

Groove Pancreatitis- A Secret Masquerader

Dr. Shazia Durdana^{1*}, Dr. Umair Shamsul Hoda²

¹MD. General Medicine, Senior Resident, Department of Medicine Jawaharlal Nehru Medical College, A.M.U, India

²MD. General Medicine, Junior Resident, Department of Medicine Jawaharlal Nehru Medical College, A.M.U, India

DOI: [10.36348/sjm.2021.v06i10.008](https://doi.org/10.36348/sjm.2021.v06i10.008)

| Received: 12.09.2021 | Accepted: 15.10.2021 | Published: 19.10.2021

*Corresponding Author: Dr. Shazia Durdana

Abstract

Groove pancreatitis is a type of chronic pancreatitis that affects the area between pancreatic head, duodenum and the common bile duct. It usually affects alcoholic males between the ages of 40-50 years. Patient presents with typical symptoms of chronic pancreatitis such as weight loss, upper abdominal pain, vomiting, and steatorrhea. Groove pancreatitis is thought to occur from the obstruction of minor papilla which leads to impaired pancreatic juice outflow. Differentiating groove pancreatitis from peripancreatic cancer is very important. Imaging by EUS, CT and MRI can reveal characteristic findings such as cystic lesions in duodenal wall and smooth stenosis of bile duct. In cases where there is a diagnostic dilemma, biopsy through duodenum is confirmatory. Characteristic findings on biopsy include cystic lesions in duodenal wall, Brunner gland hyperplasia, dilation of Santorini's duct and protein plaques in pancreatic duct. Treatment options include conservative management with endoscopic stenting and invasive approach with pancreaticoduodenectomy. In the following case report we present to you a case of non-alcoholic young female with morbid obesity who presented to us with complaints of pain abdomen and vomiting for 1 month, with no significant derangements in lab investigations. Her abdominal ultrasonography revealed diffuse thickening of the second and third parts of the duodenum with fine inflammatory strands extending to the head and uncinate process of the pancreas with a narrowing of the duodenal lumen, which was later confirmed to be groove pancreatitis on CECT-abdomen and patient was successfully managed conservatively.

Keywords: Brunner's gland; Groove Pancreatitis; Hamartoma; Pancreatoduodenectomy.

Copyright © 2021 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Groove pancreatitis (GP) is a rare form of chronic pancreatitis also called para-duodenal wall cyst, pancreatic hamartoma of the duodenum, cystic dystrophy of heterotopic pancreas, and myoadenomatosis. It usually affects the anatomical area between head of pancreas, duodenum and common bile duct [1]. The exact cause is unknown, although there are strong associations with long-term alcohol abuse and smoking causing excessively viscous pancreatic secretions that produce functional and/or anatomical minor papilla obstruction. This results in impaired pancreatic enzyme outflow, Brunner's gland hyperproliferation, and resultant pancreatitis [2]. Although, GP more commonly affects middle-aged men with history of chronic alcoholism, it can also occur in females as well as in patients without history of alcoholism [3]. Clinical manifestations resemble other forms of chronic pancreatitis, with main feature being vomiting secondary to duodenal obstruction. It is important to identify this rare entity as it poses a

diagnostic challenge by mimicking pancreatic malignancy. Blood tests often show a slight elevation of serum pancreatic enzymes and occasionally of serum hepatic enzymes [4]. Tumor markers such as carcinoembryonic antigen and carbohydrate antigen (CA)19-9, are rarely elevated [5]. However, differentiating groove pancreatitis from malignancy on the basis of clinical presentation, imaging features or laboratory features can be quite difficult, and significant majority of these patients eventually undergo a pancreaticoduodenectomy because of an inability to completely exclude malignancy. In certain cases, however, the imaging features on CT and MRI can allow the radiologist to prospectively suggest the correct diagnosis and thus avoid unnecessary surgical intervention. This case report demonstrates the rare occurrence of groove pancreatitis in a young non-alcoholic female with highly suggestive radiological findings.

CASE REPORT

A 35-year female presented to emergency department with complains of pain in abdomen particularly worse after meals for 1 month, which increased in intensity for 3 days, which she rated at 7 on a scale of 0 to 10, with 10 indicating the most severe pain. Pain was accompanied by frequent episodes of vomiting. The patient had constipation, difficulty sleeping because of the pain, and decreased appetite. On examination, the temperature was 98.4 F, the blood pressure 132 mm Hg systolic and 84 mm Hg diastolic, and the pulse 96 beats per minute; the respiratory rate was 16 bpm, and the oxygen saturation was 97% while she was breathing ambient air. The weight was 100 kg, the height 152 cm, and the body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) 43.2 (>97th percentile). The abdomen was soft, with decreased bowel sounds, tenderness to deep palpation in the epigastrium, and slight guarding; there was no distention or rebound tenderness.

The red-cell indices and platelet count were normal, as were tests of renal function and measurements of electrolytes, glucose, phosphorus, calcium, protein, albumin, total and direct bilirubin, alkaline phosphatase, aspartate aminotransferase, cholesterol, triglycerides, and low-density lipoprotein cholesterol. Urinalysis revealed 1+ ketones and bilirubin and trace urobilinogen. Her serum amylase and S. Lipase were within normal limits. Tumor marker-CA-19-9 level was 290. Transcutaneous ultrasound of the abdomen showed diffuse thickening of the second and third parts of the duodenum with fine inflammatory strands extending to the adjacent mesentery, and the head and uncinate process of the pancreas with a narrowing of the duodenal lumen. A contrast-enhanced CT of the abdomen revealed bulky body and tail of pancreas with fat streakiness and stranding along pancreatic body and tail along with circumferential thickening of hepatic flexure, first and second part of duodenum and submucosal fat proliferation along medial wall of ascending colon with marked adjacent heterogeneity and fat stranding suggestive of groove pancreatitis as shown in Figure 1.

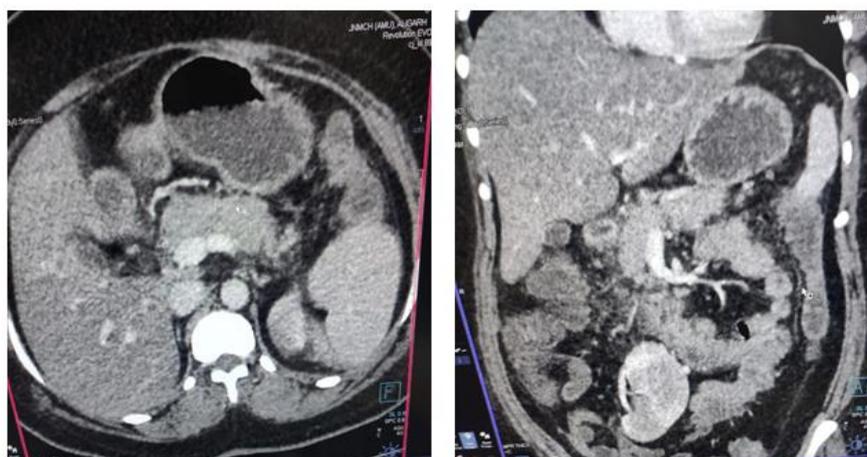


Figure 1: (A and B) CT of the abdomen demonstrates bulky body and tail of pancreas alongwith submucosal fat proliferation and fat stranding along medial wall of ascending colon

DISCUSSION

Groove pancreatitis is an infrequent disease, and its rare occurrence can be attributed to the lack of familiarity with this disease [2]. It usually affects the groove between superior aspect of pancreatic head, duodenum and common bile duct and often mimics submucosal duodenal tumors and malignant periampullary tumors that present with obstructive jaundice [6]. Imaging plays a vital role in identifying this entity. Ultrasonography (USG) usually reveals a hypochoic mass with thickening of the duodenal wall, leading to narrowing of the second duodenal portion and bile duct obstruction [7]. Endoscopic Ultrasound (EUS) may be much more sensitive than USG in indicating the exact location and extent of the disease and can demonstrate thickening and stenosis of the second duodenal portion with intramural cysts [8]. The

most important condition to consider in differential diagnosis of GP is the pancreatic head malignancy. There lies the utility of portal venous phase in CT and MRI to distinguish GP from pancreatic groove malignancy [9]. Findings on MRI that can rule out malignancy with high accuracy include focal thickening of the second duodenal portion, an abnormally increased enhancement of the second duodenal portion, and cystic changes in the region of the accessory pancreatic duct [10].

Distinguishing this entity from pancreatic or duodenal malignancy may not always be feasible despite the presence of suggestive features on imaging, thus making its diagnosis quite difficult. Thus, in many cases, given the inability to reliably exclude an underlying malignancy, patients ultimately undergo pancreaticoduodenectomy [11]. However, a strong

suspicion for groove pancreatitis should always be kept in all those circumstances where imaging features are highly characteristic of groove pancreatitis, blood biochemistries including hepatic enzymes, pancreatic enzymes are not markedly deranged and tumor markers such as CEA and CA-19-9 are negative, so that major surgery can potentially be avoided. Groove pancreatitis can be managed conservatively particularly those cases which are secondary to alcoholism and involve analgesia, parenteral nutrition, and alcohol cessation. Pancreaticoduodenectomy is usually recommended in those patients where GP is secondary to anatomic abnormalities or those refractory to conservative management [12].

CONCLUSION

Groove pancreatitis often masquerades as pancreatic or duodenal malignancy and hence, should be kept in mind in all cases of focal pancreatitis involving the head or uncinate process of the pancreas with involvement of the adjacent duodenum as seen in our patient where imaging studies (USG & CECT Abdomen) lead us to make the diagnosis of Groove pancreatitis and to successfully manage the patient conservatively, thereby, avoiding the need for unnecessary surgical exploration. Thus, it is of utmost importance for the treating physician to be aware of groove pancreatitis as its identification can avoid unnecessary surgical exploration of the patient and patient can be managed appropriately by conservative measures as symptoms of GP decrease with time and suggest conservative treatment as the first-line treatment option [13].

REFERENCES

1. DeSouza, K., & Nodit, L. (2015). Groove pancreatitis: a brief review of a diagnostic challenge. *Archives of Pathology and Laboratory Medicine*, 139(3), 417-421.
2. Raman, S. P., Salaria, S. N., Hruban, R. H., & Fishman, E. K. (2013). Groove pancreatitis: spectrum of imaging findings and radiology-pathology correlation. *American Journal of Roentgenology*, 201(1), W29-W39.
3. Pallisera-Lloveras, A., Ramia-Ángel, J. M., Vicens-Arbona, C., & Cifuentes-Rodenas, A. (2015). Groove pancreatitis. *Rev Esp Enferm Dig*, 107(5), 280-288.
4. Shudo, R., Yazaki, Y., Sakurai, S., Uenishi, H., Yamada, H., Sugawara, K., ... & Yamamoto, Y. (2002). Groove pancreatitis: report of a case and review of the clinical and radiologic features of groove pancreatitis reported in Japan. *Internal medicine*, 41(7), 537-542.
5. Yamaguchi, K., & Tanaka, M. (1992). Groove pancreatitis masquerading as pancreatic carcinoma. *The American journal of surgery*, 163(3), 312-316.
6. Eshagh, K., Reid, C., Chan, M., Lin, G., & Savides, T. (2014). Groove Pancreatitis: A Malignant Masquerade in the Duodenum. *J Gastroint Dig Syst*, 4(217), 2.
7. Pallisera-Lloveras, A., Ramia-Ángel, J. M., Vicens-Arbona, C., & Cifuentes-Rodenas, A. (2015). Groove pancreatitis. *Rev Esp Enferm Dig*, 107(5), 280-288.
8. Arvanitakis, M., Rigaux, J., Toussaint, E., Eisendrath, P., Bali, M. A., Matos, C., ... & Delhaye, M. (2014). Endotherapy for paraduodenal pancreatitis: a large retrospective case series. *Endoscopy*, 46(07), 580-587.
9. Ishigami, K., Tajima, T., Nishie, A., Kakihara, D., Fujita, N., Asayama, Y., ... & Honda, H. (2010). Differential diagnosis of groove pancreatic carcinomas vs. groove pancreatitis: Usefulness of the portal venous phase. *European journal of radiology*, 74(3), e95-e100.
10. Kalb, B., Martin, D. R., Sarmiento, J. M., Erickson, S. H., Gober, D., Tapper, E. B., ... & Adsay, N. V. (2013). Paraduodenal pancreatitis: clinical performance of MR imaging in distinguishing from carcinoma. *Radiology*, 269(2), 475-481.
11. Balakrishnan, V., Chatni, S., Radhakrishnan, L., Narayanan, V. A., & Nair, P. (2007). Groove pancreatitis: a case report and review of literature. *Jop*, 8(5), 592-597.
12. Casetti, L., Bassi, C., Salvia, R., Butturini, G., Graziani, R., Falconi, M., ... & Pederzoli, P. (2009). "Paraduodenal" pancreatitis: results of surgery on 58 consecutive patients from a single institution. *World journal of surgery*, 33(12), 2664-2669.
13. Tarvainen, T., Nykänen, T., Parviainen, H., Kuronen, J., Kylänpää, L., Sirén, J., ... & Sallinen, V. (2021). Diagnosis, natural course and treatment outcomes of groove pancreatitis. *HPB*, 23(8), 1244-1252.