Journal of Inflammatory Bowel Diseases & Disorders

Chauhan, J Inflam Bowel Dis & Disord 2016, 1:2

Case Report Open Access

"Barriers Breached": Pancreaticorenal Fistula Complicating Acute Pancreatitis–A Case Report

Udit Chauhan*

Department of Diagnotic and Interventional Radiology, GIPMER, New Delhi, India

***Corresponding author:** Udit Chauhan, Department of Diagnotic and Interventional Radiology, GIPMER, New Delhi, India, Tel: +917838105527; E-mail: dr.udit.chauhan@gmail.com

Received date: September 14, 2016; **Accepted date:** October 27, 2016; **Published date:** November 1, 2016

Abstract

Pancreatitis could be acute or chronic with both the forms causing spectrum of complications. Walled off necrosis or pseudocysts complicating pancreatitis can form at variable number of locations. Pseudocyst occurring at perinephric space is a rare complication. It can cause variety of symptoms like hematuria and renal compression. Authors present two such cases of pancreaticorenal fistula complicating acute pancreatitis which were successfully treated with percutaneous drainage.

Keywords: Pancreatitis; Pancreatico-renal fistula; Pseudocyst; Retroperitoneum

Introduction

Pancreatitis either acute or chronic could lead to variety of complications. Pseudocyst formation is one of the most common complications encountered [1]. Various sites have been described for the formation of the pseudocysts. Collections occurring in the pancreas are termed as Walled Off Necrosis (WON) as per the revised Atlanta classification of acute pancreatitis. Pseudocyst occurs outside pancreatic parenchyma and can be seen at variable number of common and uncommon sites like mediastinum, groin and spleen, and, rarely in the kidney [1]. When occurring in the perinephric space subsequent to breach in the fasciae it could compress the kidney and may eventually hamper the normal functioning of the kidney [2]. This complication needs to be promptly identified and managed in order to salvage the renal function. Authors describe two cases of perinephric pseudocyst complicating acute pancreatitis successfully treated with percutaneous drainage.

Case 1

A 44 year old alcoholic male presented with complaints of pain abdomen. Clinical examination revealed tense abdomen with palpable swelling over the left hypochondrium and left renal fossa. Serum amylase and lipase levels were elevated with 989 IU/L and 560 IU/L respectively. A diagnosis of acute pancreatitis was made and Contrast enhanced CT of abdomen was done. It revealed pancreatic necrosis in the tail region with a large (8 × 7 cm) collection in the left perinephric space causing compression and anterio-inferior displacement of the left kidney (Figures 1A and 1B). The kidney showed decreased enhancement compared to the fellow kidney. The collection in tail region showed communication with the perinephric collection. This is a very rare phenomenon as the pancreatic fluid has to breach the Gerota's fascia and renal capsule to form a collection in perinephric space. Based on the above findings a diagnosis of acute necrotising pancreatitis with perinephric pseudocyst was sought. Since the collection was large enough and causing renal compression and displacement a decision to perform percutaneous drainage of collection was made. A 10 F pig tail catheter was placed in the collection under sonographic guidance which drained a cola colour fluid (Figures 1C and 1D). In total approximately 1.5 litres fluid was drained. Analysis of fluid revealed high amylase content (35000 IU/L). The collection showed resolution after 18 days with relief of renal compression which showed normal enhancement (Figure 1D).

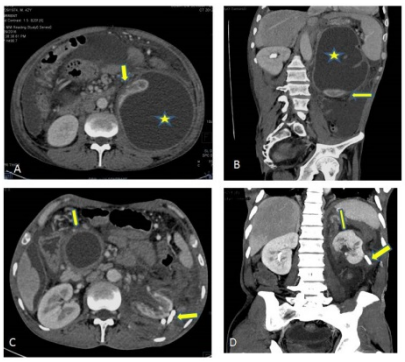

Figure 1: Axial (A and C), oblique MPR (Multiplanar reconstruction B) and coronal MPR (D) images of Contrast Enhanced Computed Tomography (CECT) of abdomen through portovenous phase displaying a large perinephric pseudocyst (stars in A and B) causing gross compression and displacement of left kidney anteriorly (arrow in A) and inferiorly (arrow in 'B') with lesser enhancement as compared to right side, Figures C and D acquired after 18 days of post percutaneous drainage showing pigtail catheter in perinephric space (arrows in C and D), Note near complete resolution of perinephric collection with normal enhancing renal parenchyma (arrow head in D), Note presence of another pseudocyst in relation to the head of the pancreas (arrow head in C).

Case 2

A 37 year old female patient underwent Computed Tomography (CT) for acute pancreatitis. Serum Amylase and Serum Lipase levels were elevated with values of 689 IU/L and 480 IU/L respectively. Abdominal CT showed fluid collection in the region of pancreatic tail and lesser sac along with mesenteric fat stranding in the peri-pancreatic region (Figure 2A). The pancreatic tail pseudocyst was seen to extend into the left perinephric space (Figure 2B). The patient was managed conservatively and follow up CT done two weeks later showed reduction in the pancreatic tail collection with no change in the renal subcapsular collection. Therapeutic needle aspiration of the 400 ml of collection was done as the peri-renal collection was causing compression of the kidney. The aspirate showed Amylase level of 28000 IU/L confirming the diagnosis of pancreaticorenal fistula. Aspiration led to decrease in the amount of collection with relief of compression (Figures 2C and 2D). Later the collection got resolved over the period of 4 weeks.

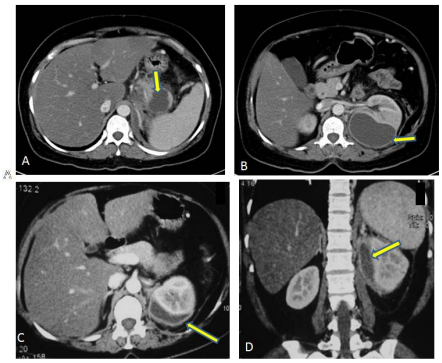

Figure 2: Axial (A,B and C), coronal MPR (D) images of CECT abdomen through portovenous phase displaying collection in the tail region of pancreas (arrow in 'A') with extension into the perinephric space on left side (arrow in 'B'), Post needle aspiration note decrease in size of collection in the perinephric space with relief of renal compression (arrow in 'C' and 'D').

Discussion

Pancreatitis results from inflammation of pancreatic parenchyma with resultant release of activated digestive enzymes, amylase and lipase into the surrounding tissues. This leads to enzymatic digestion and degradation of the extra pancreatic tissues which leads to pseudocyst formation. Pseudocyst occur outside pancreatic parenchyma and can be seen at variable number of common and uncommon sites like mediastinum, groin and spleen, and, rarely in the kidney [2].

Retroperitoneum is divided into three distinct compartments namely anterior pararenal space bounded by fascia transversalis, posterior pararenal space bounded by posterior parietal peritoneum and perinephric space bounded by perirenal fascia. The perinephric space contains the kidneys and adrenal glands and is outlined anteriorly by Gerota fascia and posteriorly by Zuckerkandl fascia. It is usually, but not always, cut off inferiorly by the fusion of Gerota and Zuckerkandl fascias and does not extend into the pelvis. (Figure 3) [4].

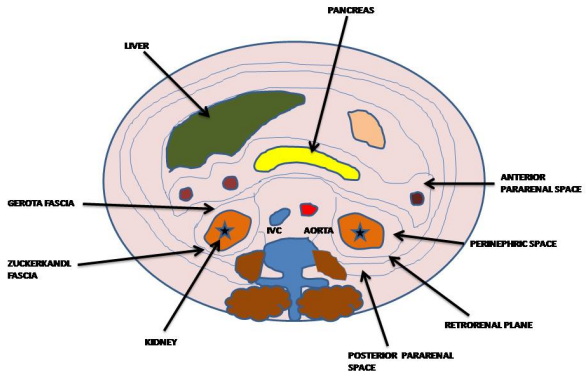

Figure 3: Illustration displaying retroperitoneal anatomy in axial plane. Various retroperitoneal spaces namely pararenal and perinephric spaces are shown with appropriate arrows and markings.

Perinephric extension of pseudocyst is a very rare phenomenon as the pancreatic fluid has to breach the Gerota's fascia and renal capsule to form a collection in perinephric space [3]. Further the collection in perinephric space is dangerous as it has already breached the renal capsule and is located in subcapsular location with its highly degradable enzymes which can even cause damage to the renal tissue. Also, the mass effect that it causes can compress and displace the kidney with compromise of the renal function. These collections by the virtue of degrading capabilities can extend and involve the renal pelvis and may lead to frank or microscopic hematuria which may complicate the clinical picture [5]. Perinephric extension of the pancreatic pseudocyst is mostly seen on the left side as duodenum forms an additional barrier for spread to the right kidney [6].

Precise knowledge of retroperitoneal anatomy is a must in order to correctly identify the site of this uncommon complication of pancreatitis. Immediate recognition and urgent intervention is needed to drain the collection to relieve compression over the kidney so as to avoid unwanted complications.

References

1. Thoeni RF (2012) The revised Atlanta classification of acute pancreatitis: its importance for the radiologist and its effect on treatment. Radiology 262: 751-764.
2. Thandassery RB, Mothilal SK, Singh SK, Khaliq A, Kumar L, et al. (2011) Chronic calcific pancreatitis presenting as an isolated left perinephric abscess: a case report and review of the literature. JOP 12: 485-488.
3. Blandino A, Scribano E, Aloisi G, Visalli C, Pandolfo I (1996) Subcapsular renal spread of a pancreatic pseudocyst. Abdom Imaging 21: 73-74.
4. Gore RM, Balfe DM, Aizenstein RI, Silverman PM (2000) The great escape: interfascial decompression planes of the retroperitoneum. AJR Am J Roentgenol 175: 363-370.
5. Ranschoff J (1916) Pancreatic cyst as a cause of unilateral haematuria. Surg Gynaecol & Obstet 22: 275-276.
6. Anderson EM, Betts M (2007) Renal subcapsular pseudocyst: findings on MRI. Magn Reson Imaging 25: 736-738.