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Acute Pancreatitis with Pancreatic Pseudocyst in a Chronic Kidney Disease Patient: A Case Study

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Abstract: ***Acute pancreatitis is an acute inflammatory process of the pancreas. The occurrence of pancreatitis in CKD has been observed in many studies and the prevalence is higher among those undergoing dialysis. The morbidity of necrotizing pancreatitis is higher among those undergoing peritoneal dialysis. A pancreatic pseudocyst is an encapsulated collection of homogeneous fluid with little or no necrotic tissue within it. It is usually well circumscribed and located outside of the pancreas often in the lesser sac. They occur when the damage to the pancreatic ducts causes extravasation and collection of pancreatic fluid. A pancreatic pseudocyst usually forms around 6 weeks following an episode of acute pancreatitis .The overall incidence is however very low, at 0.5-1 per 100,000 adults per year. This case study presents a 41 year old male with CKD who developed acute pancreatitis and a pancreatic pseudocyst. The patient's condition was complicated by abdominal pain, fever, and the need for cystogastrostomy. This case highlights the challenges and diagnostic considerations for managing acute pancreatitis in CKD patients. Successful intervention and recovery underscore the importance of prompt diagnosis and treatment in reducing morbidity and improving patient's outcomes.***

Keywords: Acute pancreatitis, Chronic kidney disease, Pancreatic pseudocyst, Hemodialysis, Cystogastrostomy

Significance of the Article

This case underscores the importance of monitoring and managing pancreatitis in CKD patients, as the condition presents unique challenges and risks, especially in patients undergoing hemodialysis.

1. Case Report

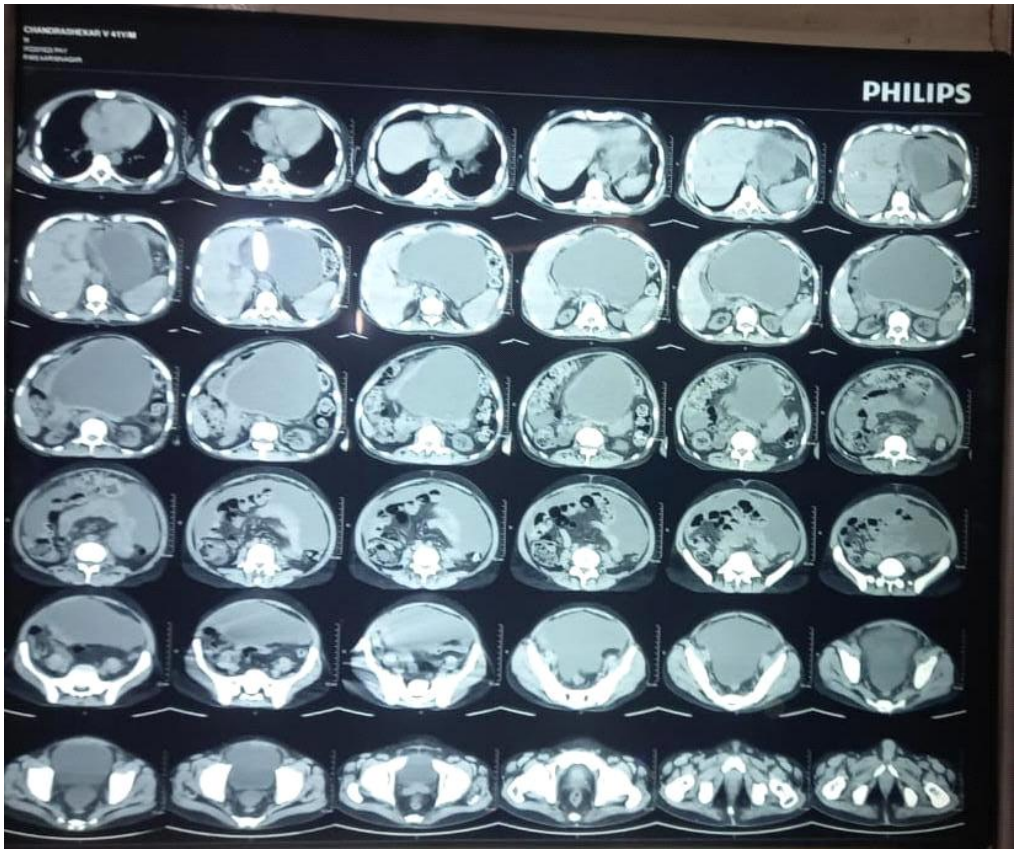
A 41 year male patient who is a known case of CKD stage v with a baseline creatinine around 6.0mg/dl; and on maintenance hemodialysis was admitted in our hospital in view of persistent abdominal pain and fever since a week before admission. Patient is known hypertensive, non-diabetic, chronic alcoholic, non smoker. There is no other comorbidities and he had been using some herbal medicine prior to admission. Patient had a similar episode of pain abdomen a month ago after 2 sessions of hemodialysis and was symptomatically treated at outside hospital.

On examination patient, vitals were normal and per-abdomen examination revealed abdominal tenderness and palpable mass.

Sr amylase and lipase were 179U/L ,329U/L respectively. LFT was normal. Sr creat was 7mg/dl.

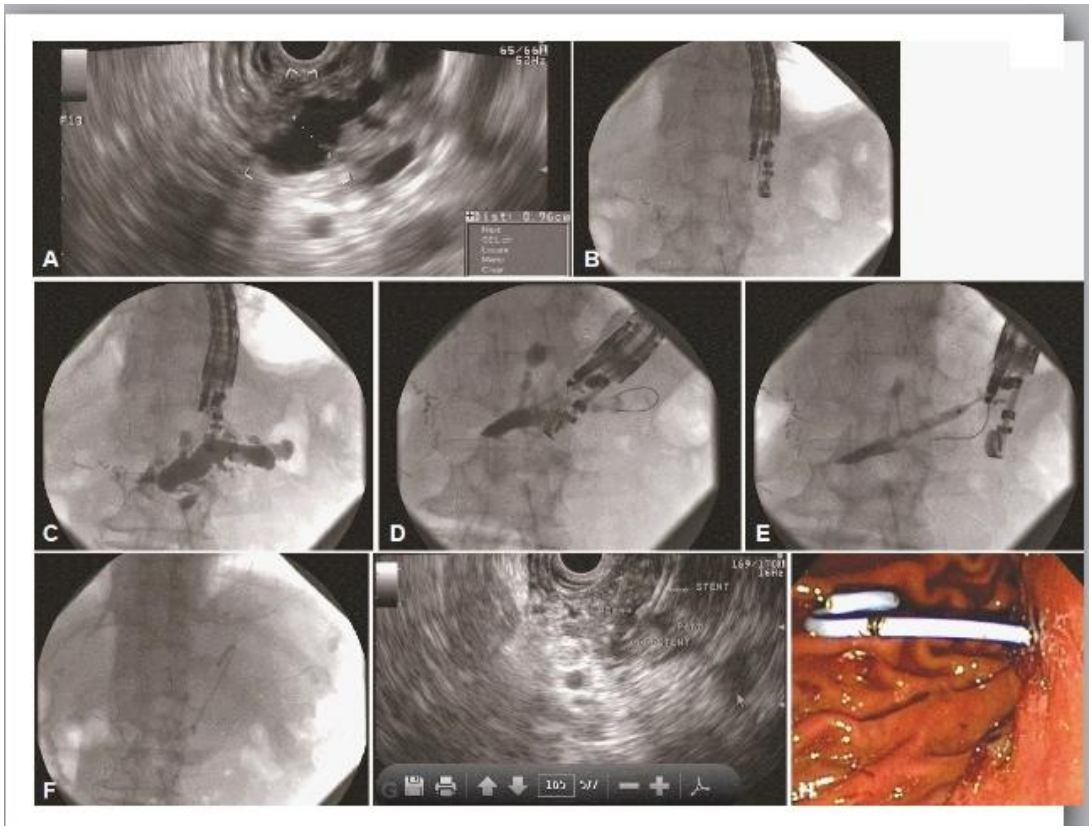
USG abdomen showed peripancreatic necrotic collection, bilateral small sized kidneys with Gr II RPCs, moderate ascites (hypoechoic collection 20*10 cm involving lt subdiaphragmatic region showing thin septations within)

CT abdomen was done, which showed a well-defined hypodense cystic lesion anterior to pancreas extending upto lesser sac abutting greater curvature of stomach, superior and transverse colon; s/o inferior walled off necrosis of pancreas. right small sized kidney with very minimal perinephric fat stranding.



A diagnosis of AKI on CKD V, ACUTE FEBRILE ILLNESS, NECROTIC CYST OF PANCREAS was made.

2 sessions of Hemodialysis done, patient was treated with antibiotics and other conservative management and was advised cystogastrostomy later patient was referred to higher centre for cystogastrostomy. An endoscopic ultrasound was done, which showed a large collection in proximity with stomach bulge and cystogastrostomy was done.



Follow up UGI endoscopy was done and stent was later removed
Patient was later discharged and had a good recovery.

2. Discussion

Common etiological factors for pancreatitis may also contribute to CKD. But, there are some factors that are specifically present in CKD patients, especially those who are on chronic dialysis [both HD and continuous ambulatory peritoneal dialysis (CAPD)]. High incidence of pancreatic anatomical abnormalities documented on postmortem examination; toxic substances in PD dialysate, bags, and tubing; alterations in serum calcium and parathyroid hormone; and bacterial and viral infections are some contributing factors.

"Local hypercalcemia" in the pancreas due to calcium in the PD solution has also been postulated. Increase in various gastrointestinal hormones such as cholecystokinin, gastric inhibitory polypeptide, and glucagon in patients with CKD can stimulate hypersecretion of pancreatic enzymes such as trypsin which can contribute to impairment in pancreatic function. There is also this unique situation of coexistence of peritonitis and pancreatitis in patients who are on CAPD. This presents a diagnostic dilemma for the physician as the symptoms may overlap and both can result in elevation of serum amylase.

Walled off pancreatic fluid collections (PFCs) are a complication of pancreatitis. Walled -off PFCs with little or no necrosis, often called pancreatic pseudocyst are encapsulated, mature fluid collections caused by inflammation and subsequent damage of the pancreatic ducts leading to extravasation and accumulation of pancreatic fluid.

Diagnosis is based on history of acute or chronic pancreatitis who is found to have a PFC on imaging. If diagnosis is suspected based on trans abd USG, CECT and or MRI is performed to confirm the diagnosis, assess the PFC characteristics and define its relationship to stomach and duodenum.

If the diagnosis is uncertain, EUS with sampling of cyst can be performed. amylase level in cyst fluid will be elevated if there is communication with pancreatic ductal system.

Pancreatic ascites and pleural effusion may also develop.

Walled off pancreatic necrosis with or without infection may require EUS guided trans mural drainage followed by direct endoscopic necresectomy.

3. Conclusion

We report a case of 41 year old male who is known case of CKD v and chronic alcoholic ,and developed acute pancreatitis along with walled off pancreatic fluid collections and underwent cystogastrostomy and proved good recovery and excellent prognosis. Acute pancreatitis is one of the causes of acute abdomen in CKD patients. In view of its high morbidity and mortality in this population, this differential diagnosis should always be considered. PD has shown to be associated with more of acute pancreatitis. Our patient developed pancreatitis with hemodialysis.

Following cystogastrostomy, our patient now lives happily without any pain.

This case highlights the complexity of managing acute pancreatitis in CKD patients, especially those on hemodialysis. The successful treatment and positive prognosis following cystogastrostomy reinforce the value of early intervention and multidisciplinary management in cases involving acute pancreatitis with pancreatic pseudocyst in chronic kidney disease patients.

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