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A multimodal strategy to a case of caecal neuroendocrine tumour with hepatic metastasis: Is open right hemicolectomy, radiofrequency ablation and metastetectomy an optimal treatment plan?

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Introduction

Neuroendocrine tumours (NETs) arise from cells with both nerve and endocrine features, giving rise to its unique histological, and biological characteristics. These rare tumours most commonly develop in the gastrointestinal (GI) tract and bronchopulmonary system. NETs are increasingly diagnosed, with an annual incidence of 6.9 per 100,000. They often grow slowly, leading to late diagnoses and symptoms like vague abdominal pain or GI obstruction when tumours exceed 2 cm. The GI's lymphatic network increases metastasis risks to lymph nodes and the liver. Prognosticating the disease involves both TNM staging and the Ki-67 index. This case report evaluates open right hemicolectomy, radiofrequency ablation, and metastasectomy for treating caecal NET with hepatic metastasis.

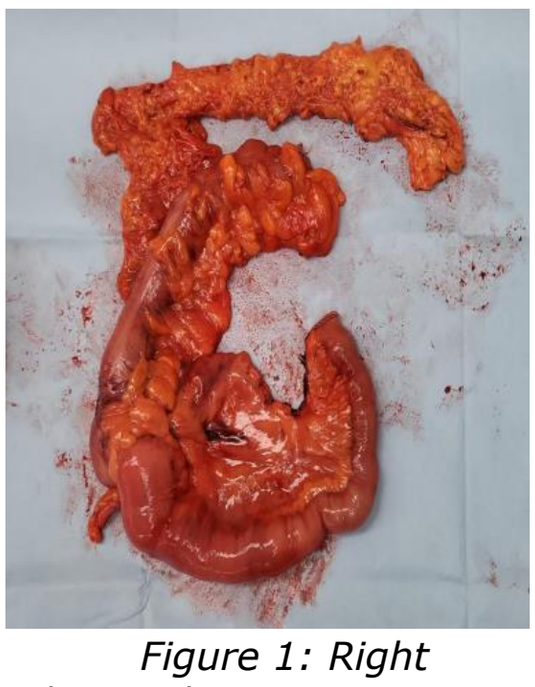
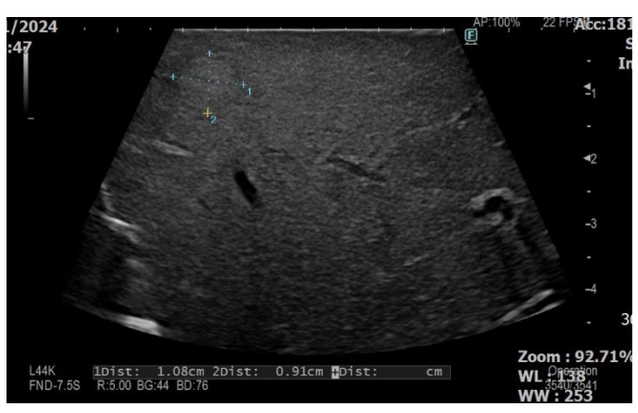
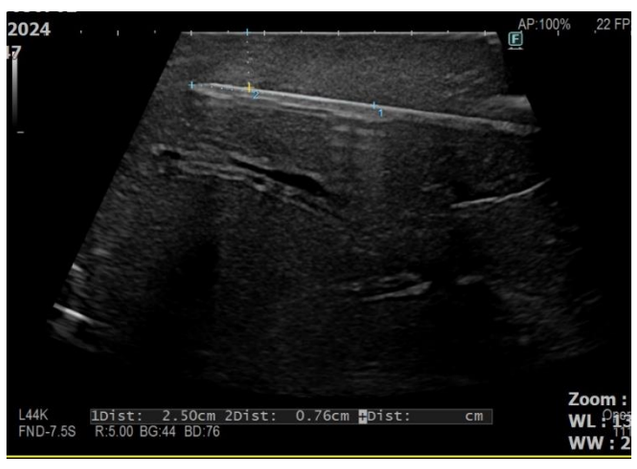


Figure 1: Right hemicolectomy specimen

Case presentation





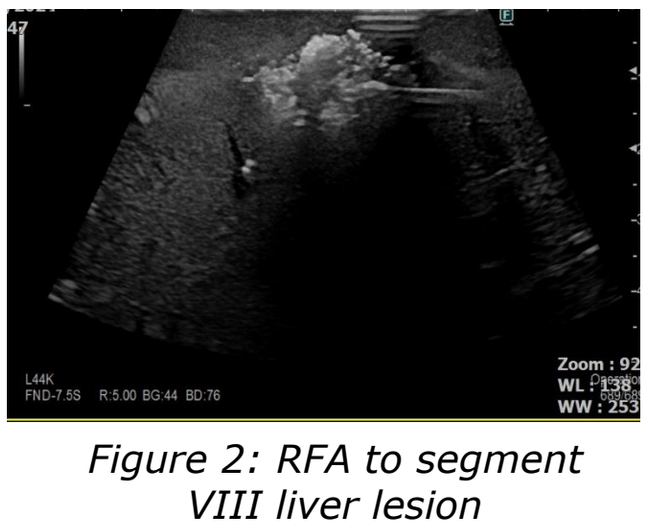


Figure 2: RFA to segment VIII liver lesion

We present a case of a 60-year-old woman with no previous medical or surgical history, who arrived at our emergency department with a four-day history of right iliac fossa pain, loose stools, loss of appetite, and feeling feverish. Clinically, she appeared well, with localized tenderness in the right iliac fossa, but no signs of rebound tenderness or guarding. Initial lab tests showed mildly elevated septic markers, with normal renal and liver parameters, and an unremarkable abdominal X-ray. She was admitted with a preliminary diagnosis of acute appendicitis or diverticulitis.

A CT scan revealed subcentimeter wall thickening in the ascending colon, ileocaecal junction, and distal ileum, suggesting infection or inflammation, and a 2 x 2.3 x 3 cm lesion in the ascending colon, along with several hypodense liver lesions. Colonoscopy discovers features of colitis with superficial ulcers and an erythematous caecum, initially raising suspicion of TB gut. However, biopsies confirmed a low-grade neuroendocrine tumour. Further imaging revealed liver metastases without lung involvement, and a DOTATATE scan showed uptake in the liver, regional lymph nodes, and right femoral head.

A multidisciplinary team, including colorectal, hepatobiliary, and interventional radiology specialists, recommended a multimodal treatment plan involving right hemicolectomy, metastasectomy, and radiofrequency ablation (RFA). During surgery, RFA was successfully performed on liver lesions, with additional metastasectomy of a superficial lesion, followed by right hemicolectomy. The patient's postoperative recovery was uneventful, and she was discharged on day five. Histopathology confirmed a well-differentiated neuroendocrine tumour with metastasis. A follow-up CT scan two months later showed no residual or new liver lesions, and she was referred to oncology for ongoing management and care.

Discussion

The management of metastatic caecal neuroendocrine tumours (NETs) requires a multidisciplinary, multimodal approach. Surgical intervention, as highlighted by Eto et al., is crucial for both localized and metastatic disease. The World Journal of Gastrointestinal Oncology highlights the shift towards combining surgery with other treatments like radiofrequency ablation (RFA). Our patient's treatment plan, involving right hemicolectomy, metastasectomy, and RFA, reflects this strategy, aiming for comprehensive tumour control. Madishetty et al. emphasize the need for individualized treatment based on accurate staging. In our case, a DOTATATE scan revealed the extent of metastasis, enabling a tailored treatment plan. The NANETS guidelines recommend a multidisciplinary approach, combining surgical resection, systemic therapies, and interventional radiology. Our patient's coordinated care from colorectal, hepatobiliary, and interventional radiology teams aligns with these guidelines. The patient's initial symptoms, diagnostic challenges, and the confirmation of a low-grade NET with liver metastases through advanced imaging emphasizes the importance of accurate staging and tailored treatment. The successful execution of right hemicolectomy, metastasectomy, and RFA, along with the patient's favourable postoperative course, validate the effectiveness of this comprehensive approach, illustrating advancements in managing metastatic NETs.

Conclusion

This case demonstrates the advancements in diagnostic and therapeutic strategies for neuroendocrine tumours, underscoring the value of a tailored, multidisciplinary approach in achieving favourable outcomes for patients with metastatic disease.

References
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