Case Report

Pancreatic Adenocarcinoma Masquerading as Idiopathic Chronic Pancreatitis with Delayed Diagnosis

Sunil Badami Htay Htay Kyi Sunil Upadhaya Samer Al Hadidi

Hurley Medical Center/Michigan State University, Flint, MI, USA

Keywords

Pancreatic cancer · Endoscopic ultrasound · Tumor marker

Abstract

Pancreatic cancer carries poor prognosis. Establishing the diagnosis early could help in improving outcome. We are presenting a case of pancreatic cancer with delayed diagnosis. Our 60-year-old patient underwent multiple endoscopic ultrasound-guided biopsies with no evidence of malignancy. He had normal molecular tumor biomarkers. The patient needed 8 months to receive the diagnosis and initiate the treatment. There are no specific guidelines regarding choice of tissue sampling modalities in such cases.

© 2017 The Author(s)
Published by S. Karger AG, Basel

Background

The most common pancreatic malignancy is ductal adenocarcinoma [1]. It most commonly affects patients older than 70 years. The prognosis for pancreatic cancer is extremely poor, and the 5-year survival rate is 5% [1, 2]. Surgical resection remains the only curative treatment for early stages of pancreatic cancer [2]. The histological diagnosis of pancreatic cancer becomes a challenge in the setting of pancreatitis [3, 4]. The concern arises from the fact that missing the diagnosis could potentially be a death sentence versus overtreating with surgery leading to unnecessary morbidity. This has created a dilemma among surgeons

and physicians leading to a plethora of psychological stress burden on patients and caretakers of not having a diagnosis and subsequently a prognosis [5].

Case Presentation

A 60-year-old male patient with previous medical history of tobacco abuse, hypertension, gastroesophageal reflux disease, and renal cell carcinoma status post right nephrectomy presented to the hospital with yellowish discoloration of the skin for 1 week prior to presentation. Total bilirubin was 10.1 mg/dL (reference range: 0.3–1.2 mg/dL) with direct bilirubin of 6.5 mg/dL (reference range: 0.1–0.2 mg/dL). Computed tomography (CT) of the abdomen showed pancreatic mass with unclear borders near the ampulla approximately measuring 1.4 cm with dilation of the common bile duct (Fig. 1). The patient underwent endoscopic retrograde cholangiopancreatogram (ERCP) with sphincterotomy, which revealed a 2-cm ulcerated duodenal lesion above the ampulla with distal common bile duct stricture at the level of the ampulla, which prevented cannulation of the common bile duct. A repeat ERCP was done after 5 days with failure to achieve biliary drainage. Cancer antigen 19-9 (CA 19-9) level was within normal levels. Surgical pathology of the duodenal ulcer showed chronic inflammation with no evidence of malignancy.

The patient was transferred to a tertiary center for biliary stenting, and subsequently, endoscopic ultrasound (EUS) revealed a pancreatic head mass with background pancreatic head atrophy and lymph nodes in the peripancreatic region. Biopsy was suggestive of pancreatitis. At this stage, the plan was to repeat CT abdomen and repeat EUS-guided biopsy: both turned out inconclusive. Repeated CA 19-9 and immunoglobulin G-4 levels were normal. The decision was made to repeat CT and CA 19-9 in 3 months. The repeat showed no change. Subsequent ERCP showed inflammatory changes. Biopsy remained negative for malignant cells. The patient underwent work-up for pancreatitis, which remained inconclusive. Eight months after the initial presentation, the patient presented with upper gastrointestinal bleeding and progressive abdominal distention. He was found to have gastric outlet obstruction. He underwent another biopsy of the pancreatic mass, which was negative for malignancy. CA 19-9 remained normal. One month later, biopsy was repeated and showed adenocarcinoma of the pancreas. The patient was started on neoadjuvant chemotherapy with gemcitabine. Unfortunately, the patient's condition declined rapidly with the development of refractory ascites and advanced liver failure. The patient was provided with hospice care afterwards.

Discussion

The challenging part of this case was the diagnostic dilemma for 8 months, which resulted in disease progression and delayed initiation of treatment. Current European Society of Clinical Oncology and National Comprehensive Cancer Network guidelines recommend a confirmed histological diagnosis before initiating concurrent chemoradiotherapy for pancreatic cancer.

Chronic pancreatitis and pancreatic adenocarcinoma belong to two different ends of the spectrum of pancreatic diseases. Avoiding diagnostic error is extremely important given the high mortality rate of pancreatic cancer and the morbidity of surgical intervention [6–8].

Approaches to obtain a tissue sample are highly individualized, although we have an array of diagnostic tools: CT of the abdomen, ERCP, EUS-guided biopsy, intraoperative ultrasound-guided laparoscopic/open biopsy, and CT-guided percutaneous biopsy. The choice of modality depends on the patient. ERCP is therapeutic and diagnostic for biliary obstructive cases. EUS-guided biopsy is most commonly done for pancreatic masses, while a surgical approach is preserved for masses that are not easily accessible [9].

In a pooled cohort meta-analysis, sensitivity and specificity of EUS-guided biopsy were 86.8% (95% CI, 85.5–87.9) and 95.8% (95% CI, 94.6–96.7), respectively. Although EUS FNA has a high diagnostic accuracy, incidence of failure is also significant in terms of diagnostic urgency and further management [10].

Although EUS has become a chosen modality, there are limitations to it, especially when inflammatory changes are present in the background. In a multicenter retrospective study, 20 cases of pancreatic neoplasms were found to be missed by 9 experienced endosonographers. Factors that led to false-negative results included chronic pancreatitis, a diffusely infiltrating carcinoma, a prominent ventral/dorsal split, and a recent (<4 weeks) episode of acute pancreatitis. If a high clinical suspicion of pancreatic cancer persists after a negative EUS, a repeated examination after 2–3 months may be useful for detecting an occult pancreatic neoplasm [11].

A previous report indicated failure of multiple diagnostic tools to detect pancreatic adenocarcinoma including multidetector CT, EUS, and intraoperative ultrasound [12]. Patients with a high clinical suspicion for malignancy but no visualized mass should undergo operative evaluation with definitive tissue sampling [12].

Various tumor markers have been studied in connection with pancreatic cancer. CA 19-9 is currently one of the FDA-approved tools for screening adenocarcinoma of the pancreas. The reported sensitivity and specificity rates of CA 19-9 for pancreatic cancer range from 70 to 92% and 68 to 92%, respectively [13, 14]. However, sensitivity is closely related to tumor size. CA 19-9 levels are of limited sensitivity for small cancers [13, 14].

EUS-guided biopsy should be strongly considered as the first diagnostic tool for sampling solid pancreatic mass. Our patient demonstrated repeatedly negative biopsy by EUS. Furthermore, CA 19-9 was normal throughout the evaluation, though it is elevated in 80% of cases of pancreatic adenocarcinoma, especially cases presenting with common bile duct obstruction [14, 15]. Our patient did not have Lewis null blood type, which does not produce CA 19-9 [15].

Conclusion of the major part of the case, which is tissue diagnosis, remains speculative but most likely, the cause for delay in diagnosis could be due to the obstruction of pancreaticobiliary drainage resulting in recurrent bouts of pancreatitis altering the histological background with slow lag phase of tumor growth dynamics associated with nonspecific symptoms which cannot be easily attributable to tumor or pancreatitis. There are no specific guidelines regarding choice of tissue sampling modalities in such situations. If the suspicion is low even after 2 EUS biopsies, a 3-monthly follow-up with imaging and tumor markers is a feasible option. If there is high suspicion of cancer, then open surgical/laparoscopic biopsy is highly advisable to obtain a tissue sample [9].

Statement of Ethics

The authors have no ethical conflicts to declare.

Disclosure Statement

The authors have no conflicts of interests to disclose.

References

- 1 Ferlay J, Soerjomataram I, Dikshit R, et al: Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer* 2015;136:E359–E386.
- 2 Schoffel N, Krempel M, Bundschuh M, Bendels MH, Bruggmann D, Groneberg DA: Pancreatic cancer – critical examination of the Global Research Architecture and Recent Scientific Developments. *Pancreas* 2016;45:1378–1385.
- 3 Evans JD, Morton DG, Neoptolemos JP: Chronic pancreatitis and pancreatic carcinoma. *Postgrad Med J* 1997;73:543–548.
- 4 Delhaze M, Jonard P, Gigot JF, Descamps C, Dive C: Chronic pancreatitis and pancreatic cancer. An often difficult differential diagnosis (in French). *Acta Gastroenterol Belg* 1989;52:458–466.
- 5 Taylor B: Carcinoma of the head of the pancreas versus chronic pancreatitis: Diagnostic dilemma with significant consequences. *World J Surg* 2003;27:1249–1257.
- 6 Jones BA, Langer B, Taylor BR, Girotti M: Periapillary tumors: which ones should be resected? *Am J Surg* 1985;149:46–52.
- 7 Wharton SM, Rahman Z, Johnson CD: Missed curable carcinoma of the pancreas presenting as chronic pancreatitis. *Postgrad Med J* 1997;73:577–579.
- 8 Warren KW, Choe DS, Plaza J, Relihan M: Results of radical resection for periampullary cancer. *Ann Surg* 1975;181:534–540.
- 9 Taylor B: Carcinoma of the head of the pancreas versus chronic pancreatitis: diagnostic dilemma with significant consequences. *World J Surg* 2003;27:1249–1257.
- 10 Puli SR, Bechtold ML, Buxbaum JL, Eloubeidi MA: How good is endoscopic ultrasound-guided fine-needle aspiration in diagnosing the correct etiology for a solid pancreatic mass? A meta-analysis and systematic review. *Pancreas* 2013;42:20–26.
- 11 Angelis CD, Brizzi RF, Pellicano R: Endoscopic ultrasonography for pancreatic cancer: current and future perspectives. *J Gastrointest Oncol* 2013;4:220–230.
- 12 Chan M, Scaife C, Thaker HM, Adler DG: Adenocarcinoma of the pancreas undetected by multidetector CT, endoscopic ultrasound, or intraoperative ultrasound. *J Pancreas* 2009;10:554–556.
- 13 Steinberg W: The clinical utility of the CA 19-9 tumor-associated antigen. *Am J Gastroenterol* 1990;85:350–355.
- 14 Zhang Y, Yang J, Li H, Wu Y, Zhang H, Chen W: Tumor markers CA19-9, CA242 and CEA in the diagnosis of pancreatic cancer: a meta-analysis. *Int J Clin Exp Med* 2015;8:11683–11691.
- 15 Su S-B, Qin S-Y, Chen W, Luo W, Jiang H-X: Carbohydrate antigen 19-9 for differential diagnosis of pancreatic carcinoma and chronic pancreatitis. *World J Gastroenterol* 2015;21:4323–4333.

Fig. 1. Computed tomography of the abdomen showing a pancreatic mass with unclear borders near the ampulla approximately measuring 1.4 cm with dilation of the common bile duct.