A rare case of primary mesenteric carcinoid with liver metastases

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Patient: 60 years, female

Clinical History:

A 60-year-old female patient presented with dull aching abdominal pain, loss of appetite and diarrhoea for two weeks. The physical examination findings were normal. The laboratory investigations showed elevated urine 5-HIAA (5-Hydroxy indole acetic acid) levels.

Imaging Findings:

Abdominal ultrasound revealed a well-defined hypoechoic lesion measuring 3.3 x 2.2 cm in the mesentery, with few specks of calcification and internal vascularity. Multiple well-defined hypoechoic lesions with internal vascularity were noted in both lobes of the liver (Fig. 1, 2).

Computed tomography (CT) revealed a well-defined hyperdense lesion (48 to 54 HU) with few specks of calcification and peripheral radiating fibrotic bands in the mesentery (Fig. 3). Multiple hyperdense lesions (44 to 50 HU) of varying sizes were seen in both lobes of the liver (Fig. 4). On contrast-enhanced CT, mesenteric and liver lesions showed intense enhancement with early contrast washout (Fig. 5, 6, 7).

Few sub-centimetric para-aortic and mesenteric lymph nodes were noted.

There was no evidence of enhancing mass lesions in the gastro-intestinal tract.

Based on these findings, primary mesenteric carcinoid with liver metastasis was diagnosed. Ultrasound-guided FNAC from the mesenteric and liver lesions confirmed the diagnosis of carcinoid tumour.

Discussion:

Primary mesenteric carcinoid tumours are rare. Secondary mesenteric involvement of small bowel carcinoid tumours is seen in 40% to 80% of cases [1].

The occurrence of a carcinoid tumour in the mesentery can be explained by the presence of neural crest cells in small amounts in unconventional sites such as interatrial septum of the heart, the liver hilum, and mesenteric vessels due to the dispersed migratory properties of the neural crest [2].

Due to inadequate evaluation and exclusion of another primary source of a carcinoid tumour, the primary nature of
mesenteric carcinoids is regarded as unproven [3]. In our case, CECT revealed an avidly enhancing hyperdense solid mass lesion with few specks of calcifications in the root of the mesentery. Complete endoscopic workup of the entire gastro-intestinal tract revealed no evidence of any other primary tumour. In conjunction with specific radiologic studies, pathologic analysis and comprehensive immunohistochemistry, the primary nature of the mesenteric neuroendocrine tumours was confirmed in our case.

Patients present in a sixth or seventh decade with male predominance (50-60%). Due to the location of origin, slow growth of a tumour or nonspecific symptoms, usually diagnosis may be delayed for 5-7 years and thus patients present in an advanced stage [4, 5, 6]. In our case, the patient presented with dull aching abdominal pain, loss of appetite and diarrhoea at the age of 60 years.

Approximately half of carcinoid patients present with liver metastasis. Distant metastasis rates from carcinoid tumours increase up to 80 to 90% when the size of a tumour is larger than 2 cm [1, 2]. In our case, the patient presented in an advanced stage with extensive liver metastasis.

On CT, mesenteric carcinoid tumours exhibit varying degrees of fibrosis, calcification, neurovascular bundle invasion, necrosis or lymph node metastasis. Characteristic smooth contoured soft tissue mass is seen surrounded by radial bands caused by the desmoplastic reaction by a tumour or neurovascular bundle invasion or both [2]. Our patient had all the features mentioned above.

For tumours smaller than 2 cm, local resection is adequate. However, for tumours larger than 2 cm with regional mesenteric metastasis and lymph node involvement, wide excision with lymph node dissection is needed [7].

Somatostatin analogues are the first line of treatment for the unresectable advanced disease. As our patient presented with liver metastasis, chemotherapeutic agent Octreotide has been given, and the patient has improved symptomatically.

**Differential Diagnosis List:** Primary mesenteric carcinoid with liver metastases, Secondary mesenteric carcinoid, Lymphoma

**Final Diagnosis:** Primary mesenteric carcinoid with liver metastases

**References:**


**Figure 1**

### Description:
Ultrasound abdomen shows a well-defined hypoechoic lesion with internal vascularity and a speck of calcification in the mesentery. **Origin:** Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India.
Description: Ultrasound abdomen shows multiple well-defined hypoechoic lesions of varying sizes in both lobes of liver. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India
Description: Axial image shows a well-defined hyperdense lesion measuring 3.3 x 2.2 cm in the mesentery, with few specks of calcification and radiating fibrotic bands. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India
Description: Axial image shows multiple well-defined hyperdense lesions of varying sizes in both lobes of liver. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India
Figure 5

Description: Axial image shows intense enhancement of the mesenteric lesion with radiating fibrotic bands. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India
Description: Axial image shows intense enhancement of the liver lesions. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India
Description: Coronal image shows intense enhancement of the mesenteric and liver lesions. Origin: Nanjaraj CP, Department of Radio-diagnosis, Mysore Medical College and Research Institute, Mysore, India.