

CLINICAL VIGNETTE

Surgery in Oligometastatic Pancreatic Cancer

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A 73-year-old male was referred to medical oncology with a new diagnosis of pancreatic cancer. The patient originally was seen by his primary care physician for a lingering cough and 20-pound weight loss over the last year. A chest Xray noted a possible lung nodule, which was followed by computed tomography (CT) of the Chest. The imaging did not reveal any suspicious lung nodules but noted an incidental lesion in the distal pancreas. Magnetic resonance imaging of the abdomen and pelvis delineated a 2.4 centimeter distal pancreatic body/proximal tail mass with pancreatic tail atrophy. There was inflammatory fat stranding and fluid concerning for malignancy. He was deemed appropriate for resection and taken to the operating room. A non-specific liver lesion was noted as well as two nodules in the pelvic peritoneum. Biopsies were taken from the liver and one of the peritoneal lesions. While frozen sections were pending review, the primary tumor site was evaluated, and suggested tumor involving the distal duodenum and proximal jejunum. Pathology indicated that the liver lesion was benign, but the pelvic peritoneal lesion biopsy confirmed moderately differentiated adenocarcinoma and further resection was aborted. Systemic therapy was recommended and he started modified FOLFIRINOX every 2 weeks. CA 19/9 was elevated at baseline but normalized in the first 3 months of therapy. Follow up CT scans noted improvements in the primary pancreatic mass and no new evidence of disease. The pelvic lesions were never visible on imaging. He continued therapy for a year with minimal toxicity beyond mild neuropathy. He remained active with family and continued construction projects throughout chemotherapy. Despite his known advanced disease, he was referred back to surgery for reconsideration of possible resection.

The majority of pancreatic cancer cases are ductal adenocarcinomas.¹ Prognoses have remained poor despite ever-growing treatment options.¹ The largest challenge has been that over half of cases are discovered in the later stages, with only a small subset qualifying for resection.¹ Resection is the only curative treatment to date.¹ Initial surgery is not currently the standard of care for most patients with locally advanced disease and certainly not an option for those with metastatic disease.^{1,2} With improvements in outcomes due to multiagent chemotherapy regimens, some groups are starting to re-evaluate the role of surgery in carefully selected, advanced patients.^{1,2} Multiple small studies have indicated improved surgical resection rates with the use of neoadjuvant treatments in locally advanced patients.^{1,2} However, the degree of improved conversions to surgery have varied due to many variables not limited to

differences in neoadjuvant therapies, criterion for resection, and patient selection.¹

Studies have examined the role of resection in oligometastatic disease.¹ The most common sites of metastasis are the liver, lung, lymph nodes, peritoneum, and bones.¹ There is no specific classification that uniformly defines oligometastatic disease.¹ In general, the term refers to minimal metastatic disease, but is a non-specific term across solid tumors, and there is no accepted definition in pancreatic cancer.^{1,2} German guidelines in 2021 set a definition of less than three synchronous metastases.¹ Given benefits of multimodality therapy in other solid tumors, consideration of expanding surgical options are considered in advanced pancreatic cancer as well.¹ Several studies noted survival benefits in synchronous primary tumor and hepatic metastatic resections, but the studies are limited by selection biases and small sample sizes.¹ There is even more limited data with regards to metastases outside the liver.¹ Recent limited studies of patients with peritoneal disease have indicated better survival outcomes with conversion to surgery in select patients.² Sites of metastases have also affected overall prognosis.² CA19/9 tumor marker values may help identify appropriate surgical candidates.^{1,2} Given the promising data, clinical trials are pending to better define the role of surgery in advanced pancreatic adenocarcinoma after neoadjuvant therapy. These trials will hopefully help guide patient selection and provide new treatment options.²

Our patient had oligometastatic disease based on conventional definitions with only two peritoneal lesions. The primary tumor was considered borderline resectable with no vascular involvement. The noted peritoneal lesions were seen only during laparotomy, and he was classified as Stage IV disease. This historically has ruled out any role for surgery. However, given the limited data available, this patient met most of the criteria to suggest survival benefit from surgery. These included good response to multiagent chemotherapy, good performance status, quick normalization of his tumor marker, and longterm stability of the clinical factors with no progression for a year on therapy. For this reason, he was reconsidered for surgical resection as there is a potential survival benefit with this new approach.

REFERENCES

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