 heterogeneous signal

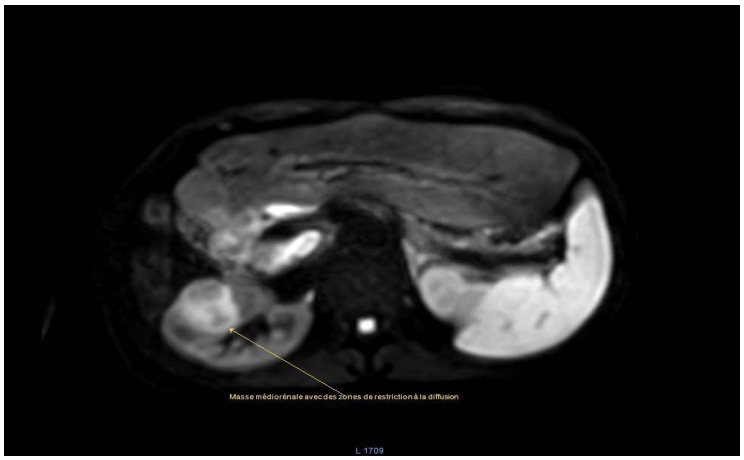

Figure 4: DWI (Diffusion-weighted imaging) sequence: Right renal mass with diffusion restriction

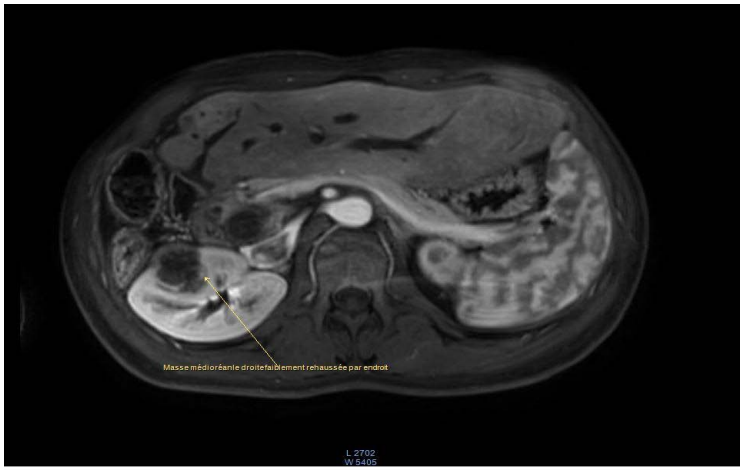

Figure 5: Axial section: Contrast injection displaying peripheral enhancement of the renal mass within a context of peritoneal carcinosis and rectal tumor recurrence, suggesting a secondary right renal mass.

Figure 6: Ultrasound reveals presence of metastasis in right kidney

KEYWORDS

Renal; Métastasis; Rectal carcinoma; Kidney; Unique metastasis