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Case Report

Groove pancreatitis presenting as gastric outlet obstruction with phytobezoar: a diagnostic challenge

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ABSTRACT

A 61-year-old man presented with three months of persistent vomiting of undigested food, marked weight loss, and melena, with a history of long-standing dyspepsia. Initial imaging demonstrated a mass at the gastroduodenal junction, raising concern for malignancy, but further evaluation revealed features consistent with groove pancreatitis, including duodenal wall thickening, pancreatoduodenal groove changes, and a bulky pancreatic head. Endoscopy identified a large gastric phytobezoar complicating gastric outlet obstruction, which was removed endoscopically. Conservative management with pancreatic enzyme replacement, nutritional supplementation, and proton pump inhibitor therapy led to clinical improvement. This case underscores the diagnostic difficulty in differentiating groove pancreatitis from malignancy and highlights the value of non-surgical management in selected patients.

Keywords: Groove pancreatitis, Gastric outlet obstruction, Phytobezoar, Duodenal ulcer, Pancreatic enzyme replacement

INTRODUCTION

Groove pancreatitis is a rare form of chronic segmental pancreatitis involving the anatomical "groove" between the pancreatic head, duodenum, and common bile duct. First described by Becker in 1973, it accounts for a small proportion of chronic pancreatitis cases but is clinically important due to its close resemblance to periampullary carcinoma.[1] The condition is most often seen in middle-aged men with a history of alcohol consumption or smoking, though other factors such as functional obstruction and chronic duodenitis may contribute.[2] Clinically, patients commonly present with epigastric pain, recurrent vomiting, weight loss, and features of gastric outlet obstruction. Radiologically, characteristic findings include thickening of the duodenal wall, cystic changes in the pancreatoduodenal groove and inflammatory soft tissue adjacent to the pancreatic head.[3] Distinguishing groove pancreatitis from malignancy remains challenging and often requires multimodality imaging and endoscopic evaluation.[4]

The case of a 61-year-old man presented with chronic vomiting, significant weight loss and anemia, initially suspected to have a gastroduodenal junction mass. Further evaluation revealed groove pancreatitis complicated by gastric outlet obstruction and phytobezoar formation which was successfully managed with endoscopic and conservative therapy.

CASE REPORT

A 61-year-old male presented with recurrent vomiting of undigested food particles for three months, associated with abdominal discomfort, a weight loss of 12 kg, and black-colored stools. He had a history of long-standing dyspepsia

for 10 years, partially relieved by over-the-counter antacids. There was no history of fever, jaundice, hematemesis, or altered bowel habits. His past medical history included autism spectrum disorder, cataract surgery, and recently diagnosed diabetes mellitus. He reported gutka chewing but denied alcohol consumption or smoking.

On general examination, the patient was pale with tachycardia (PR 112/min), normotensive (BP 130/70 mmHg), and afebrile. No icterus, cyanosis, clubbing, edema, or lymphadenopathy was noted. Abdominal examination revealed distension with discomfort, but no palpable organomegaly or free fluid. Laboratory investigations showed severe microcytic hypochromic anemia (Hb 7.0–8.8 g/dl) with anisopoikilocytosis, pencil cells, and schistocytes. Serum albumin was low (2.8–3.3 g/dl) with a raised globulin fraction. Renal and liver function tests were within normal limits. Vitamin D was insufficient (22.3 ng/ml), and lipid profile revealed low high-density lipoprotein (HDL) with borderline elevated low-density lipoprotein (LDL).

Contrast-enhanced computed tomography (CECT) abdomen performed at the first hospital showed a 52×29 mm mass lesion at the gastroduodenal junction with luminal narrowing and a suspicious sealed off duodenal perforation, raising concern for malignancy. On repeat review at a tertiary center, the imaging demonstrated a mildly bulky pancreatic head with heterogeneous enhancement, soft tissue in the pancreatoduodenal groove, duodenal wall thickening, and adjacent fat stranding, suggestive of groove pancreatitis (Figure 1). Ultrasound corroborated these findings, showing duodenal thickening with proximal gastric distension.

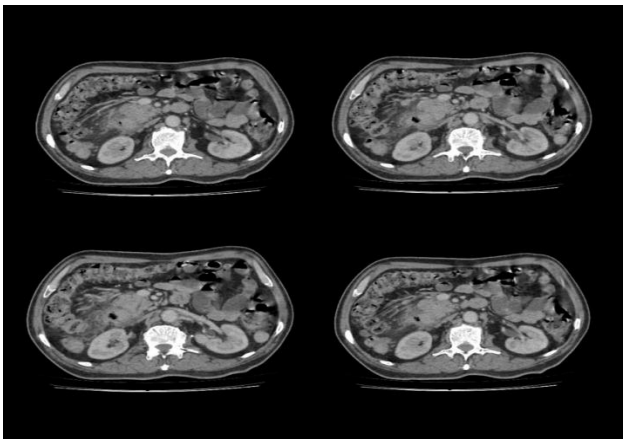

Figure 1: Axial venous phase CT.

Axial venous phase CT (Figure 1) showing mildly bulky pancreatic head with heterogenous enhancement, ill-defined soft tissue in the pancreaticoduodenal groove causing luminal narrowing and reactive wall thickening of D2 segment of duodenum and diffuse fat stranding seen adjacent to the duodenum and head of pancreas. Upper gastrointestinal endoscopy at the first hospital demonstrated reflux esophagitis (grade C) and a narrowed pyloric orifice with ulcerations, consistent with gastric outlet obstruction due to peptic stricture. The scope could not be advanced beyond this level. Repeat endoscopy at the second center revealed a large vegetable phytobezoar in the stomach with residue, which was successfully removed using a roth net and snare. The duodenum showed edema, ulcerations, and narrowing at the D1–D2 junction, though the scope could be negotiated with mild resistance. The patient was managed conservatively with intravenous fluids, proton pump inhibitors, antiemetics, and antibiotics. Anemia and hypokalemia were corrected. Following endoscopic clearance of the phytobezoar, pancreatic enzyme replacement (Panlipase 25,000 IU TDS with meals), iron supplementation, vitamin support, and nutritional therapy were initiated.

During follow-up, he demonstrated clinical improvement with resolution of vomiting and better oral tolerance. Surgical intervention was deferred in view of the diagnosis of groove pancreatitis and satisfactory response to conservative therapy.

DISCUSSION

Groove pancreatitis is an uncommon variant of chronic pancreatitis localized to the pancreatoduodenal groove, the anatomical area bordered by the pancreatic head, duodenum, and common bile duct. Although rare, its recognition is important because the condition frequently masquerades as malignant disease, particularly periampullary carcinoma, and the two can be extremely difficult to differentiate clinically and radiologically.[5,6]

In general, patients present with postprandial epigastric pain, persistent nausea or vomiting, progressive weight loss, and sometimes upper gastrointestinal bleeding.[7] Because these features overlap with neoplastic conditions, many patients undergo multiple investigations before a diagnosis is reached. Imaging plays a central role, with CT and magnetic resonance imaging (MRI) demonstrating soft tissue in the pancreatoduodenal groove and variable duodenal wall thickening.[8] Endoscopic ultrasound (EUS) has been advocated as an additional tool, as it can provide high-resolution images of the pancreaticoduodenal region and also facilitate fine needle aspiration (FNA) to exclude carcinoma.[9] In our case, the initial CT raised strong suspicion of a gastroduodenal malignancy with a sealed-off perforation, highlighting how easily groove pancreatitis can mimic cancer and potentially lead to unnecessary surgery.

To further illustrate this diagnostic challenge, Table 1 compares the CT interpretations from two centers in our case and aligns them with features typical of chronic pancreatitis, groove pancreatitis, and pancreatic ductal adenocarcinoma. This comparison emphasizes the significant overlap of radiological findings and the importance of clinical context in avoiding misdiagnosis. An unusual aspect of this case is the development of a

phytobezoar. Phytobezoars, concretions of indigestible plant material, are rare in the context of pancreatitis.[10] They most commonly arise in patients with impaired gastric motility, previous gastric surgery, or anatomical obstruction.[11] In this patient, duodenal narrowing due to inflammatory changes created a functional gastric outlet obstruction, predisposing to bezoar formation. Endoscopic removal not only relieved obstruction but also obviated the need for surgical intervention, demonstrating the therapeutic as well as diagnostic value of endoscopy.[12]

Table 1: Comparison of CT interpretations in groove pancreatitis and their overlap with chronic pancreatitis and malignancy.

Imaging feature	CT interpretation (secondary care center)	CT interpretation (tertiary care center)	Findings consistent with chronic pancreatitis (Cambridge classification)	CT findings consistent with groove pancreatitis	Overlap with malignancy
Pancreatic head size/contour	No clear mention of contour; general mass at gastro-duodenal junction noted	Bulky head with ill-defined soft tissue and groove involvement	Contour irregularities	Bulky head with smooth contour	Enlarged pancreatic head in PDAC with irregular, poorly defined margins
Soft tissue in pancreatico-duodenal groove	Not described	Ill-defined soft tissue in groove clearly described	Partially, depends on context	Ill-defined, sheet-like, curvilinear, crescent-shaped; delayed enhancement due to fibrosis	Mass-like, solid, often nodular with contrast; may extend into groove but usually arises from pancreas or duodenum
Duodenal wall thickening	Not described	Thickening noted	No	Yes	May be present; often circumferential or focal
Fat stranding in groove	Noted	Diffuse fat stranding described	Yes	Yes	Fat stranding may occur but usually less than in inflammatory conditions
Main pancreatic duct dilation	Mild dilation to 3.5 mm	No duct dilation; appears normal	Yes	Typically, normal or mildly dilated; smooth tapering in chronic cases	Marked, irregular dilation due to blockage from tumor mass
Peripancreatic fluid	Not described	Not described	No	Absence supports chronic process over acute	Can occur due to tumor necrosis or obstruction but less common
Cystic changes in groove or duodenal wall	Not described	Not described	Yes	Yes	Rare
Bile duct narrowing	Not described	Not described	No	Narrowed common bile duct, smooth and tapered without abrupt margins	Abrupt or irregular narrowing, often with upstream dilation
Heterogeneous enhancement pattern	Yes	Yes	Yes	Yes	No (homogeneous hypodense pattern)

Histopathological confirmation remains the gold standard for excluding malignancy in suspected cases. However, tissue sampling is not always possible or may be inconclusive due to the inflammatory nature of the lesion. In such scenarios, close clinical monitoring and repeated imaging become essential.[13] Recent literature also emphasizes the role of conservative management including pancreatic enzyme supplementation, nutritional optimization and proton pump inhibitors in achieving symptom control in selected patients, while reserving surgical options such as pancreaticoduodenectomy for those with refractory symptoms or unresolved diagnostic uncertainty.[14,15]

This case is significant for several reasons. First, it highlights how groove pancreatitis may closely mimic carcinoma, creating a major diagnostic challenge in routine practice. Second, it underscores the rare coexistence of phytobezoar which compounded the patient's presentation and is rarely described in the literature. Finally, it demonstrates the importance of a multimodal approach incorporating cross sectional imaging, endoscopy and longitudinal clinical assessment in refining diagnosis and preventing morbidity.

CONCLUSION

Groove pancreatitis, though rare, should be considered in patients presenting with gastric outlet obstruction and radiological findings suggestive of periampullary pathology. Its close resemblance to carcinoma poses a significant diagnostic challenge and may lead to unnecessary surgical intervention if not recognized. The coexistence of phytobezoar in this case further complicated the presentation but was successfully managed endoscopically. Conservative treatment with enzyme supplementation, nutritional support and acid suppression can yield favourable outcomes in selected patients. This case underscores the importance of clinical suspicion, multimodality imaging and endoscopic evaluation in establishing the diagnosis and guiding appropriate management of groove pancreatitis.

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