CLINICAL VIGNETTE

Hepatoid Adenocarcinoma of the Pancreas

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Case Report

A 56-year-old man with well controlled diabetes underwent a "screening" whole body scan in China which noted a large pancreatic neck mass. Subsequent PET scan a 5.2x3.3cm mass, with high SUV of 28.8. There were multiple surrounding lymph nodes with FDG uptake. No abnormal lesions were seen in liver. His laboratories included an elevated APF over 12,000 ng/ml, and normal Ca19.9 level. He reports good energy and appetite. He denies any weight loss, abdominal pain, back pain. Hepatitis screening was negative. His abdominal MRI showed the enhancing mass abutting the pancreatic neck measuring 48 x 42 x 37 mm with multiple additional enlarged upper abdominal lymph nodes. CT guided core needle biopsy of the pancreatic mass and pathology confirmed poorly differentiated malignancy with hepatoid differentiation. The differential diagnosis includes hepatoid carcinoma (favored) versus metastatic or extragonadal hepatoid yolk sac tumor. His testicular US was normal.

His case was reviewed at several other institutions and given his elevated AFP, the diagnosis was confirmed as unresectable hepatoid like carcinoma of the pancreas. He was started on hepatocellular carcinoma (HCC) directed treatment with bevacizumab and atezolizumab on 2/26/24. His insurance did not approve the regimen and both drugs were sponsored through the Genentech Patient Support Program. His AFP decreased to 1,100 ng/ml after 2 cycles of treatment and has remained in the normal range for many months. He has completed 12 cycles of treatment which has been well-tolerated, with excellent performance status. Interval imaging showed decrease in the primary pancreatic mass from 5cm to 3cm range, as well as decreased size of the abdominal lymph-adenopathy. The plan is to continue the current regimen as long as he has no treatment related toxicities. We suspect this is still an incurable disease despite remaining asymptomatic.

Discussion

Hepatoid adenocarcinoma (HAC) is a very rare malignancy that can mimic HCC based on its hepatoid histological appearance and production of AFP.[1] HAC can affect different organs and was first described in 1985 involving the stomach.[2] HAC may involve any part of the gastrointestinal tract, lungs and genito-urinary tract. HAC of the pancreas is extremely rare, with about 38 cases reported in the literature.[3] It appears to be more prevalent in males, with a median age diagnosis, 57 years.[3] It is most commonly asymptomatic. However, some patients present with abdominal or back pain as seen with pancreatic cancer. HAC of the pancreas can be pure HCC in about 60% of patients[3] as seen in this patient with elevated AFP. Given its rarity, there is no standardized treatment for HAC of pancreas. Our patient received standard treatment for metastatic HCC based on elevated AFP. HAC of the GI tract are generally associated with an unfavorable prognosis[4] especially if there is liver involvement. Survival outcomes depends on the disease burden as well as the extend of surgical resection. Greater survival is reported in patients who are resected with adjuvant systemic treatment. The longest disease-free-survival has reached 107 months.[5] Our patient has pancreatic involvement as well as regional nodal disease. Despite lack of liver disease, he is still not deemed to be a surgical candidate. His overall prognosis remains unclear, despite his initial great response to HCC based treatment.

The possibility of an HAC of the pancreas should be considered in the differential diagnosis of unusual presentations of pancreatic masses. The pathogenesis of HAC remains to be elucidated. One wonders if the shared embryologic origin of the pancreas and liver, the forgut endoderm, may explain the evolution of the disease. It is hypothesized that the activation of liver specific genes during the carcinogenesis process leads to the HCC, like differentiation of the primary malignant pancreatic cells. Ectopic liver tissue therapy uses HAC cells, which may be derived from ectopic pancreatic liver tissues.[3] Due to the rarity of this disease, continued studies and long term follow up data are needed to standardize the treatment and improve survival.

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