



A Case Report of Autoimmune Pancreatitis

Jiaqi Zhang, Ying Chang and Jingchun Yang*

Department of Ultrasound, Xuanwu Hospital, China

Abstract

Autoimmune Pancreatitis (AIP) is a rare disease. In clinical practice, this disease is easily misdiagnosed as pancreatic cancer. Due to the completely different treatment methods, it is necessary to make a rapid and accurate diagnosis. Here, we share the diagnostic process of a 67-year-old patient with AIP, focus on the analysis of Contrast-Enhanced Ultrasound (CEUS) characteristics, and explore the experience of non-invasive preoperative diagnosis of autoimmune pancreatitis based on ultrasound technology.

Introduction

A 67-year-old male patient was found a mass at the head of pancreas via ultrasound examination during outpatient service. Two-dimensional ultrasound prompted a 4.7 cm × 3.4 cm pancreatic head area space-occupying lesions with regular shape, smooth margin; and CDFI present poor peripheral vascularity. The main pancreatic duct is about 0.3 cm wide. It is suggested a mass of pancreatic head area to be determined, recommending Contrast-Enhanced Ultrasound Examination (CEUS). Contrast-enhanced ultrasonography showed slightly higher enhancement in the lesion and equal enhancement in the delayed phase. Time intensity curve analysis showed that the time at which the lesion area began to be enhanced, the time at which it reached the peak and the average transit time were consistent with that of the parapancreatic parenchyma. The results suggested that it might not be cancer and had more possibility of pancreatitis. After admission, we found the patient had a history of continuous abdominal pain radiating to the lower back for 7 days and fever for 4 days with no family genetic history or hepatitis history and no clinical manifestations of emaciation, nausea or vomiting. Physical examination: abdomen soft, liver, spleen and rib not reach no tenderness or rebound pain. After the patient was admitted to the general surgery department, relevant examinations were completed. Dynamic enhanced Computed Tomography (CT) showed, especially exudate around the head area, showing dilatation of the pancreatic duct, and parenchymal enhancement was delayed, which was considered as pancreatitis but could not exclude tumors. Meanwhile, the amylase and pancreatic lipase levels of the patient were 491 IU/L and 1298.5 IU/L respectively, which was slightly higher than normal but didn't reach the diagnostic criteria for pancreatitis. Occasionally, we took a test of serum IgG4 and found the level was up to 7590 mg/L. At this point, there is no doubt that the patient could be diagnosed as local autoimmune pancreatitis.

Combined with the patient's laboratory examination and the consistent imaging features (including CT, two-dimensional ultrasound and CEUS), we decided to give the patient medicine treatment. After steroid treatment, ultrasound examination showed that the mass disappeared after 1 year.

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*Correspondence:

Jingchun Yang, Department of
Ultrasound, Xuanwu Hospital, 45
Changchun Street, Xicheng District,
Beijing, China,

E-mail: yjc301301@163.com

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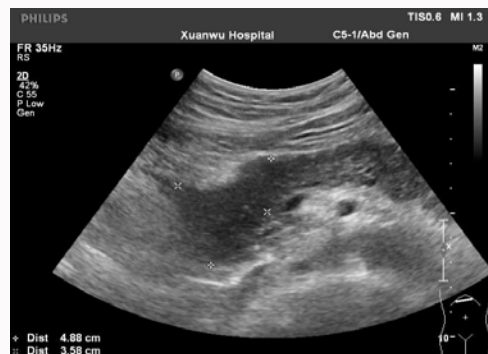


Figure 1: Two-dimensional ultrasound prompted a space-occupying mass of pancreatic head area.

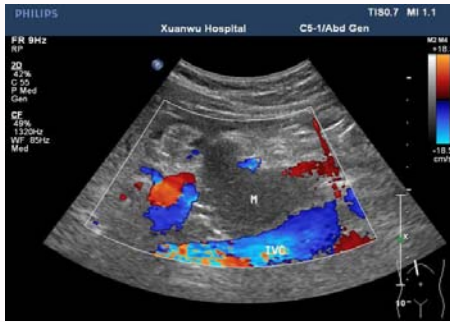


Figure 2: CDFI present poor peripheral vascularity.



Figure 3: CEUS showed slightly higher enhancement.

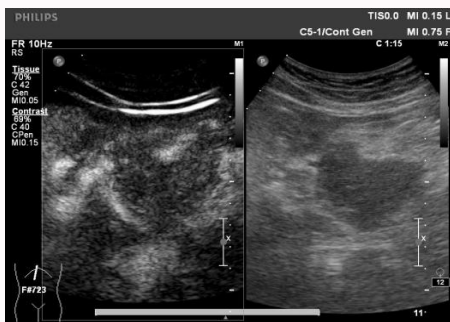


Figure 4: Equal enhancement in the delayed phase.

Cases and Discussion

AIP may be diffuse, multifocal, or focal-forming [1]. It can be divided in two subtypes [2]. Type I, which is called lymphoplasmacytic sclerosing pancreatitis, is usually characterized by positive IgG4 tissue staining, older patient (>age 60) with M>F and extra pancreatic organ involvement common (~60%) [3]. About 23% AIP patients received surgical treatment due to misdiagnosis. Routine preoperative ultrasonography of local autoimmune pancreatitis showed hypoechoic solid mass, which was similar to that of pancreatic cancer (Figure 1). The clinical treatment of the two are quite different: the former mainly depends on hormone therapy for a long time, and pancreatic cancer need timely surgery and postoperative chemoradiation, etc., so by noninvasive imaging method, accurate preoperative diagnosis and the differential diagnosis of mass type autoimmune pancreatitis to take appropriate follow-up clinical treatment and prognosis judgment is of great significance (Figure 2). The application of two-dimensional ultrasound combined with contrast-enhanced ultrasonography is helpful for the differentiation of mass pancreatitis and pancreatic cancer (Figure 3). Pancreatic cancer always presented



Figure 5: Enlargement of the pancreas.



Figure 6: Arterial enhancement less than expected.



Figure 7: Parenchymal enhancement was delayed.

low enhancement during the whole period of CEUS, and the mass autoimmune pancreatitis presented high enhancement in the arterial stage, no significant regression in the venous stage, and still presented high enhancement or equal enhancement in the delayed stage. Due to hyperplasia of fibrous tissue and infiltration of lymphocyte in pancreatic tissue, no obvious damage and hyperplasia of blood vessels in interstitium was found, so the intensity of focal enhancement was not significantly different from that of pancreatic parenchyma. Meanwhile, due to fibrosis of interstitial tissue in pancreas, focal enhancement subsided slowly in venous stage and delayed stage (Figure 4). Pancreatic cancer, however, is a typical lack of blood supply tumor, and the microvascular density of the tumor tissue is lower than that of the surrounding normal pancreatic tissue (Figure 5). Therefore, the whole period of contrast-enhanced ultrasound always presents uneven and low enhancement. The enlightenment from this patient is that when the above imaging features are found and pancreatitis is suspected, IgG4 test can be carried out when necessary in combination with clinical factors such as age and gender of the patient, so as to avoid invasive puncture biopsy (Figure 6). This will relieve the psychological pressure of the patient and better assist the clinical diagnosis and treatment. While in the

clinical process, a biopsy is often performed in patients with unclear diagnosis of lesions, but in this case we have reached the purpose of determining the characteristic of lesions by two-dimensional and CEUS technology (Figure 7). Considering the aspect of avoiding invasive operation, optimizing the diagnosis process and improving the efficiency of diagnosis and treatment, the diagnostic method of this case has reference and popularization significance.

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