

CASE REPORT

Palliative Resection of Mucinous Cystadenocarcinoma of the Pancreas Mimicking Gastric Tumor with Liver, and Splenic Metastases

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ABSTRACT

Background Mucinous cystadenocarcinomas of the pancreas are uncommon tumors. When they affect only the pancreas, surgery usually involves a better prognosis. We describe a case report of a young male patient with mucinous cystadenocarcinomas of the pancreas focusing on the tumor-like mimicking gastric adenocarcinoma. **Methods** We report the case of a twenty-seven-year-old male with a mucinous cystadenocarcinoma of the pancreas with gastric infiltration and hepatic and intra-splenic metastases. A pancreatic tail resection with total gastrectomy, splenectomy, cholecystectomy, V-VI hepatic segmentectomy and extended D2+ lymphadenectomy was performed. **Results** After 24 months of follow-up, the patient presented progression of the disease with multiple unresectable hepatic metastases. **Conclusion** Mucinous cystadenocarcinomas has a better prognosis after surgical resection when it is located only in the pancreas and there are no distant metastasis. The prognosis in patients who are not candidates for surgery or in those in whom metastasis already exists at the time of diagnosis is bleak. However palliative resection may improve survival and quality of life in those cases.

INTRODUCTION

MCAC of the pancreas account for approximately 15% of neoplastic lesions affecting this organ. An early and precise diagnosis of this type of tumors makes the surgical resection, when it is possible, the key to having a more favorable prognosis. MCAC of the pancreas are usually located primarily in the distal part of the pancreas. The gender distribution is almost exclusive to women [1]. Mucinous cystic neoplasms tend to grow slowly and frequently reach a considerable size before becoming symptomatic. Once a mucinous cystic neoplasm is diagnosed, extirpation is undertaken principally because of the tumor's malignant potential [2].

CASE REPORT

We present the case of a twenty-seven-year-old man who visits the clinic for abdominal pain localized in the epigastrium of two months of evolution accompanied by weight loss. In a routine analysis, a microcytic anemia with hemoglobin values of 10 g/dL and a mean corpuscular volume of 75.3 fL is evident. A high digestive endoscopy is performed in which an enlarged and ulcerated mucosa is observed, 2-3 cm with spontaneous bleeding at fundus level and greater curvature. Biopsy of the lesion is reported

as infiltration by adenocarcinoma without being able to specify the origin of the lesion.

An abdominal-pelvic CT scan was performed in which a thickening of the wall affecting the fundus and proximal gastric body was identified, reaching a thickness of approximately 21 mm and an approximate extension of 50 mm in relation to gastric tumor as the first possibility. Such thickening appears to ulcerate with formation of a fistulous path towards the spleen, which presents a contiguous metastatic lesion measuring 30×23 mm (**Figure 1**).

Adjacent large necrosed adenopathies of 15 mm and 17 mm are also described. In the hepatic segment VI, an occupant lesion of 32 mm in diameter is visualized, which presents an uptaking ring in the arterial phase which, in the venous phase, becomes hypodense and translates into a metastatic nature.

As the histopathological study did not provide an accurate diagnosis, and because of the tests performed, the extent of the tumor, as well as the age and sex of the patient, we interpreted that it was a locally advanced gastric cancer as the first possibility. For this reason, the surgery was considered as the first option without the previous treatment of neoadjuvant chemotherapy which, as far as we are concerned, would have been less favorable for the patient in this case (**Figure 2**).

The patient underwent surgery with total gastrectomy with D2+ lymphadenectomy, pancreatic tail resection, splenectomy, cholecystectomy and V-VI hepatic segmentectomy.

The anatomopathological study showed that it was a moderately differentiated mucinous cystadenocarcinoma

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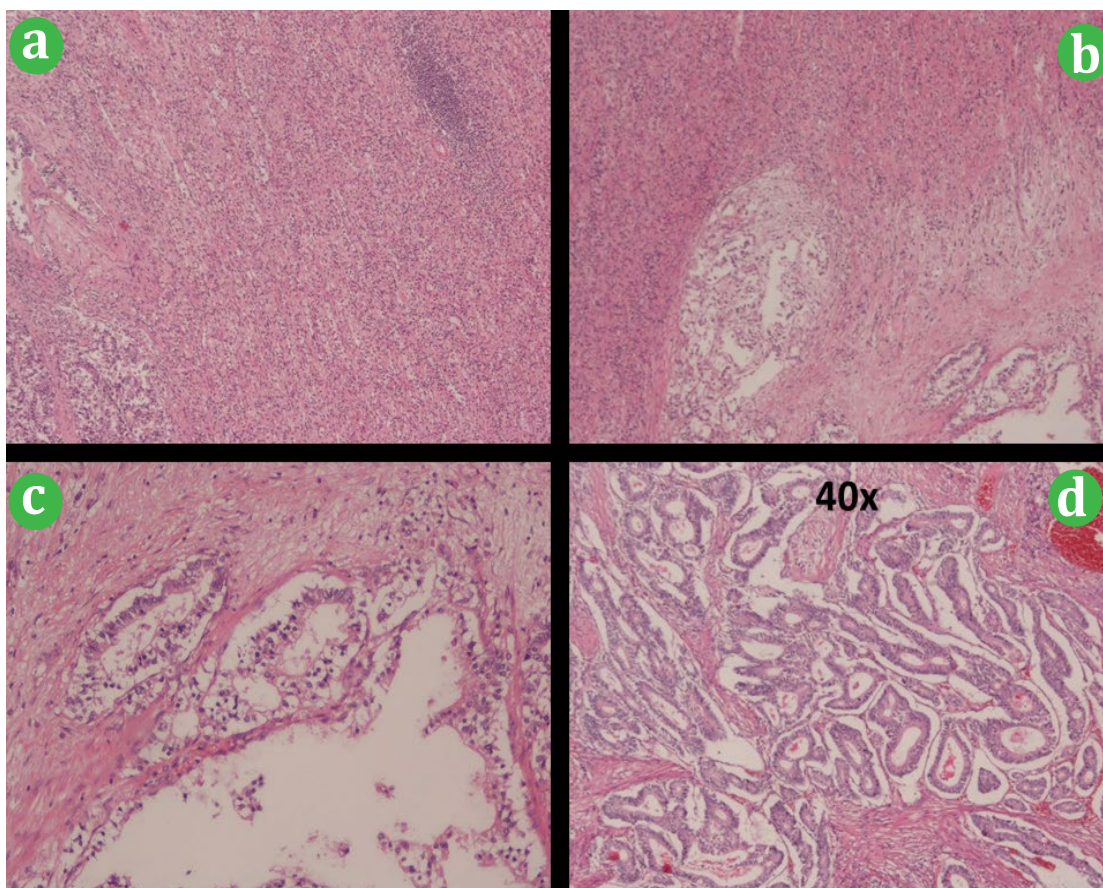


Figure 1. (a). Tumor infiltrating spleen; (b). Tumor buds infiltrating spleen; (c). Columnar mucin cells; (d). Tumor with glandular appearance.

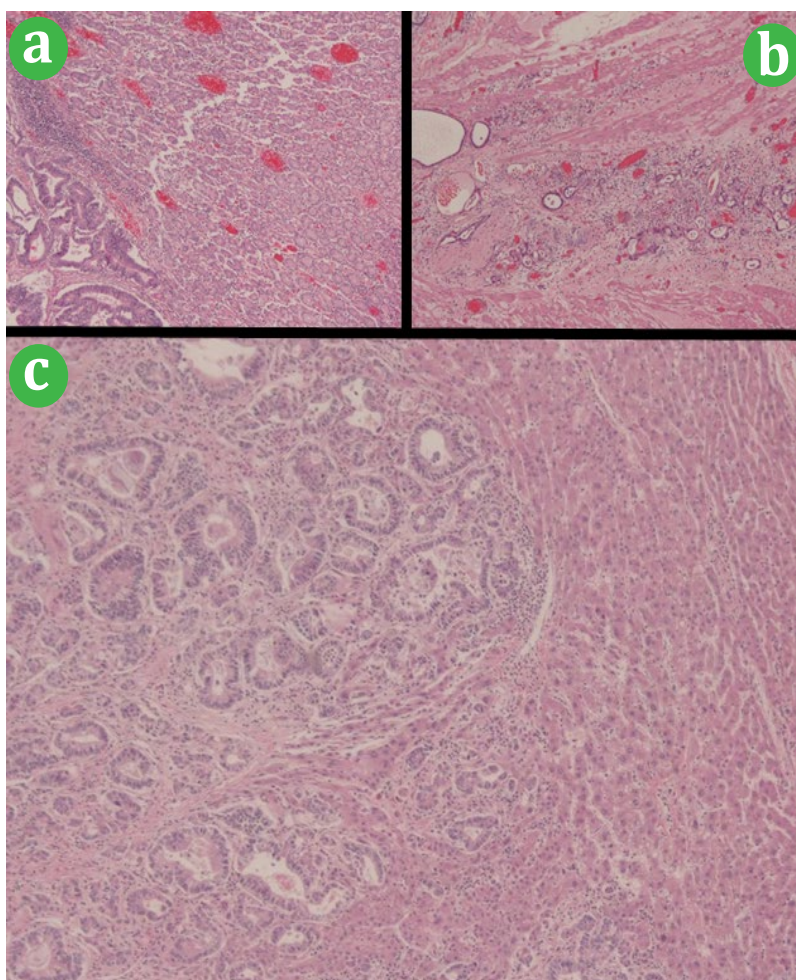


Figure 2. (a). Tumor infiltrating Stomach; (b). Tumor infiltration of lamina propria muscularis mucosae; (c). Hepatic metastasis.

of the pancreas (G2), which apparently infiltrates the gastric wall, coming from the serosa to the mucosal surface of the stomach, which corresponds to the ulcerated area described in the endoscopy. In addition the tumor infiltrates spleen, and liver. Lymphadenectomy of the prepiloric area, minor curvature, major curvature, splenic artery, hepatic artery and diaphragm showed no tumor infiltration.

The anatomopathological study also showed a well-differentiated adenocarcinoma with mucin lakes, intradermal cystic spaces lined by atypical columnar cells with pleomorphic nuclei and atypical mononuclear cell infiltrations which are arranged in a glandular pattern. The patient was treated with 8 cycles of 100% Folfox which had to be discontinued for two weeks due to severe neutropenia. Nivestim was also given and was discontinued during radiotherapy. After 24 months of follow-up, progression of the disease is confirmed with multiple unresectable hepatic metastasis. Treatment with nabpaclitaxel gemcitabine was started with little response (Figure 3).

DISCUSSION

Patients affected by a tumor in the tail of the pancreas usually remain asymptomatic until the tumor size becomes evident as a palpable abdominal mass, or the metastasis appears. Our patient was not a classic case of pancreatic adenocarcinoma. This metastatic mucinous

cystadenocarcinoma was originated in the pancreatic tail and the patient presented abdominal distension and pain as initial symptoms of the disease.

Mucinous cystic neoplasms (MCN) represent about half of the primary cystic neoplasms of the pancreas. MCN affect predominantly women (95%) in the fifth decade of their lifetime (range: 19-82 years) and are located in the tail of the pancreas in the majority of cases.

Although the definitive diagnosis of MCN is obtained by the study of the histological tissue, this is not always possible. In these cases, there are many alternative ways which can help with the diagnosis, such as cytological analysis of the cyst fluid and cyst fluid tumor marker analysis [3].

Cases of pancreatic cancer with gastroduodenal invasion have already been described. During the study of 75 autopsies of patients with pancreatic cancer, Cubilla *et al.* found that gastric invasion was observed in 20 (27%) and duodenal invasion was observed in 30 (40%) of these patients [4].

Ohtsubo *et al.* described gastroduodenal invasion in 11 (21%) of 53 patients at diagnosis, and 20 (27%) of 75 patients during the course of the disease. We assume that these findings of gastroduodenal invasion are a consequence of the progressive develop of the pancreatic

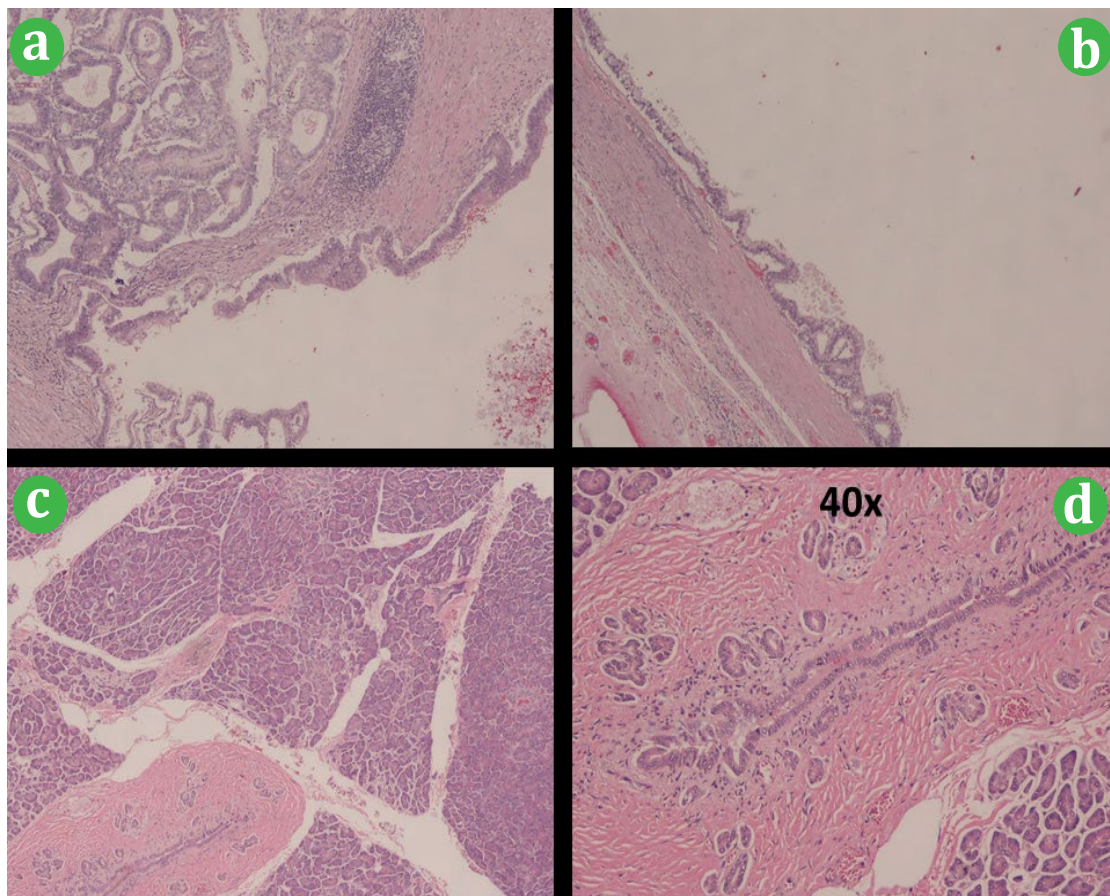


Figure 3. (a). Pancreatic wall capsule and tumor infiltration; (b). Tumor capsule; (c). Pancreatic tissue with Ca *in situ* duct and microleakage; (d). Duct with intraepithelial necrosis / CIS and Adenocarcinoma foci infiltrating the capsule.

cancer. In that study, it is assumed that gastroduodenal involvement was greater in patients with pancreatic cancer located in the head of the pancreas than in those located in the body or tail. This is due to the proximity of the pancreas to the duodenum and to the fact that the wall of the duodenum is thinner than the gastric wall [5]. The mucinous tumor of the pancreas usually displaces adjacent structures, but, in our case, it infiltrates the entire thickness of the gastric wall (**Figure 4**).

When a middle-aged woman shows a solitary cystic nodule in the pancreas without ductal communication, it is highly suggestive of being an MCN and does not need further diagnostic tests before treatment. If clinical and imaging features are indeterminate, however, EUS can be performed to better characterize the relationship of the lesion to the pancreatic duct. EUS-guided FNA of cyst fluid also allows for molecular analysis (e.g., cyst fluid CEA level, which, if greater than 200 ng/mL, it is indicative that the tumor has a mucinous nature more than serious; and DNA sequencing, which, in the setting of a KRAS mutation without GNAS mutation, favors a diagnosis of MCN over other cystic neoplasms). Currently, and following the Fukuoka consensus of 2012, all clinical guidelines recommend surgical resection for all MCN (**Figure 5**). This is because it is estimated that there is a 17 to 18% chance of malignization (high-grade dysplasia or invasive

cystadenocarcinoma), or future progression even in benign disease [6].

Five-year overall survival in 1 series was estimated to be 89% versus 17% for patients with noninvasive versus invasive disease, and 5 of the 6 invasive patients recurred and died within 5 years of surgery [7]. Wang *et al.* showed that non-resected intraductal papillary mucinous neoplasms patients had a median survival of 13 (6–36.5) months [8]. Le Borgne *et al.* conducted a study in which patients with irresectable MCAC have been reported to have a 2-year survival of 12%. There are not many studies in current literature that show the results of administering radiochemotherapy to these patients. Most of them are case reports about adjuvant or neoadjuvant treatment [9].

A Cochrane review from 2006 concluded that chemotherapy appeared to prolong life and improve quality of life in patients with advanced pancreatic cancer. Survival of the patients included in this study and treated with chemotherapy obtained an average of 10.5 months [10].

Our case is particular because of the age of the patient as well as his sex and the surgical treatment performed which appeared to prolong patient’s life based on our literature review.

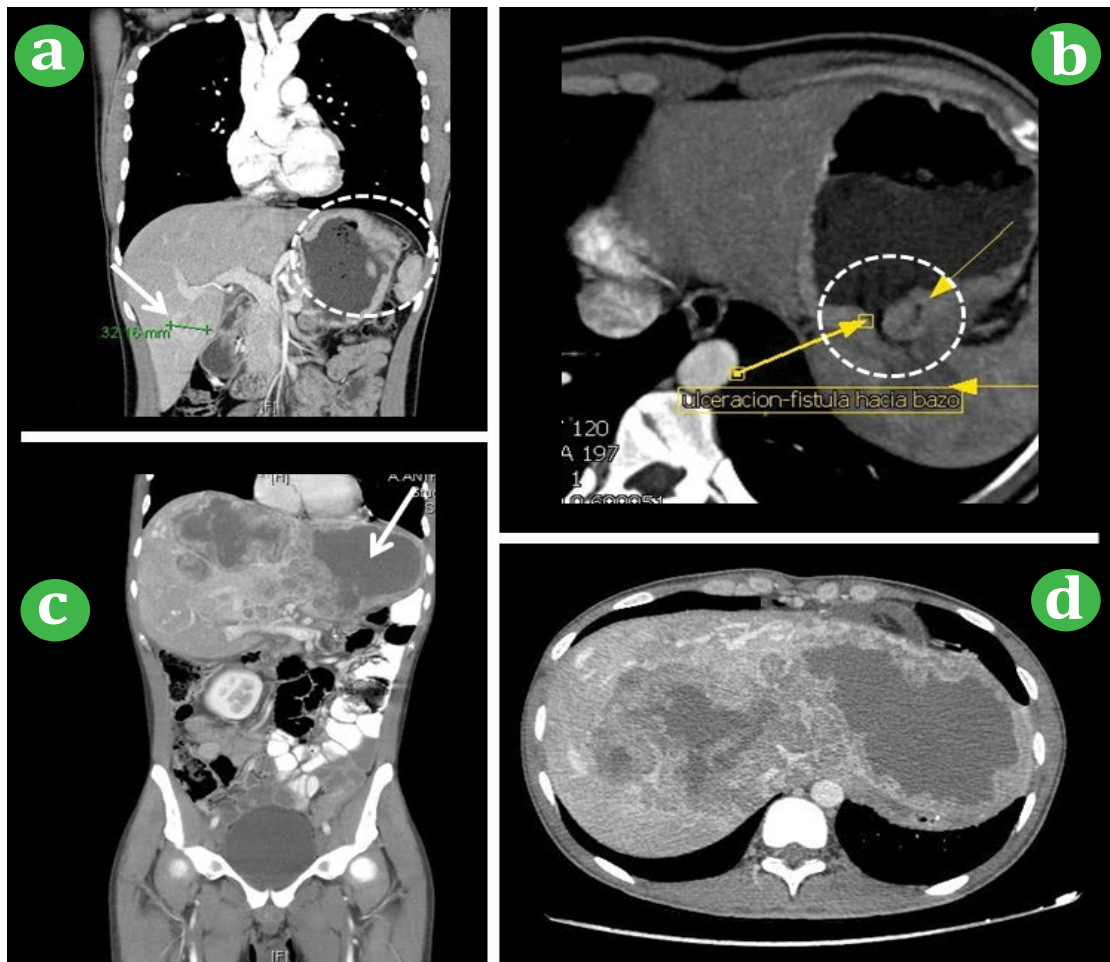


Figure 4. (a). Hepatic and gastric metastasis; (b). Splenic tumor infiltration; (C & D). Hepatic metastasis.

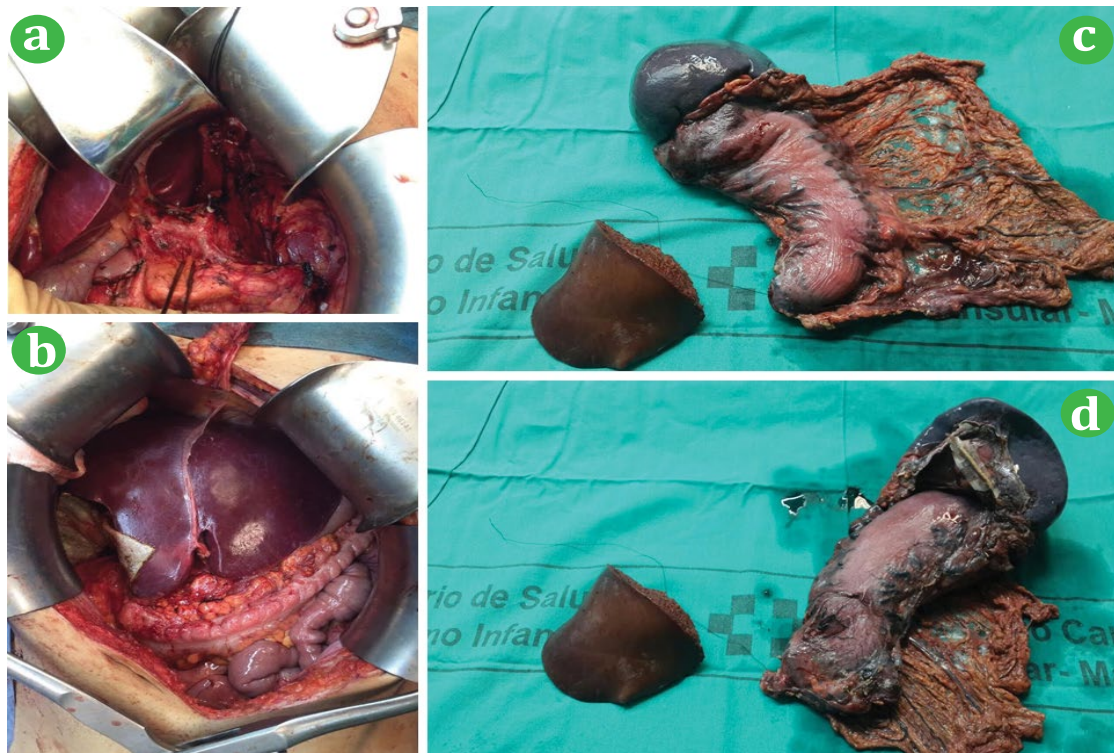


Figure 5. (a & b). Surgical site; (c). Front face piece; (d). Rear face piece.

CONCLUSION

MCAC has a better prognosis after surgical resection when it is located only in the pancreas and there are no distant metastasis. The prognosis in patients who are not candidates for surgery or in those in whom metastasis already exists at the time of diagnosis is bleak. However palliative resection may improve survival and quality of life in those cases.

Conflict of Interest

The authors declare that they have no conflict of interest.

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