Peripancreatic Tuberculosis Lymphadenopathy: The Role of Endoscopic Ultrasound for Diagnosis

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ABSTRACT

Pancreatic and peripancreatic tuberculosis is a rare abdominal tuberculosis. Diagnosis for pancreatic tuberculosis can be challenging. Conventional imaging tools may show mass or malignancy in the pancreas. Endoscopic ultrasound (EUS) is an excellent tools for evaluating pancreas and peri pancreas region. It also allows us to obtain tissue sample for cytology and histopathology. Here we present a case of peripancreatic tuberculosis lymphadenopathy that mimic pancreatic mass. His symptoms were also nonspecific (weight loss, epigastric pain, and irregular fever). From EUS evaluation we found that there was no mass but multiple lymphadenopathy around the pancreas and then performed FNA. The result of the cytology was granuloma inflammation and caseous necrosis which is compatible with tuberculosis infection. From this case illustration we conclude that EUS is an important diagnostic tool for pancreatic lesion to avoid unnecessary surgery.

Keywords**:** *Pancreas; tuberculosis; lymphadenopathy; endoscopic ultrasound*

INTRODUCTION

Tuberculosis is still endemic in Indonesia but abdominal tuberculosis especially pancreatic and peripancreatic tuberculosis is a very rare disease.[1] Pancreatic and peripancreatic tuberculosis is difficult to diagnose. It can mimic mass or other malignancy in the pancreas. Patient usually come to doctor with symptoms of gastrointestinal malignancy (e.g. weight loss, loss of appetite and chronic abdominal pain) and the imaging are often non-conclusive. Patient usually diagnosed with pancreatic tuberculosis after surgical resection. Endoscopic ultrasound (EUS) is non-invasive tool that allow us to evaluate more detail in the pancreas and surrounding tissue. We can also obtain tissue sample for cytology or histopathology diagnosis using EUS.

CASE ILLUSTRATION

Male, 54 years old referred to our hospital with pancreatic head mass. Patient complains persistent epigastric pain for 3 months before admission. Patient also have nausea, sometime vomiting and 10 kg of weight loss in 3 months. Since 1-month patient also have irregular fever. Patient was admitted to other hospital and was performed EGD and MRCP. The result of EGD was gastritis. The MRCP from other hospital result was pancreatic head mass without dilatation of bile duct and pancreatic duct.

On physical examination we found the patient was alert. Patient appearance was cachectic. Hemodynamic was stable. Temperature was 37°C. There were rales at the base of the lungs. Heart sounds were normal. Abdominal

examination we found no abdominal tenderness, no mass, normal liver and spleen.

From laboratory examination we found microcytic hypochromic anemia (Hb: 9.36). Tumor markers were not elevated (CEA:0.72, Ca-19-9:12.9, AFP:0.5).

We perform abdominal CT in our hospital. The result was multiple lesion in the pancreas with multiple lymphadenopathy at the aorta at the level of renal artery, celiac trunk, common hepatic artery and splenic artery suspected malignancy.

Endoscopic ultrasound (EUS) with linear endoscope was performed after we obtain abdominal CT. From EUS we found no mass at the head or the body of pancreas, no dilatation of CBD and PD. There was multiple lymph node enlargement from the hillus of spleen, tail and body of pancreas. We performed fine needle aspiration with 22-gauge FNA needle.

The result of the cytopathology from the lymph nodes was chronic granulomatous inflammation with caseating necrosis suggestive for tuberculosis infection.

We treat the patient with anti-tuberculosis drugs for 9 months. After 1 month of anti-tuberculosis therapy, patient was feeling well. He has weight gain 2 kg after 1 month and increasing appetite.

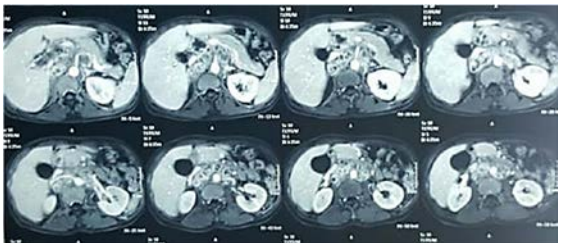

Figure 1. MRCP image showed pancreatic head mass (4x5x6 cm) suspected malignant lesion

Figure 2. Multiple lymph node enlargement peri pancreas was seen and no mass was found from EUS (linear echoendoscope). Fine needle aspiration was performed.

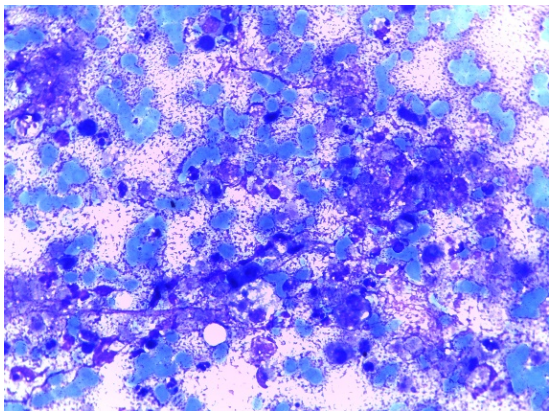

Figure 3. Caseating necrosis was found on cytopathology (Giemsa staining 400x)

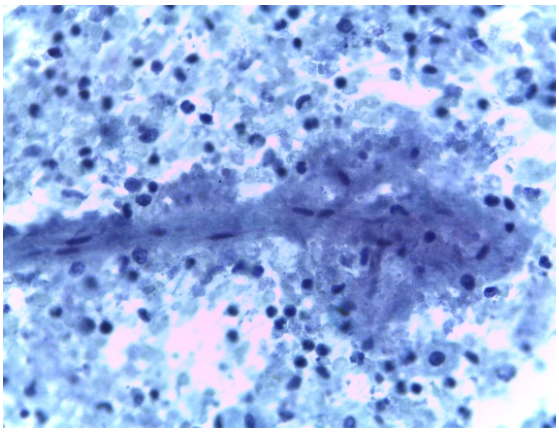

Figure 4. Granuloma inflammation (PAP smear 400x)

DISCUSSION

All abdominal organ can be infected by *M. tuberculosis*. Most gastrointestinal tuberculosis involves the ileocecal and intestinal segment. Pancreas is one of the rare organ that can be infected by tuberculosis. Study by Bhansali from 300 confirmed surgical cases of abdominal tuberculosis found no pancreatic tuberculosis.[1] Most reports for pancreatic and peri-pancreatic tuberculosis are case reports and case series.[2-4] The transmission route of *M.tuberculosis* to pancreas is not fully understood. Hematogenous, lymphatic dissemination or direct spread from another location is the possible mechanism.

There are no specific clinical symptoms for pancreatic or peri pancreatic tuberculosis. Study from Rao et al described that the most common symptom from 14 patients with pancreatic tuberculosis was abdominal pain localized to the epigastrium, fever and weight loss.[3] Data

from Song et al also found abdominal pain/ discomfort and weight loss are the most common symptoms.[5] This patient came to hospital with chronic epigastric pain, weight loss and with sub febrile temperature which also can be found on malignancy.

Imaging evaluation for this patient which is MRCP and abdominal CT showed a possible mass or malignancy in the pancreas. From previous studies showed that 50-75% patient with pancreatic tuberculosis have imaging result of pancreatic mass or malignancy.[2-4] A differential diagnosis off malignant lymphoma lymphadenopathies must also be considered from imaging.

EUS is an excellent tool for evaluating the pancreas and surrounding tissue. EUS is more effective for differentiating malignant or non-malignant lesions in pancreas compared to CT or ultrasound.[6] Recent meta-analysis from Best et al from 54 studies involving 31.196 subjects found EUS-FNA has sensitivity of 0.73(95% CI 0.01 -1.00) and specificity of 0.94(95% CI 0.15-1.00) for differentiating cancerous or precancerous versus benign lesions.[7] Study from Song et al showed that EUS-FNA can accurately diagnose pancreas or peri-pancreatic tuberculosis in 76.2% patient and consequently avoid unnecessary surgery.[5] Using linear echoendoscope with needle also allows us to obtain tissue (fine needle aspiration (FNA) or fine needle biopsy (FNB)). We performed linear EUS for this patient and it became more apparent that what the other imaging see as a mass was actually multiple lymphadenopathy around pancreas that can mimic pancreatic mass.

Diagnosis of pancreatic or peripancreatic tuberculosis can be achieved using FNA or FNB. Tuberculous granuloma in the histology result is the most important finding for diagnosis especially in endemic area. Aljafri et al reported that the specificity of histology diagnosis for tuberculosis in non-endemic area is 88-100%.[8] If the result of cytopathology or histopathology is not specific, *Ziehl-Neelson* staining, culture of *M tuberculosis,* or PCR obtain from FNA can also help for diagnosis. From this case we found granulomatous inflammation with caseating necrosis which highly specific for tuberculosis especially in endemic region.[9]

CONCLUSION

From this case report we conclude that abdominal tuberculosis is one important deferential diagnosis in gastroenterological diseases especially in Indonesia. Combining clinical, laboratory, standard imaging (CT or MRI) and EUS-FNA is essential for diagnosing pancreatic lesions (benign or malignant) to avoid unnecessary surgery.

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