

낭종 중앙 형태를 보인 췌장 결핵

전남대학교 의과대학 내과학교실

조성범

Pancreatic Tuberculosis Presenting with Pancreatic Cystic Tumor: A Case Report and Review of the Literature

Sung Bum Cho, M.D.

Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

Pancreatic tuberculosis is a rare clinical entity, presenting as malignancy mimicking pancreatic mass. Therefore, it represents a diagnostic challenge. To date, ten cases have been reported in Korea. I report an additional case and review all Korean reports about pancreatic tuberculosis. A 57-year-old woman presented with abdominal pain. Abdominal computed tomography (CT) revealed a 2.2×1.2 cm cystic mass in pancreatic body. She was followed for nine months, at which time a cystic mass was enlarged to 3.3×2.2 cm in size on the CT. An exploratory laparotomy was performed for the accurate diagnosis and to rule out the possibility of malignant change. Pathological examination of the resected specimen revealed chronic granulomatous inflammation with caseous necrosis and multinucleated giant cells, which was compatible with tuberculosis. Among the 11 cases of pancreatic tuberculosis, five cases were combined with pulmonary tuberculosis. The pancreatic tuberculosis frequently presented with multicystic pancreatic mass (81%) and the most common anatomic locations were the head (73%), tail (18%), and body (9%). Three cases were diagnosed by using US or EUS guided fine needle aspiration biopsy (FNAB), and all cases were medically cured without exploratory laparotomy. In summary, pancreatic tuberculosis, despite its rarity, should be considered for differential diagnosis of pancreatic cystic mass in endemic countries. Clinical suspicion and accurate diagnostic approach including FNAB of pancreatic tuberculosis are needed to avoid performing unnecessary laparotomy. (**Korean J Gastroenterol 2009;53:324-328**)

Key Words: Pancreas; Tuberculosis

Introduction

Pancreatic tuberculosis (TB) is a rare condition and its clinical and radiological findings resemble those of pancreatic malignancy.¹⁻³ Therefore, the primary diagnosis of pancreatic

tuberculosis is very difficult, and most of previously reported cases were diagnosed after exploratory laparotomy for suspected pancreatic malignancy.^{4,5} Therefore, diagnosing pancreatic tuberculosis is a clinical challenge.

To date, ten cases have been reported in Korea between

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연락처: 조성범, 501-757, 광주시 동구 학1동 8번지
전남대학교 의과대학 내과학교실
Tel: (062) 220-6296, Fax: (062) 225-8578
E-mail: portalvein@naver.com

Correspondence to: Sung Bum Cho, M.D.
Department of Internal Medicine, Chonnam National University Medical School, 8, Hak-dong, Dong-gu, Gwangju 501-757, Korea
Tel: +82-62-220-6296, Fax: +82-62-225-8578
E-mail: portalvein@naver.com

1976 and 2007.⁶⁻¹⁴ Herein, I report an additional case of a 57-year-old woman with pancreatic tuberculosis, and review all Korean reports pertaining to this condition.

Case report

A 57-year-old woman was admitted to hospital with an one-month history of intermittent abdominal pain. She complained of nausea but no vomiting, fevers, or chills. Her past medical history was unremarkable. On admission, her abdomen was soft and not distended, but was tender to deep palpation in the epigastric region. Physical examination was revealed otherwise unremarkable. Laboratory examinations revealed white blood cell count $8,100/\text{mm}^3$ (normal: 6,000-

10,000), hemoglobin 13.1 g/dL (normal: 12-16), platelet count $285,000/\text{mm}^3$ (normal: 130,000-450,000), serum albumin 4.3 g/dL (normal: 3.0-5.0), aspartate aminotransferase 38 U/L (normal: 5-38), alanine aminotransferase 42 U/L (normal: 5-43), alkaline phosphatase 115 U/L (normal: 39-117), γ -glutamyl transpeptidase 45 U/L (normal: 7-49). Total bilirubin was 0.38 mg/dL with 0.06 mg/dL direct fraction (normal: 0.2-1.2/0.05-0.3). Serum amylase and lipase were within normal range. Carcino-embryonic antigen (CEA), carbohydrate antigen (CA) 19-9, and human immunodeficiency virus (HIV) assays were all normal. The chest roentgenogram was completely normal. Abdominal computed tomography (CT) revealed a 2.2×1.2 cm cystic mass in the pancreas body (Fig. 1). She was followed for nine months, at which time she returned to our hospital with a cystic mass, 3.3×2.2 cm in size on the CT (Fig. 2). An exploratory laparotomy was performed due to for the accurate diagnosis the possibility of malignant change of increasing cystic mass. Grossly, an encapsulating exophytic mass was found in the pancreatic body. However, abdominal lymph node swellings were not observed. Therefore, only mass excision was performed. Pathological examination of the specimen revealed chronic granulomatous inflammation with caseous necrosis and multinucleated giant cells (Fig. 3). Polymerase chain reaction (PCR)-based assay for *Mycobacterium tuberculosis* DNA was positive. She was treated by triple anti-tuberculous therapy with isoniazid, rifampin, and ethambutol for one year. She has been well after therapy.



Fig. 1. Abdominal CT finding revealed a 2.2×1.2 cm cystic mass in the pancreas body (arrow).

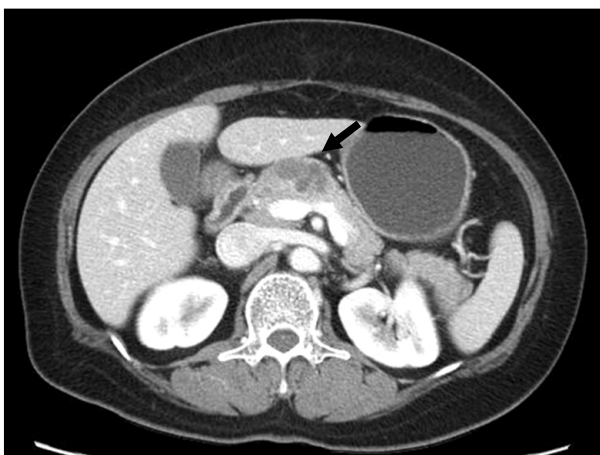


Fig. 2. Follow-up abdominal CT finding 9 months after initial CT. It revealed a 3.3×2.2 cm cystic mass in the same area (arrow).

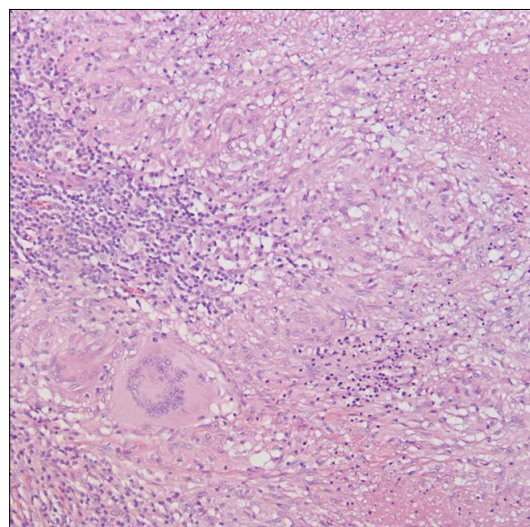


Fig. 3. The microscopic finding of resected specimen revealed chronic granulomatous inflammation with caseous necrosis and multinucleated giant cells (H&E stain, $\times 200$).

Discussion

Tuberculosis remains a common disease in Korea and developing countries. It usually involves pulmonary system. The abdomen is a common site in setting of extrapulmonary tuberculosis.¹⁻³ However, pancreatic tuberculosis is a very rare occurrence due to antibacterial effect of pancreatic enzymes including lipase and deoxyribonucleases,^{4,5,15} and only isolated cases and small series have been reported in English literature.

Eleven cases of pancreatic tuberculosis including the present case have been reported in Korea.⁶⁻¹⁴ Clinical data were summarized as Table 1.

Among this group are 7 men and 4 women (M:F ratio; 1.8:1) with an overall mean age of 47.6 years (range, 28-63 years). The mean age among men was 48.7 years (range, 28-63 years), and mean age among women was 45.5 years (range, 34-57 years). The previous review articles showed that men and women were equally affected, and the mean age was approximately 40 years.⁵ In this study, the patients were predominantly men and older than the previously reported cases.

The most common anatomic locations for pancreatic tuberculosis were the head (72.7%), tail (18.2%), and body (9.1%). The common symptoms were abdominal pain followed by jaundice, weight loss, incidental, and palpable mass.

There are two spread mechanisms for pancreatic tuberculosis.^{15,16} The first is by hematogenous, lymphatic, direct spread, and infectious secretion via the respiratory and gastrointestinal tract. The second is by toxic-allergic reaction of the pancreas in response to generalized tuberculosis. Among the 11 cases of pancreatic tuberculosis, five cases were combined with active or latent pulmonary and colon tuberculosis and the other 6 cases were isolated pancreatic tuberculosis without identified origin of infection.

Radiologic features including ultrasonography (US), CT or endoscopic ultrasound (EUS) usually show multicystic pancreatic masses, most frequently in the head of the pancreas. Pancreatic lesions resulting from mycobacterial tuberculosis infection are often heterogenous and multicystic and can mimic pancreatic cystic neoplasm.^{17,18} The cystic nature of pancreatic lesions probably reflects the presence of the extensive areas of

Table 1. Summary of Reported Cases of Pancreatic Tuberculosis in Korea

Case No.	Author	Age (yrs)/sex	Presenting symptoms	Tuberculosis	Location	Mass nature	LAP	PD	Presumed diagnosis	Confirmational diagnosis	Anti-tuberculous treatment	Duration	Outcome
1	Ko et al ⁶	29/M	Jaundice	Pulmonary	Head	N/A	+	N/A	Pancreatic cancer	Laparotomy with biopsy	INH, PAS, SM	N/A	Well
2	Choi et al ⁷	50/F	Weight loss	—	Tail	Cystic	+	Occlusion	Pancreatic cancer	FNAB	INH, RIP, SM	12 months	Well
3	Park et al ⁸	54/M	Abdominal pain	—	Head	Cystic	+	Dilation	Pancreatic cancer	Laparotomy with biopsy	INH, RIP, EM	N/A	Well
4	Lee et al ⁹	34/F	Incidental	—	Tail	Cystic	—	Normal	Pancreatic cancer	Laparotomy with biopsy	INH, RIP, PZA, EM	N/A	Well
5	Park et al ¹⁰	54/M	Jaundice	Pulmonary	Head	Cystic	+	Dilation	Pancreatic cancer	Laparotomy with biopsy	+	N/A	Well
6	Park et al ¹⁰	51/M	Weight loss	—	Head	Cystic	+	Normal	Pancreatic cancer	FNAB	+	N/A	Well
7	Park et al ¹¹	41/F	Abdominal pain	—	Head	Cystic	+	Normal	Pancreatic cancer	FNAB	INH, RIP, PZA, EM	N/A	Well
8	Yoo et al ¹²	28/M	Jaundice	Pulmonary	Head	Cystic	+	Dilatation	Pancreatic cancer	Laparotomy with biopsy	+	N/A	Well
9	Lee et al ¹³	62/M	Palpable mass	Pulmonary	Head	Cystic	+	Dilation	Pancreatic cancer	Laparotomy with biopsy	INH, RIP, PZA, EM	N/A	Well
10	Hwang et al ¹⁴	63/M	Abdominal pain	Pulmonary, Colon	Head	N/A	+	Dilation	Pancreatic cancer	Laparotomy with biopsy	+	N/A	Well
11	Present case	57/F	Incidental	—	Body	Cystic	—	Normal	Pancreatic cancer	Laparotomy with biopsy	INH, RIP, EM	12 months	Well

LAP, lymphadenopathy; PD, pancreatic duct; N/A, not available; INH, isoniazide; RIP, rifampin; PZA, pyrazinamide; SM, streptomycin; EM, ethambutol; PAS, para-aminosalicylic acid.

necrosis by mycobacterial tuberculosis infection.

In pancreatic tuberculosis, pancreatogram can have various findings, including normal, dilatation, displacement, or occlusion of pancreatic ducts.¹⁹⁻²¹ In this study, the main finding of pancreatogram was duct dilatation, followed by normal duct and occlusion.

Abdominal lymphadenopathies including peripancreatic and mesenteric lymph node are ancillary findings in both pancreatic tuberculosis and malignancy.^{22,23} In this study, 9 cases showed abdominal lymphadenopathies.

All cases showed clinical and radiological findings resembling those of pancreatic malignancy. Therefore, it is difficult to diagnose pancreatic tuberculosis using clinical symptoms and radiological imaging modality, and thus pathologic and bacteriologic confirmation is essential. In this study, most cases were diagnosed after laparotomy for suspected pancreatic malignancy. Three cases were diagnosed before treatment using US or EUS guided fine needle aspiration biopsy (FNAB) and all cases were medically cured without exploratory laparotomy.^{7,10,11} In recent reports, FNAB has been used instead of exploratory laparotomy for diagnosis and follow up.²⁴⁻²⁶ These reports indicate that FNAB guided by CT/US or EUS can be a helpful diagnostic tool for satisfactory diagnosis of this condition. Furthermore, since pancreatic tuberculosis is medically curable, an increased awareness of this condition and early, accurate diagnostic approaches including FNAB are needed to prevent unnecessary laparotomy. EUS-guided FNAB could not be performed in this case because of our hospital did not have endoscopic device for FNAB.

All cases were treated with triple or quadruple anti-tuberculous therapy. The outcome of all cases have been uneventful. The appropriate duration of therapy for pancreatic tuberculosis has not been defined due to insufficient available data.

In summary, pancreatic tuberculosis should be considered in the differential diagnosis of pancreatic mass, particularly in endemic countries including Korea. FNAB is likely to be helpful in prompt, correct diagnosis of pancreatic tuberculosis. Together, a high index of suspicion and accurate diagnostic approach of pancreatic tuberculosis are needed to avoid performing unnecessary laparotomy.

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