

Multimodal Management of CRC Liver Metastases with Hepatectomy and Microwave Ablation

PURPOSE

Colorectal malignancy ranks as the third most prevalent global cancer, with liver metastases being the most common spread site (1). Surgical resection is considered the gold standard treatment for colorectal cancer liver metastases (CRLM), offering curative outcomes (2). Additionally, neoadjuvant systemic chemotherapy helps decrease tumor size prior to resection. Despite these efforts, tumor recurrence remains a significant problem, with 50-75% of patients experiencing disease recurrence within two years post-resection (3). Conventional management of recurrent CRLM often involves a second hepatic resection (3), however, alternative approaches have been insufficiently explored in the literature. Here, we present a case of recurrent CRLM successfully treated with percutaneous microwave ablation (MWA), highlighting the potential for its use in this context.

MATERIALS & METHODS

A 67-year-old male with a history of moderately differentiated adenocarcinoma underwent laparoscopic sigmoid colectomy with low anterior resection anastomosis. He was referred for evaluation of two new liver lesions found on a follow-up MRI. After 7 rounds of FOLFOX adjuvant therapy, the lesions decreased in size from their initial measurements of 4 x 3.5 cm and 1.3 x 1.3 cm to 3 x 3 cm and 2 x 0.5 cm, respectively. A right hepatectomy was planned and portal vein embolization was performed preoperatively to increase the size of the future liver remnant. Following resection, he received 5 more cycles of FOLFOX and was recovering well. However, an MRI 8 months post-resection revealed a new 1.7 x 2 x 1.9 cm lesion along the hepatic resection margin, indicating recurrent disease (Figure 1a).

RESULTS

After discovering the new lesion, the patient was referred for CT-guided MWA (Figure 1b). A follow-up MRI after 6 months revealed another nodular focus, measuring 1.8 x 2.1 x 1.4 cm (Figure 2a), along the posterior hepatic resection margin. A second CT-guided MWA procedure was performed in response, and an additional round of FOLFOX was completed. Nine months later, follow-up imaging (Figure 2b) showed no evidence of disease, with negative signaterra and CEA results.

Figure 1. CT-guided percutaneous microwave ablation (MWA) in a 67-year-old male status post right hepatectomy with recurrent colorectal cancer liver metastases (CRLM) along the hepatic resection margin. (a) Pre-procedural Eovist contrast-enhanced T-1 weighted MRI shows the targeted lesion measuring up to 2 cm (red circle). (b) Intraprocedural CT image shows the MWA needles transgressing the hepatic parenchyma and targeting the lesion.

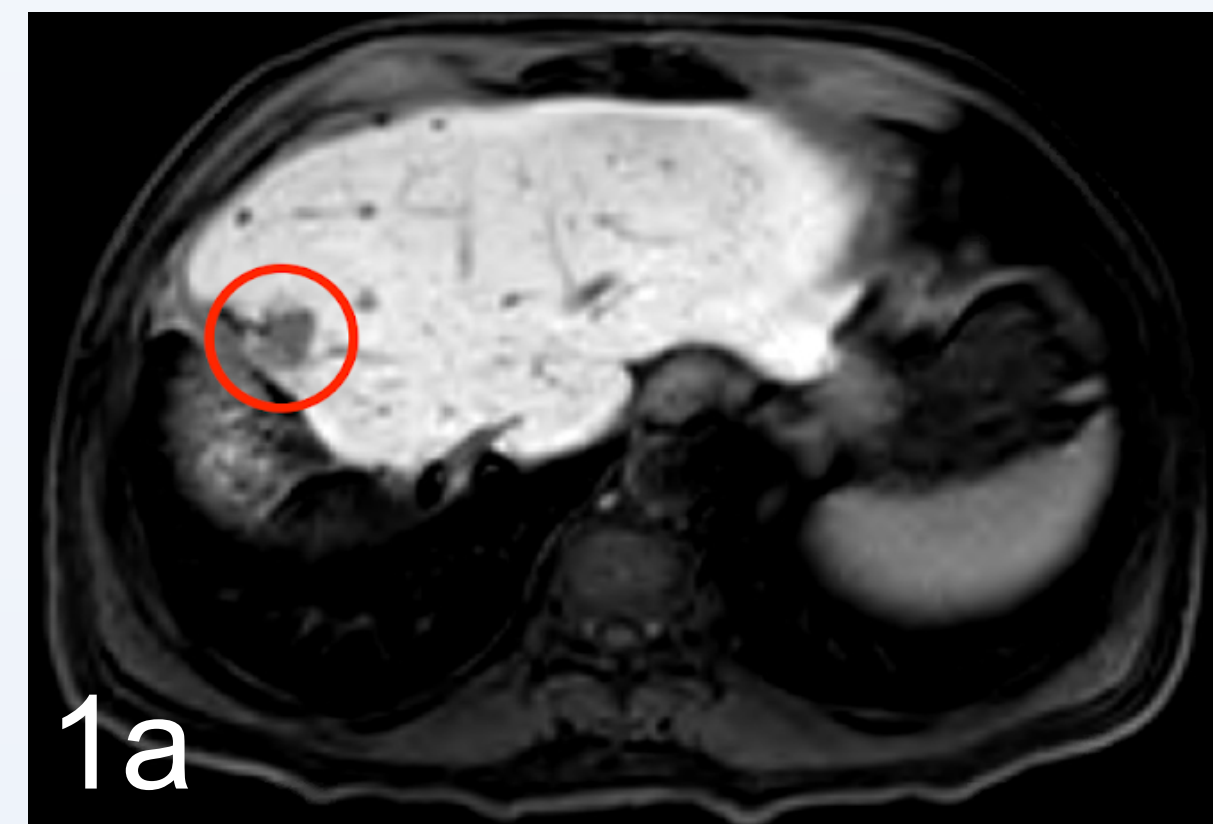
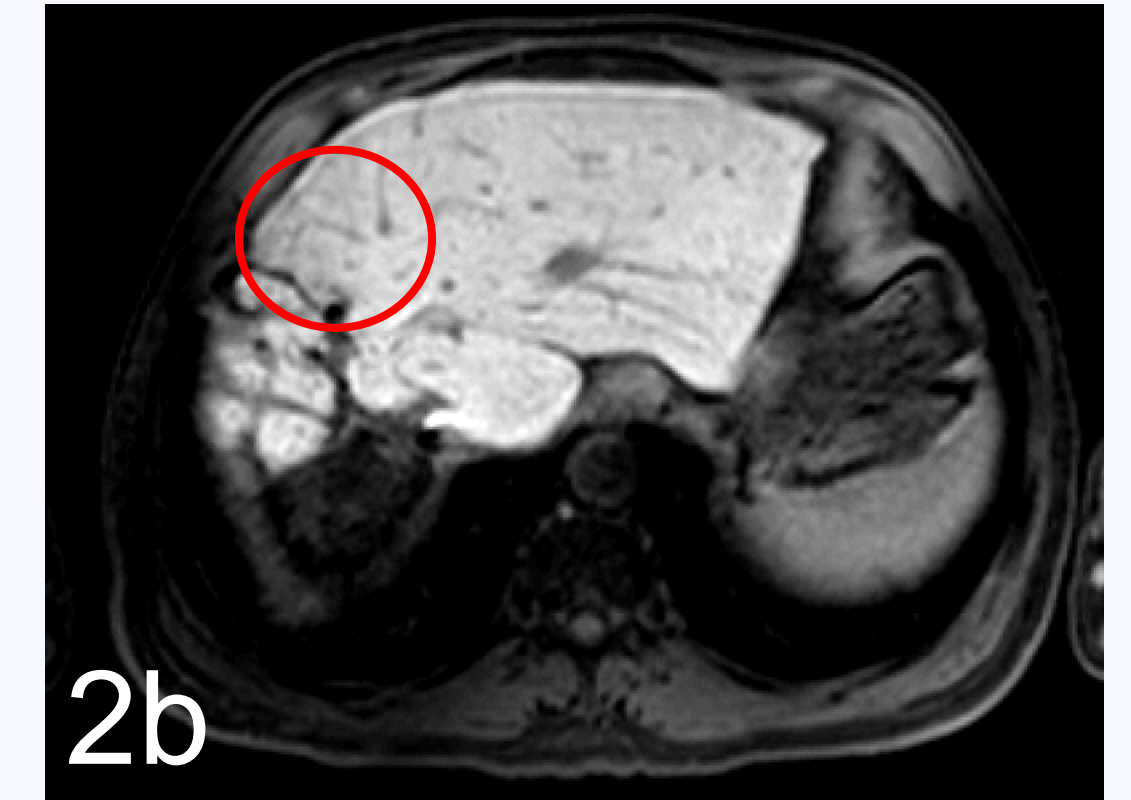
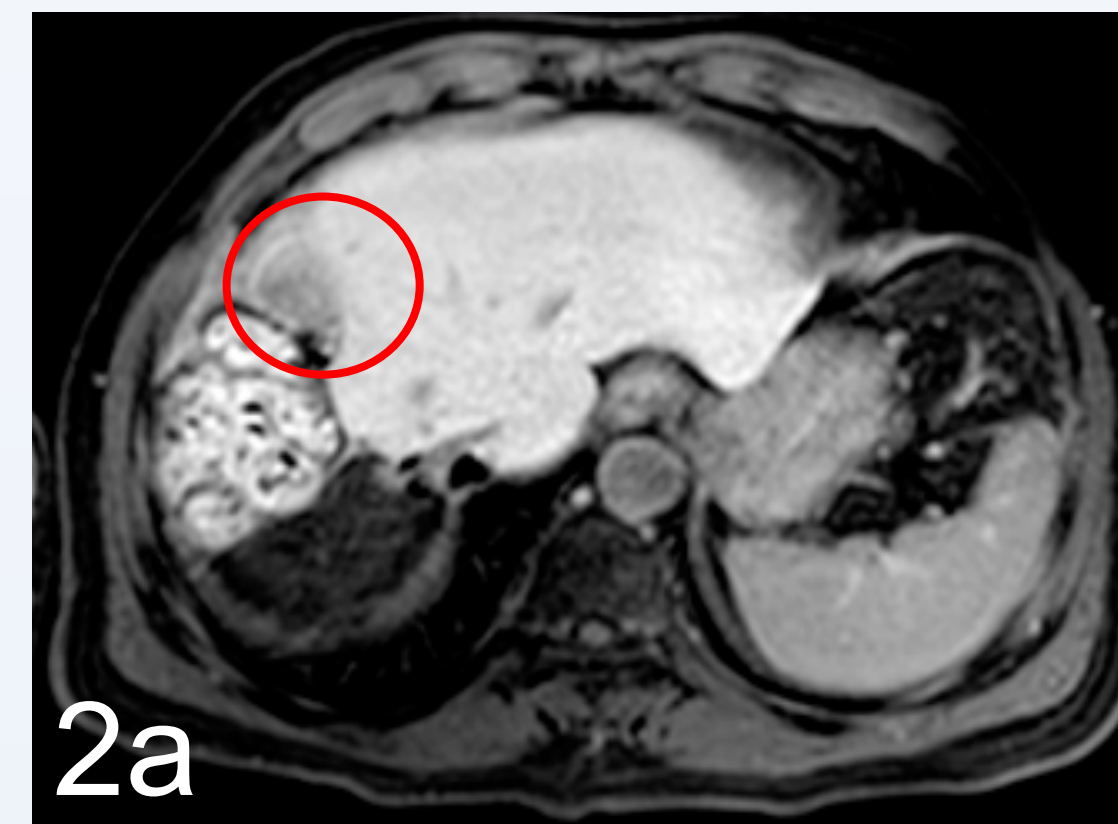


Figure 2. CT-guided percutaneous microwave ablation (MWA) in a 67-year-old male status post right hepatectomy and MWA with recurrent colorectal cancer liver metastases (CRLM) along the posterior hepatic resection margin. (a) Pre-procedural Eovist contrast-enhanced T-1 weighted MRI shows the targeted lesion measuring up to 2.1 cm (red circle). (b) Nine months after the second MWA, Eovist contrast-enhanced T-1 weighted MRI shows diffuse contrast enhancement along the hepatic resection margin, indicating no evidence of disease.



CONCLUSIONS

In conclusion, our case highlights the value of MWA as a valuable tool in managing recurrent CRLM, particularly for patients with limited chemotherapy tolerance. The literature presents MWA as a promising treatment option for primary CRLM, particularly for tumors less than 3 cm in size (4). However, MWA remains relatively unexplored as a treatment option for recurrent disease. Our case thus demonstrates the benefits of using MWA in this context. Further research is imperative to determine the ideal candidates for this therapy and to evaluate its long-term efficacy and outcomes.

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