

Case Report: Groove pancreatitis—a lesser-known entity

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ABSTRACT

Groove pancreatitis is an uncommon disease affecting the pancreatic groove region within the dorsal–cranial aspect of the head of the pancreas, duodenum, and common bile duct. The diagnosis is challenging as pancreatic adenocarcinoma also presents similarly. The patient can present with diffuse pain abdomen, weight loss, nausea, and vomiting. The diagnosis is quite challenging, as it is difficult to differentiate it from other diagnoses on radiological imaging. Medical management is the pillar of therapy, and surgical management is indicated in recurrent and intractable symptomatic cases. Here, we present a case diagnosed as groove pancreatitis and managed conservatively.

Keywords: Alcoholism, chronic pancreatitis, groove pancreatitis, peripancreatic cancer

Background

Pancreatitis is an acute inflammatory disorder arising from the activation of pancreatic digestive enzymes within the gland parenchyma.^[1] There are two main types: acute and chronic pancreatitis. The most common symptoms of pancreatitis are upper abdominal or left quadrant burning pain, which is severe. The pain characteristically radiates to the back, worsens while lying flat and eating, and is relieved on forward stooping. A particular entity is groove pancreatitis, which affects the pancreatic groove region within the dorsal–cranial aspect of the head of the pancreas, duodenum, and common bile duct. The radiological differentiation is tricky; hence, this entity needs to be looked upon further. Recently, a retrospective study has shown that the management of groove pancreatitis does not require surgical methods, making it essential for the primary care providers to know about this lesser-known entity.^[2]

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Case Summary

We are reporting the case of a 53-year-old male, known type 2 diabetic for the past 10 years, poorly compliant with treatment, and hypertensive for the past 9 years on no medications. He had a history of alcohol consumption (80 grams/day) including country liquor for the past 15 years. He presented to us with a complaint of abdominal pain for the past 6 months. It originated in the epigastric region, was gradual in onset, diffuse, radiating to the back, increased by bending forward and taking food, and was associated with nausea and vomiting. A local practitioner prescribed the patient proton pump inhibitors (PPIs), suspecting gastro-esophageal reflux disease.

On examination, he was fully conscious and oriented. He had tachycardia with a heart rate of 104 per minute; his blood pressure was 130/80 mm Hg and oxygen saturation of 97% at room air. The respiratory rate was 18 per minute. Abdominal examination revealed tenderness to palpation in the epigastric region without guarding. His bowel sounds were diminished. No skin changes, lumps, or scars over his abdomen were observed, and no palpable organomegaly was there. The rest of the systemic examination was within normal limits.

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Investigations

His blood investigations showed an elevated serum lipase [260 units per liter (U/L)] and amylase (150 U/L). Hemogram was within normal limits, although his renal function tests were deranged with elevated urea [56 milligrams per deciliter (mg/dl)] and creatinine (2.07 mg/dl). Liver function tests showed elevated alkaline phosphatase (ALP 273 IU/L) and gamma-glutamyl transpeptidase (GGT 122 IU/L). His lipid profile demonstrated high total cholesterol (311 mg/dL), serum triglycerides (328 mg/dL), and low-density lipoproteins (165 mg/dL). Ultrasonography of the abdomen suggested grade I fatty liver. As his symptoms were persistent, we did a contrast-enhanced computed tomography (CT) of the abdomen with a CT angiogram. It revealed pancreaticoduodenal groove edema, thickening of the second and third part of the duodenum, and surrounding fat stranding [Figure 1], with the pancreatic head showing mild heterogeneous enhancement [Figure 2]. The hepato-biliary system was normal. Upper gastrointestinal endoscopy was performed and was reported as normal.

Treatment

He was kept on conservative medical management with analgesics, proton pump inhibitors (PPIs), and pancreatic enzyme supplements.

Outcome and Follow-Up

The patient was discharged with PPI and pancreatic enzyme supplements as his pain reduced with conservative management.

Differential Diagnosis

A differential diagnosis of groove pancreatitis from peripancreatic cancer is clinically essential.

Other significant differentials include autoimmune pancreatitis and duodenal hamartoma.

Groove pancreatitis can be considered when the patient has a history of alcohol intake.

Essential findings that differentiate it from pancreatic carcinoma include groove pancreatitis presents as a sheetlike mass, whereas the former manifests as a round, irregular mass. Stenosis of the bile duct is smooth and long in groove pancreatitis but abrupt and short in pancreatic cancer. Cystic lesions in the duodenal wall favor the diagnosis of groove pancreatitis. Arteries in pancreatic head lesions are frequently encased in pancreatic carcinoma but rarely in groove pancreatitis.^[3]

Discussion

In 1973, Becker^[4] used the German term “Rinnenpankreatitis” for describing segmental pancreatitis of the groove area. Later, this was translated into groove pancreatitis by Stolte *et al.* in 1982, who described it as a unique form of segmental pancreatitis defined by fibrous scarring of the anatomic space between the dorso-cranial part of the head of the pancreas, the duodenum, and the common bile duct. He classified groove pancreatitis into a pure form where scarring is localized to the groove area and a segmental form extending to the dorso-cranial portion of the pancreatic head.^[5] It is an infrequent entity; hence, the incidence is unknown. However, it accounts for about 19–24% of the pancreaticoduodenectomies performed for chronic pancreatitis.^[5-7] It predominantly affects middle-aged males with a history of long-term alcohol abuse. There are some possible pathogenic mechanisms, including the obstruction to the duct of Santorini and its defective communication with the duct of Wirsung, minor papilla. Typical manifestations include recurrent upper abdominal pain episodes, early satiety, nausea, vomiting, and weight loss. The signs and symptoms are thought to be due to duodenal stenosis. The pathogenesis is unclear and is thought to be an anatomical or functional obstruction of the minor papilla.

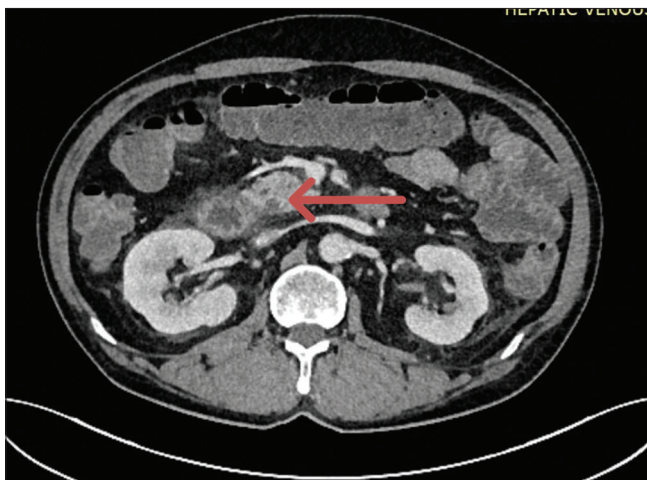


Figure 1: CT abdomen showing edematous groove, thickening of the second and third part of the duodenum, and surrounding fat stranding

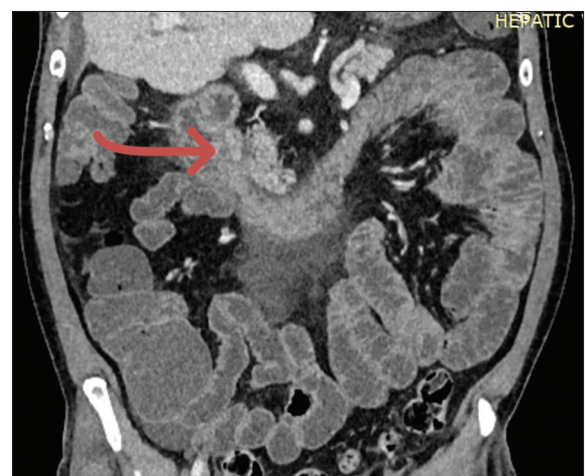


Figure 2: CT abdomen showing pancreatic head with mild heterogeneous enhancement

Pancreatic juice viscosity increases due to excessive alcohol consumption or smoking, leading to calcification of the pancreatic duct. Pancreatitis in the groove region may arise due to impaired pancreatic outflow. The descending part of the duodenum is usually stenotic. Severe fibrosis and scarring may be evident in the groove area.^[6] Pancreatic heterotopia in the duodenum, anatomic abnormality in the vicinity of the minor papilla leading to outflow obstruction, and a history of gastrectomy, gastroduodenal ulcer, and biliary disease are also plausible causes.^[8,9] Pathological findings usually include cystic lesions in the duodenal wall, Brunner gland hyperplasia, Santorini duct dilation, and protein plaques in the pancreatic duct. Jaundice is rarely seen, and blood investigations are commonly within normal limits. There may be a slight elevation of the serum pancreatic enzyme levels and occasional derangement of the liver function tests.^[6,10] Unfortunately, differentiating groove pancreatitis from malignancy based on imaging features, clinical presentation, or laboratory markers can be very difficult. A vast majority of these patients may ultimately undergo a pancreaticoduodenectomy (Whipple's procedure) because of an inability to exclude malignancy completely. Hence, it becomes crucial to consider this entity as a possible and close the second differential to pancreatic carcinoma. Recently, in a review article, seven patients underwent endoscopic treatment, which was considered a feasible treatment method.^[11] In some studies, the first line of management was pain management which was required in almost half of the patients.^[2] These results were similar to those found in other studies, which also showed that conservative management was successful in half of the patients.^[12,13] As a primary care physician, one should know to identify this frequently underdiagnosed condition. Prompt recognition of this patient and proper referral to endoscopy can lead to better outcomes than other forms of chronic pancreatitis, in which symptom relief will be the primary goal of the treatment.

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Conflicts of interest

There are no conflicts of interest.

Learning Points/Take Home Messages

- **Knowledge of the existence of groove pancreatitis suggests a**

Differential diagnostic alternative

- **Important to distinguish from pancreatic carcinoma**
- **Crucial in identification as this can lead to better outcomes**

References

1. Marshall JC, Chapter 78-acute pancreatitis. In: Parrillo JE, Dellinger RP, editor. *Critical Care Medicine*. 3rd ed. 2008; Mosby, p. 1627-38, ISBN 9780323048415. Available from: <https://www.sciencedirect.com/science/article/pii/B9780323048415500807>.
2. Tarvainen T, Nykänen T, Parviainen H, Kuronen J, Kylänpää L, Sirén J, *et al.* Diagnosis, natural course and treatment outcomes of groove pancreatitis. *HPB* 2021;23:1244-52.
3. Gabata T, Kadoya M, Terayama N, Sanada J, Kobayashi S, Matsui O. Groove pancreatic carcinomas: Radiological and pathological findings. *Eur Radiol* 2003;13:1679-84.
4. Becker V. Bauchspeicheldrüse. In: Doerr W, Seifert G, Uhlinger E, editors. *Spezielle Pathologische Anatomie*. Vol. 4. Berlin: Springer; 1973.
5. Stolte M, Weiss W, Volkholz H, Rösch W. A special form of segmental pancreatitis: "Groove pancreatitis". *Hepato-gastroenterology* 1982;29:198-208.
6. Tezuka K, Makino T, Hirai I, Kimura W. Groove pancreatitis. *Dig Surg* 2010;27:149-52.
7. Becker V, Mischke U. Groove pancreatitis. *Int J Pancreatol* 1991;10:173-82.
8. Irie H, Honda H, Kuroiwa T, Hanada K, Yoshimitsu K, Tajima T, *et al.* MRI of groove pancreatitis. *J Comput Assist Tomogr* 1998;22:651-5.
9. Zamboni G, Capelli P, Scarpa A, Bogina G, Pesci A, Brunello E, Klöppel G. Nonneoplastic mimickers of pancreatic neoplasms. *Arch Pathol Lab Med* 2009;133:439-53.
10. Mohl W, Hero-Gross R, Feifel G, Karmann B. Groove pancreatitis: An important differential diagnosis to malignant stenosis of the duodenum. *Dig Dis Sci* 2001;46:1034-8.
11. Chantarojanasiri T, Isayama H, Nakai Y, Matsubara S, Yamamoto N, Takahara N, *et al.* Groove pancreatitis: Endoscopic treatment via the minor papilla and duct of Santorini morphology. *Gut and Liver* 2018;12:208.
12. Lekkerkerker SJ, Nio CY, Issa Y, Fockens P, Verheij J, Busch OR, *et al.* Clinical outcomes and prevalence of cancer in patients with possible groove pancreatitis. *J Gastroenterol Hepatol* 2016;31:1895-900.
13. Balduzzi A, Marchegiani G, Andrianello S, Romeo F, Amodio A, De Pretis N, *et al.* Pancreaticoduodenectomy for paraduodenal pancreatitis is associated with a higher incidence of diabetes but a similar quality of life and pain control when compared to medical treatment. *Pancreatol* 2020;20:193-8.