Acta Scientific MEDICAL SCIENCES (ISSN: 2582-0931)

Volume 9 Issue 10 October 2025

Case Report

Chronic Calcific Pancreatitis with Multi-System Involvement and Alcohol Dependence Syndrome: Case Report

KNV Adithya* and Rahul Dhanabalan B

Department of General Medicine, Panimalar Medical College Hospital and Research Institute, Poonamallee, Chennai, India

***Corresponding Author:** KNV Adithya, Assistant Professor, Department of General Medicine, Panimalar Medical College Hospital and Research Institute, Poonamallee, Chennai, India.

DOI: 10.31080/ASMS.2025.09.2163

Received: March 31, 2025

Published: September 30, 2025

Abstract

Chronic calcific pancreatitis (CCP) is a progressive fibro-inflammatory disorder of the pancreas, commonly associated with long-term alcohol consumption. It can lead to multi- system complications, including hepatobiliary dysfunction, metabolic derangements, and cardiovascular events. We report a case of a 36-year-old male with CCP, complicated by ascending cholangitis, acute kidney injury (AKI), atrial fibrillation (AF), and alcohol dependence syndrome, highlighting the need for multidisciplinary management in such complex presentations.

Keywords: Chronic Calcific Pancreatitis (CCP); Acute Kidney Injury (AKI)

Introduction

Chronic pancreatitis is an irreversible fibro-inflammatory process of the pancreas, leading to progressive destruction of acinar and islet cells, pancreatic calcifications, and ductal strictures (Etemad and Whitcomb, 2001) [1]. Among its various forms, chronic calcific pancreatitis is frequently associated with alcohol abuse, particularly in tropical regions (Yadav and Lowenfels, 2013) [2].

Patients with CCP often present with abdominal pain, exocrine insufficiency (malabsorption, steatorrhea), and endocrine dysfunction (pancreatogenic diabetes mellitus) (Meier., *et al.* 2010) [3]. Furthermore, complications such as ascending cholangitis, metabolic disturbances (hypokalemia, thrombocytopenia), and cardiovascular manifestations (atrial fibrillation, coronary artery disease) are increasingly recognized (Bang., *et al.* 2014) [4].

This case highlights the systemic complications of CCP and the importance of a multidisciplinary approach in its management.

Case Presentation

A 36-year-old male, a known case of type 2 diabetes mellitus and dyslipidemia for three years, presented to the emergency department with diffuse abdominal pain, recurrent vomiting (4-5 episodes), and binge alcohol consumption two days prior to admission.

Clinical examination and initial assessment

Vitals: BP – 160/80 mmHg, Pulse – 110 bpm, Temperature – 98.4°F, SpO_2 – 98%.

Systemic examination

- **Abdomen:** Soft, epigastric tenderness (+), McBurney's scar (+) from a previous appendectomy.
- **Cardiovascular System:** S1S2 (+), No murmurs.
- **Respiratory System:** Bilateral normal vesicular breath sounds.

Laboratory investigations showed

- **Serum potassium:** 2.9 mEq/L (hypokalemia).
- **Platelet count:** 90,000/µL (thrombocytopenia).
- **Troponin-I:** Elevated (suspecting acute coronary syndrome).
- **Serum creatinine:** 1.9 mg/dL (suggestive of acute kidney injury).

Contrast-enhanced CT abdomen revealed pancreatic calcifications and ductal dilatation, consistent with chronic calcific pancreatitis, alongside dilated intrahepatic bile ducts, suggestive of ascending cholangitis (Lankisch., *et al*. 2015) [5].

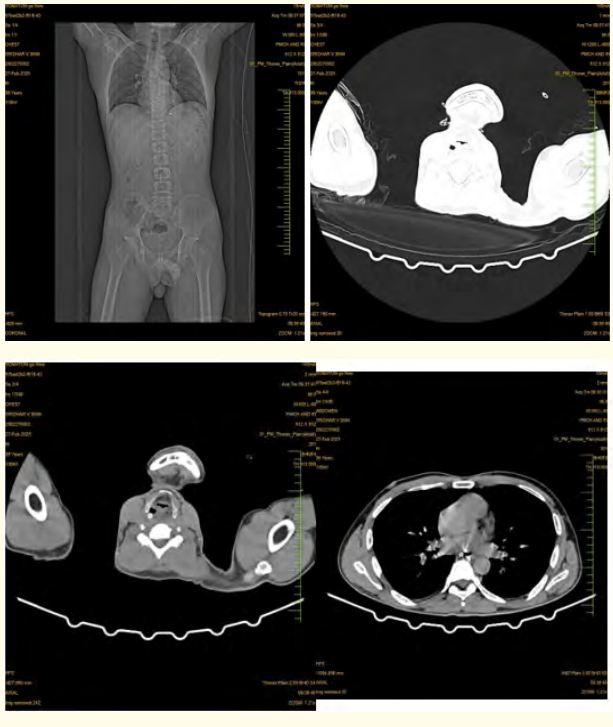

Figure 1

Hospital course and management

During hospitalization, the patient developed acute kidney injury (AKI) and was managed with IV hydration and nephrology consultation. On Day 3, he developed atrial fibrillation (AF), requiring immediate cardiology evaluation. The AF episode was reverted successfully, and an echocardiogram was performed, indicating high-risk features for coronary artery disease (CAD), warranting a planned coronary angiogram post-discharge (Kocer., *et al*. 2016) [6].

Given his alcohol dependence, a psychiatry consultation was sought, and benzodiazepine- assisted withdrawal management was initiated (Rehm., *et al*. 2009) [7].

The patient received the following interventions:

- IV Cefixime for ascending cholangitis.
- IV Proton Pump Inhibitors (PPI) and pancreatic enzyme replacement for CCP.
- Anticoagulation and beta-blockers for AF management.
- Electrolyte correction (potassium supplementation) for hypokalemia.

The patient gradually improved and was discharged in stable condition with a multi-specialty follow-up plan.

Discussion

Chronic calcific pancreatitis is an advanced stage of chronic pancreatitis, predominantly seen in alcoholics and often presenting with progressive pancreatic insufficiency (Braganza., *et al*. 2011) [8].

Patients with CCP are at risk for pancreatogenic diabetes (type 3c diabetes), which differs from traditional type 2 diabetes in its higher risk for hypoglycemia and lack of insulin resistance (Meier., *et al*. 2010) [3].

Additionally, atrial fibrillation in pancreatitis is an underrecognized phenomenon. The systemic inflammatory response in acute pancreatitis can increase cytokine-mediated atrial remodeling, leading to arrhythmogenesis (Kocer., *et al*. 2016) [6]. This patient developed new-onset AF in the setting of systemic inflammation, emphasizing the need for cardiovascular monitoring in pancreatitis cases (Trikudanathan., *et al*. 2019) [9].

This case also highlights the association between CCP and hepatobiliary complications such as ascending cholangitis, which occurs due to pancreatic duct obstruction and biliary reflux (Lankisch., *et al*. 2015) [5].

Given the multisystem involvement, a multidisciplinary approach is essential, including gastroenterologists, hepatologists, cardiologists, nephrologists, and psychiatrists, to optimize patient outcomes (Bang., *et al*. 2014) [4].

Conclusion

This case underscores the systemic impact of chronic calcific pancreatitis, particularly in alcohol-dependent individuals. Given the risk of recurrent hospitalizations, metabolic disturbances, and cardiovascular complications, long-term management should involve gastroenterology, cardiology, nephrology, and psychiatry teams.

Future research should focus on:

- Early cardiovascular screening in pancreatitis patients to prevent sudden cardiac events.
- Exploring novel interventions for pancreatogenic diabetes and alcohol-induced pancreatic damage.

Bibliography

1. Etemad B and Whitcomb DC. "Chronic pancreatitis: diagnosis, classification, and new genetic developments". *Gastroenterology* 120.3 (2001): 682-707.
2. Yadav D and Lowenfels AB. "The epidemiology of pancreatitis and pancreatic cancer". *Gastroenterology* 144.6 (2013): 1252-1261.
3. Meier JJ and Nauck MA. "Chronic pancreatitis, diabetes, and pancreatogenic diabetes mellitus". *Gastroenterology* 139.2 (2010): 456-465.
4. Bang UC., *et al*. "Mortality, cancer, and comorbidities in patients with chronic pancreatitis: a Danish nationwide matched-cohort study". *Gastroenterology* 146.4 (2014): 989-994.
5. Lankisch PG., *et al*. "Acute pancreatitis". *The Lancet* 386.9988 (2015): 85-96.
6. Kocer B., *et al*. "Acute pancreatitis and its relationship with atrial fibrillation". *American Journal of Emergency Medicine* 34.2 (2016): 261-265.
7. Rehm J., *et al*. "Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders". *The Lancet* 373.9682 (2009): 2223-2233.
8. Braganza JM., *et al*. "Chronic pancreatitis". *The Lancet* 377.9772 (2011): 1184-1197.
9. Trikudanathan G., *et al*. "New developments in acute pancreatitis". *Gastroenterology* 156.7 (2019): 1974-1985.