

Hepatoid gastric adenocarcinoma. A case report

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Case Report

Radiology



Background: The hepatoid gastric adenocarcinoma is an extrahepatic tumor that shares morphological similarities with hepatocellular carcinoma. It is a malignant tumor with a very low incidence, representing 1.3–1.5% of all gastric tumors and 2–6% of gastric adenocarcinomas. This type of tumor has a poor prognosis, is aggressive, and often fatal. Symptoms are highly nonspecific, with the most common being abdominal pain, followed by fatigue, abdominal distension, and anemia.

The main risk factor is *Helicobacter pylori* infection. Most cases are associated with elevated alpha-fetoprotein levels, making them more aggressive. Endoscopy is the most sensitive and specific diagnostic method, although the accuracy rates for differentiating T1 and T2 tumors using abdominal CT scans have improved in recent years, reaching 65%–82% due to the use of gastric distension, thin-slice reconstructions, and multiplanar imaging. For a definitive diagnosis, a combination of endoscopic, imaging, and pathological studies is required.

Keywords: Hepatoid gastric adenocarcinoma, Alpha-fetoprotein (AFP).

Hepatoid gastric adenocarcinoma is a malignant epithelial tumor originating from the glandular mucosa of the stomach, with very low incidence, poor prognosis, aggressive behavior, and high lethality (with a 5-year survival rate of 15–20%). Anatomically, its most common location is the stomach, particularly in the antrum and pylorus. Its symptoms are highly nonspecific, which contributes to delayed diagnosis, with 27% of patients diagnosed at stage III and 38.5% at stage IV.

This tumor primarily spreads through lymphatic pathways, with hepatic metastases being the most common hematogenous spread. In this case, a 56-year-old male patient was diagnosed with hepatoid gastric adenocarcinoma. Triphasic abdominal CT scans and pathological analysis were essential for characterizing the tumor and determining its extent of dissemination. Given this, the report focuses on describing the imaging findings associated with this gastric neoplasm.

Case report

Male patient, 56 years old, originally from Cantel, Quetzaltenango. The patient reported that one month ago, he visited the emergency department of our hospital due to abdominal pain, but requested an unauthorized discharge, leaving his medical evaluation incomplete. He now returns with abdominal pain lasting seven days, located in the epigastric region, rated 8/10 in intensity, sharp in nature, predominantly in the morning, and associated with weight loss over the past three months and dyspnea with mild exertion. On physical examination, in the left hemiabdomen, a solid mass with irregular borders, mobile, and painful on palpation was detected, measuring approximately 10 cm in diameter. Other relevant findings included elevated carcinoembryonic antigen (CEA) levels of 518 ng/mL, while alpha-fetoprotein (AFP) levels remained normal at 2.4 ng/mL. Due to the patient's symptoms, a triphasic abdominal CT scan was

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Figure 1. In the abdominal CT scan, in the unenhanced phase with oral contrast. **Image A**, an axial section shows diffuse fat infiltration of the gastric body, affecting both the greater and lesser curvature, as well as the pyloric antrum. **In Image B**, after the administration of intravenous contrast in the arterial phase, the loss of normal gastric chamber configuration is more clearly delineated, along with infiltration into adjacent structures, such as the liver and peritoneum. **In Image C**, the pathology results indicate the presence of invasive hepatoid adenocarcinoma.

performed, followed by a gastric wall biopsy via endoscopy, which revealed an invasive hepatoid adenocarcinoma.

Discussion

Due to the rarity of hepatoid adenocarcinoma, its low incidence, and its association with nonspecific symptoms, diagnosis is often delayed, typically occurring at advanced stages of the disease. While endoscopy is the most sensitive and specific method for diagnosis, allowing for direct visualization of the tumor's location, the extent of mucosal involvement,

and tissue biopsy for histopathological confirmation; double-contrast gastrointestinal series play a crucial role in initial diagnosis. In fluoroscopy, three main presentation patterns can be observed: malignant ulcer, polypoid/nodular gastric wall thickening, and diffuse infiltrative pattern (Linitis plástica).

CT has been limited in the early detection of gastric cancer (T1); however, accuracy rates for differentiating T1 and T2 tumors have improved in recent years. Multidetector CT (MDCT) has an accuracy $\geq 90\%$ for detecting gastric cancer, especially when using multiplanar reconstruction (MPR) and virtual gastroscopy (VG). The portal phase is the best for assessing gastric wall layers, and the arterial phase can be added to study gastric vascular anatomy. Clinical guidelines recommend CT and, in some cases, PET-CT as the preferred imaging tests for detecting metastases.

Radiological features suggestive of gastric adenocarcinoma in CT include: gastric wall thickening >1.5 cm, abnormal enhancement of the gastric wall, obliteration of normal gastric wall layers, formation of perigastric fat clumps and perigastric lymphadenopathy.

CT also helps evaluate the presence of peritoneal carcinomatosis, which indicates an incurable disease, making a thorough peritoneal assessment essential. Regarding MRI, diffusion-weighted imaging (DWI) can be used to differentiate gastric tumors from normal gastric walls, potentially enhancing peritoneal carcinomatosis detection.

Conclusion

Hepatoid gastric adenocarcinoma is a rare and uncommon malignant tumor with a poor prognosis, high aggressiveness, and high mortality rate. Due to its nonspecific symptoms, a high clinical suspicion is required for diagnosis, necessitating a combination of endoscopic, imaging, and pathological studies, along with unconventional histochemical methods.

Currently, there is no curative treatment, and no consensus exists on the best approach for managing these tumors. Survival rates improve with a combined treatment of surgery and palliative chemotherapy. In the case of our patient, there was extensive dissemination to multiple neighboring structures, further worsening his survival prognosis.

Conflicts of interests

None declared by the authors.

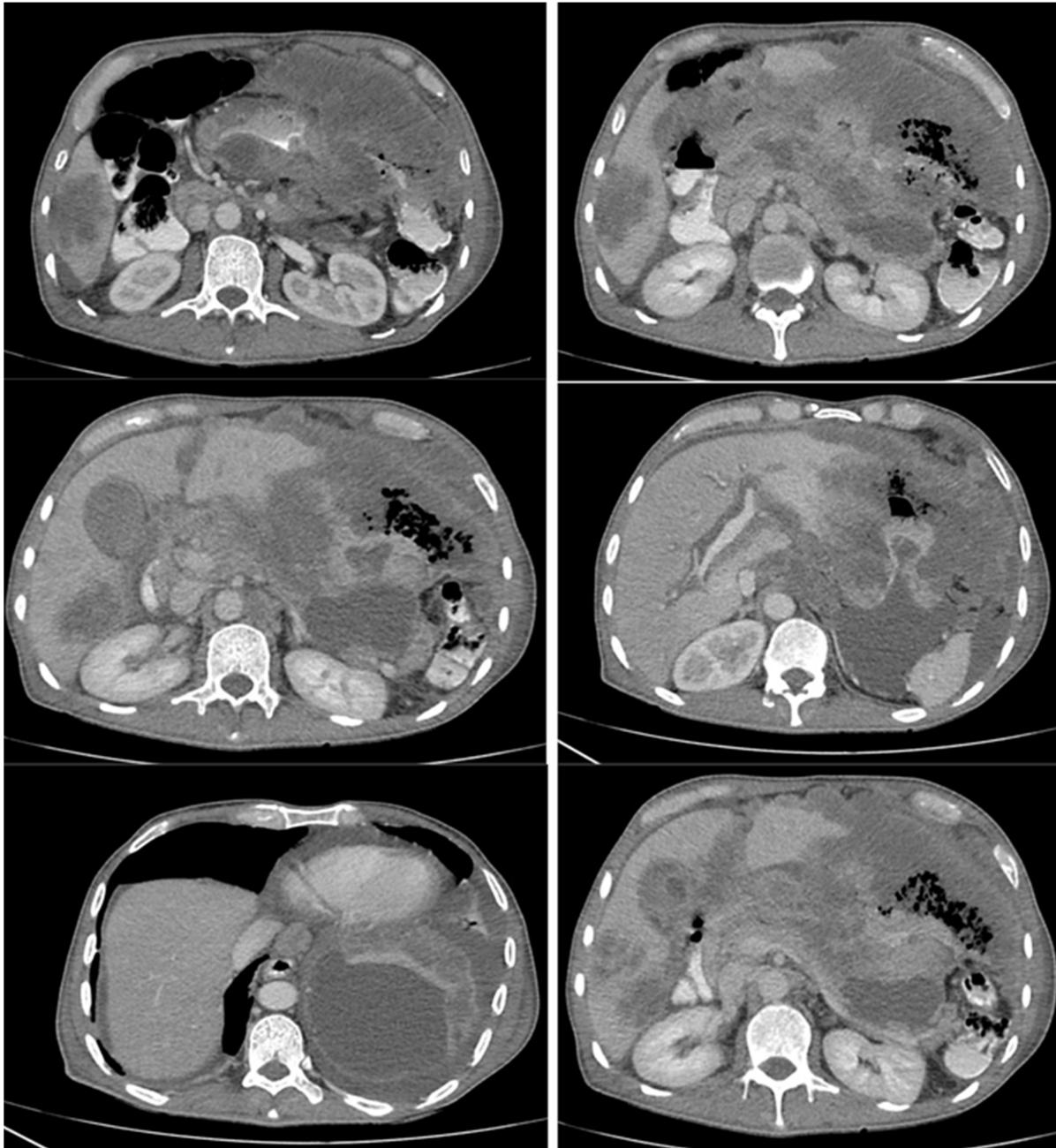


Figure 2. In the triphasic abdominal CT scan with oral contrast. **Image A:** Infiltration of the greater omentum (Omental Cake). **Image B:** Infiltration of the lesser omentum. **Images C and D:** Infiltration of the falciform ligament and gastroduodenal ligament. **Image E:** Presence of peritoneal carcinomatosis, infiltrating the left hemidiaphragm. **Image F:** Multiple lesions in the liver parenchyma.

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