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Intraductal Papillary Mucinous Neoplasm Recurrence 10 Years after Duodenopancreatectomy. Laparoscopic Resection (with video)

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ABSTRACT

Pancreatic adenocarcinoma has a poor prognosis, even after R0 resections. Metachronous disease usually arises as distant or regional metastasis, but local recurrence is infrequent. 66 year-old male patient with a subclinical pancreatic remnant lesion suspected to be malignant 10 years after duodenopancreatectomy for invasive mucinous cystoadenocarcinoma. After distant metastatic disease was ruled-out, laparoscopic distal pancreatectomy was performed. Pathology revealed a non-invasive intraductal papillary mucinous neoplasm (IPMN). The decision to resect metachronous disease after pancreatic cancer surgery remains under debate, based on the type of recurrence. Pancreatic remnant lesions can be true recurrences or new primary tumors. In this case, pathology suggests a slow growth recurrence or a second primary tumor. Patients with local recurrence alone and prolonged disease-free survival like this might benefit from surgical resection. This case highlights the importance of long-term follow-up of malignant pancreatic cystic tumors, as surgical treatment of local recurrences could be potentially curative. In the present case this was achieved successfully through a technically challenging minimally invasive approach.
Key words: pancreatic cancer, pancreatic remnant, local recurrence

INTRODUCTION

Pancreatic adenocarcinoma remains a poor-prognosis disease since only 20% of the patients are suitable surgical candidates, and 5-year overall survival ranges from 15-40% for those successfully resected (1). In addition, despite surgery and adjuvant treatments, most of them will develop some form of relapse, such as local, regional or systemic. However, mucinous cystic adenocarcinomas may show better prognosis when curative resection if performed, with 5-year overall-survival up to 63% (2).

Local recurrence, defined as located in the pancreatic remnant or the mesenteric root (3) is relatively uncommon, accounting for 24% of the patients (4), but once diagnosed it becomes a therapeutic challenge, since there is scarce evidence regarding the benefits of an aggressive approach, except for a select group of patients.

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CASE REPORT

66 year-old male diagnosed with invasive pancreatic cancer that underwent a Whipple-Child procedure 10 years before. Pathology revealed a well-differentiated mucinous cystic adenocarcinoma with node-negative lymphadenectomy (*figure 1*). Systemic adjuvant chemotherapy was conducted after surgery.

Due to tumor markers rise during follow-up surveillance (CEA: 28 ng/ml; CA 19-9 35 U/ml), Computed Tomography (CT) and Magnetic Resonance (MR) were performed, with no evidence of abdominal mass (*figure 2*). Finally, 18-FDG PET-Scan revealed a 12,5 mm lesion (SUV= 5,5) located at the pancreatic remnant close to the pancreatojejunostomy (*figure 3*), with no signs of extra-pancreatic disease. In this scenario the patient was set for surgical exploration through a laparoscopic approach.

As no evidence of metastatic disease was found, laparoscopic distal pancreatectomy and splenectomy were performed (video) after careful dissection of the pancreatojejunostomy and remnant pancreas from the posterior aspect of the remaining stomach and gastroenterostomy. A 3,5 mm (blue) charge endostapler was used for small bowel transection and the specimen was retrieved in a bag through a mini-laparotomy.

Patient was discharged on postoperative day 5. Pathology report informed a non-invasive intraductal papillary mucionous neoplasm (IPMN) with moderate dysplasia close to the pancreatojejunostomy, and 3 lymph-nodes negative for malignancy (*figures 4* and *5*).

DISCUSSION

Local recurrence after pancreatic cancer resection is relatively rare and distinction between true relapse from a second primary tumor may be challenging after an exhaustive diagnostic work-up or even surgical resection.

A recently published study combining histopatho-

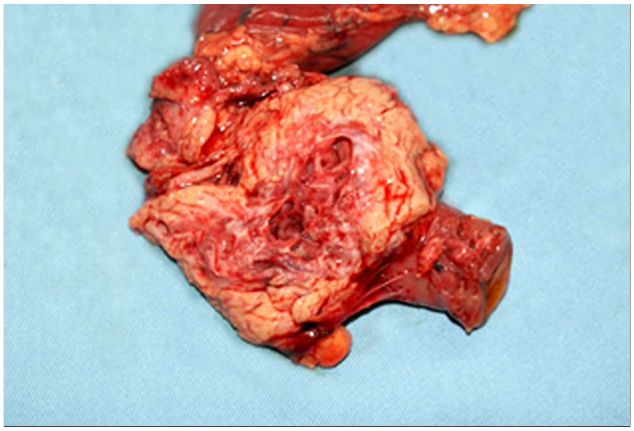

Figure 1 - Primary tumor (mucinous cystoadenocarcinoma) previously resected after duodenopancreatectomy

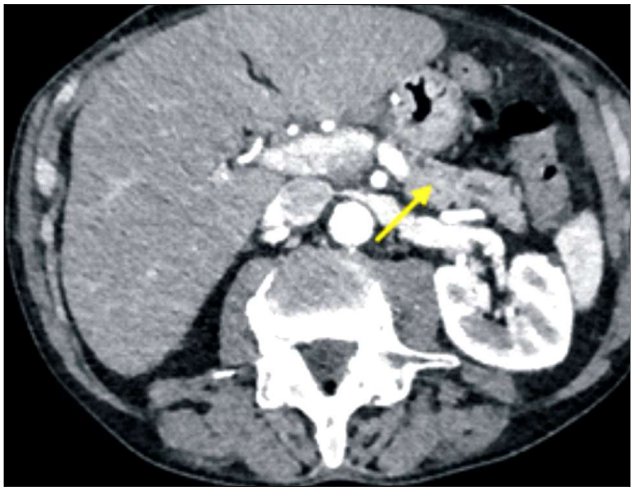

Figure 2 - Computed Tomography (CT) showing pancreatic remnant without pathological findings (arrow)

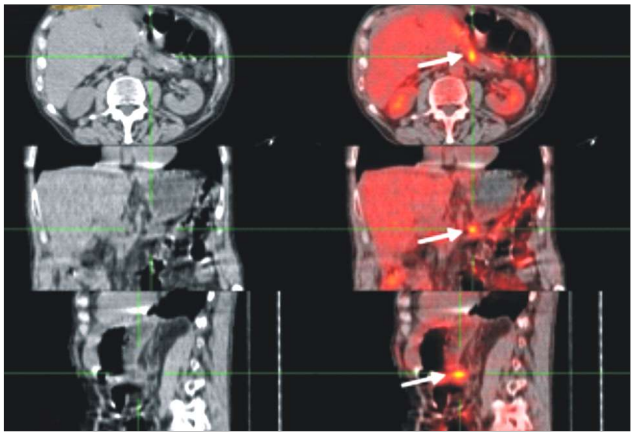

Figure 3 - PET-Scan detecting high metabolic activity in small pancreatic lesion (arrow)

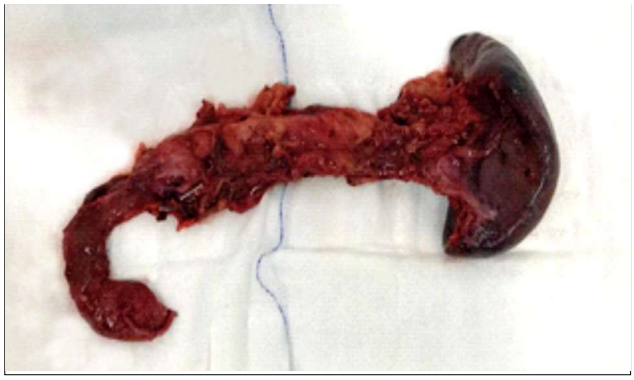

Figure 4 - Distal pancreatectomy and splenectomy specimen (including previous pancreatojejunostomy)

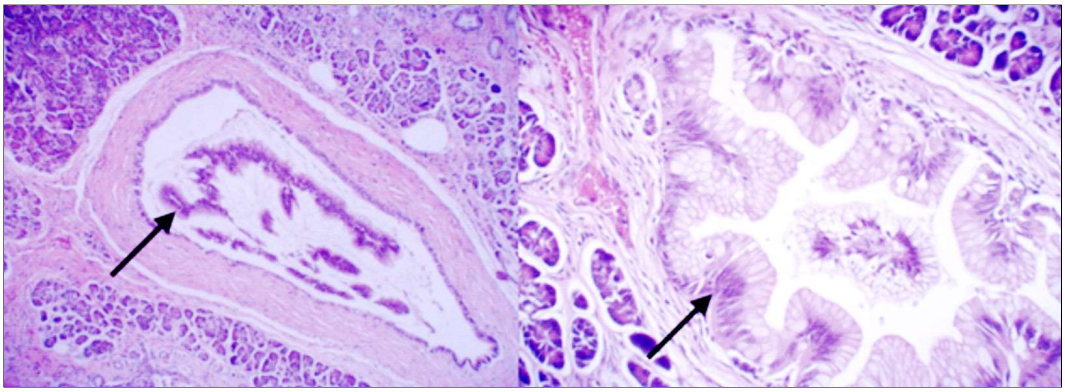

Figure 5 - Microscopy. Non-invasive intraductal papillary mucinous neoplasm (arrows)

logical and molecular/genetic features of both primary and recurrent tumors suggest that there are three possible pathways that lead to neoplastic re-growth in the remnant pancreas (5). True recurrence occurs after R1 resection with positive margins, although another possibility can be the pre-existence of intra-parenchymal metastasis. This is what Imai et al (6) describe as the "early dissemination" of pancreatic intraductal neoplasms (PanINs), that could explain metachronous histologically and genetically related cancer in the pancreatic remnant, sometimes after a long disease-free survival period, in previously R0 resected tumors, just as in the case that we describe. As for recurrent IPMN, Pea et al (7) also state that these can be the result of intraductal spread of the primary lesion, or either be independent of it. Finally, a second primary tumor may be suspected if no histologic or genetic association is found.

The most appropriate treatment option for recurrent pancreatic cancer depends on histology. Particularly, metastatic neuroendocrine tumors or renal cell carcinoma may be cured after resection (8), but on the other hand pancreatic adenocarcinoma relapse is often associated with aggressive growth and wide-spread disease, precluding curative resection. This might explain why palliative radiotherapy and chemo-therapy have been the treatment of choice for these patients (9).

Nevertheless, a recent systematic review of several studies suggest that an aggressive surgical approach might benefit a group of selected patients with recurrent pancreatic cancer in terms of overall and disease-free survival (10).

Time of diagnosis of the recurrence plays a key role, as better prognosis has been described when asympto-matic pancreatic disease is detected (11). This high-lights the importance of close and long-term follow up in our case, which allowed for prompt identification of a subclinical, non-invasive IPMN.

Other factors associated with overall survival in resected recurrent pancreatic carcinoma on univariate analysis are: pattern of recurrence (local), nodal status and duration of the disease-free interval after the first surgery, specially when it's > 20 months (12).

Finally, the role of radio and chemotherapy - alone or combined with surgery - in the treatment of recurrent pancreatic carcinoma is still not well defined, and despite promising results shown in some studies (13,14), further investigation is needed to provide stronger evidence.

CONCLUSIONS

Despite its overall poor prognosis, curative resection of recurrent pancreatic cancer should be attempted in selected patients. The case we described meets many of the clinical and pathological features related to better long-term oncological outcomes such as local relapse, subclinical diagnosis, prolonged disease-free survival after R0 initial surgery and non-invasive status of the recurrent IPNM.

In addition, a laparoscopic distal pancreatectomy was successfully achieved. Significant anatomic changes and adhesions from the previous Whipple-Child procedure turned this second surgery into a tech-nical challenge, highlighting the importance of an expe-rienced team in the re-exploration of these patients.

Conflict of interest

All author declare that they have no conflict of interest.

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