BMH MEDICAL JOURNAL

BMH Med. J. 2020;7(1):15-19. **Case Report**

Groove Pancreatitis - A Case Report

Ajith Kumar MG

Baby Memorial Hospital Calicut, Kerala, India

Address for Correspondence: Dr. MG Ajith Kumar, DMRD, DNB (Radiology), Senior Consultant in Radiology, Baby Memorial Hospital, Kozhikode, Kerala, India. PIN: 673004. E- mail: akniramala@gmail.com

Abstract

Groove pancreatitis is an uncommon form of chronic pancreatitis affecting the groove in between the pancreatic head, the second part of the duodenum and common bile duct. Exact of the cause of pathology is unclear. However, it is associated with peptic ulcer disease, long term alcohol consumption, cigarette smoking, functional obstruction of the duct of Santorini and Brunner gland hyperplasia.

This entity sometimes mimics as pancreatic carcinoma and often untimely leads to surgery.

Keywords: Brunner Glands, Carcinoma, Pancreas, Pancreatic Ducts, Pancreatitis

Introduction

Groove pancreatitis is a chronic form of focal/segmental pancreatitis affecting the groove in the region of dorsocranial part of pancreatic head, second part of duodenum laterally and the common bile duct [1].

Solte et al coined the term "groove pancreatitis" in the year 1982 and described it as a special form of segmental pancreatitis, characterized by the fibrous scars of the anatomic space. Becker and Mischke described it as pure and segmental form [2].

The prevalence of the disease is difficult to assess. In three surgical series this diagnosis was present in 2.7%, 19.5% and 24.4% of duodenopancreatrctomy specimens obtained from patients of chronic pancreatitis [1-3].

Groove pancreatitis is often diagnosed in 40-50 aged middle-aged individual who was on long term consumption of alcohol [1,2]. The presenting symptoms would be postprandial abdominal pain and postprandial vomiting. Impaired motility with stenosis of duodenum leads to vomiting and subsequent weight loss.

Blood test shows a slight elevation of serum pancreatic and hepatic enzymes. Tumour markers like CEA, CA-19-9 are rarely elevated.

The distinction between groove pancreatitis and pancreatic adenocarcinoma is often difficult on imaging [3,5-7].

Groove pancreatitis can be treated medically. Sometimes surgery (Whipple procedure or pylorus suppressing pancreaticoduodenectomy) is indicated to exclude carcinoma or any unresolving inflammatory entities.

Case Report

Middle aged person presented with dyspepsia pain in the epigastrium radiating to back and postprandial vomiting for the last 2 years. He is not an alcoholic/smoker.

He was admitted to various hospitals and evaluated for the symptoms. There was an only mild elevation of serum amylase which was examined four times over a period of two years, and the value varies from 122-144U/L.

Later he was subjected to an endoscopic evaluation, which showed thickened and edematous D1/D2 junction (**Figure 1**). Shiny reddish raised mucosa had a polypoid appearance. The diagnosis was duodenitis. Subsequent CT evaluation did not yield any thumbing results.

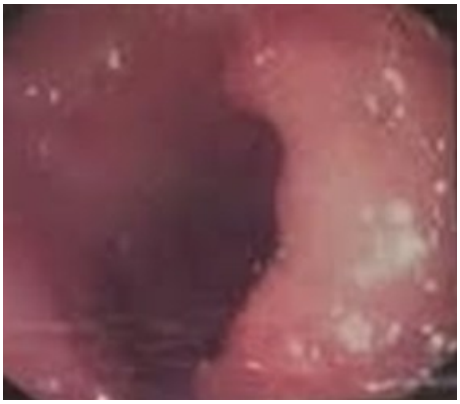

Figure 1: OGD showing edematous and inflamed mucosal folds of the duodenum.

Later he presented to our hospital for postprandial vomiting, following intake of heavy meat foods usually 3 to 4 hours after ingestion. He underwent contrast enhanced CT evaluation. In the plain study, it revealed a thickened wall of a second and proximal third part of duodenum associated with luminal narrowing (**Figure 2**). The pancreatic head was bulky and venoportal phase showed the edematous pancreatic head and a cyst with a well-enhancing wall extending from the pancreatic head, nearly touched the wall of the duodenum. In the arterial phase, the enhanced cyst wall was quite evident (**Figures 3** & **4**).

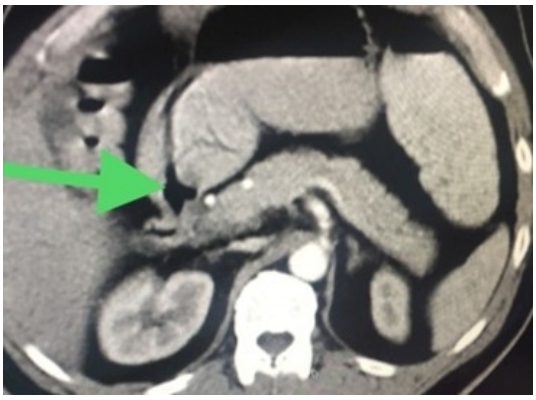

Figure 2: Thickened and stenosed duodenal wall at second part.

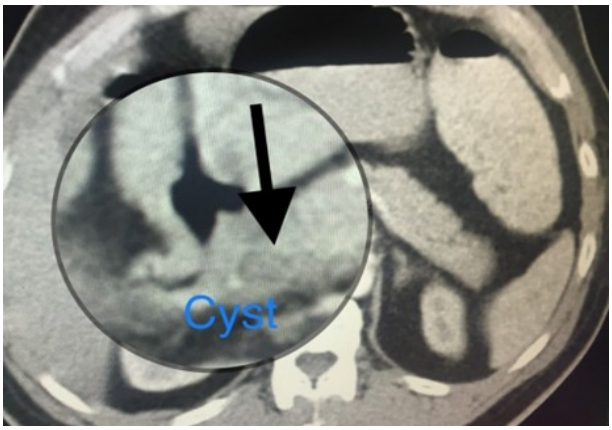

Figure 3: Shows cyst in the groove region extending from the duodenal wall and abuts the pancreatic head.

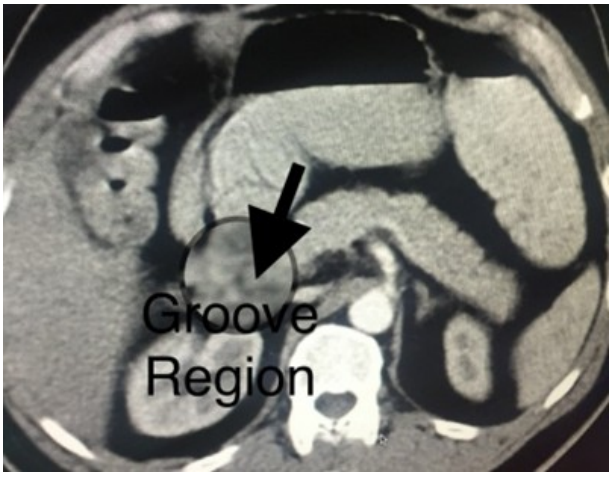

Figure 4: Groove region

Discussion

In 1982 Solte et al coined the term groove pancreatitis a special firm of segmental pancreatitis characterized by the fibrous scars in the anatomic space between the dorsocranial aspect of the pancreatic head, the duodenum and the common bile duct. They reported the largest series of patients and reviewed in detail the histopathological series of 30 patients with groove pancreatitis in a series of 123 patients undergoing pancreaticoduodenectomy for chronic pancreatitis [1].

Earlier, in 1970 the entity was described by Becker et al as "segment pankreatitis" or Rinnenpankreatitis" in the German literature [2,8]. The disease is rare and it's low detection rate is attributed to lack of familiarity.

Adsay and Zamboni published a review in which they tried to unify the concept of "groove pancreatitis ", cystic dystrophy of the heterotopic pancreas and paraduodenal wall cyst [9]. While heterotopic pancreas is only occasionally found in groove pancreatitis, the presence of this feature is an inherent precondition for the cystic dystrophy of the duodenal wall in the heterotopic pancreas as described by the Potet and Duclert [10]), Flejou et al [11] and Vullierme et al [12]. This condition is characterized by the presence of cysts surrounded by inflammation and fibrosis of the duodenal wall, intermingled with pancreatic ducts and lobules.

Becker and Mischke classified groove pancreatitis into pure and segmental form [2]. In the pure form of groove pancreatitis, it involved the groove only, with preservation of pancreatic parenchyma

and the main pancreatic duct. Its segmental form involves the pancreatic head and main pancreatic duct with stenosis and upstream dilatation.

Groove pancreatitis is often diagnosed in 40-50-year-old alcoholic men [1,2]. The presenting symptoms are postprandial abdominal pain and vomiting. Impaired motility and stenosis of the duodenum usually follows. Jaundice is unusual and the duration of the symptoms vary from few weeks to years.

A blood test reveals elevation of pancreatic enzymes, that too mild and occasionally elevated liver enzymes [4]. Tumour markers like CEA and CA19-9 are rarely elevated [3].

Upper GI endoscopy reveals an inflamed and sometimes polypoid duodenal mucosa with stenosis of the lumen [5,13]. Abdominal ultrasound usually shows a hypoechoic mass at the pancreatic head and MDCT reveals poorly enhanced mass between pancreatic head and thickened and stenosed duodenum [6]. The typical representation of findings may not obvious in all cases.

MRI shows hypointense mass on T1 and iso or slightest hyperintense mass on T2. On contrast, administration enhancement is particularly delayed due to the presence of fibrous tissues [14].

Magnetic Resonance Cholangio Pancreatogram (MRCP) shows a smooth narrowing of common bile duct and relative normalcy in the main pancreatic duct [14]. Endoscopic Retrograde Cholangio Pancreatogram (ERCP) findings resemble more or less the same as in MRCP.

The prime factor or most important factor in consideration is the exclusion of malignancy especially pancreatic head adenocarcinoma or groove pancreatic head adenocarcinoma. The main features which support adenocarcinoma includes obstructive jaundice with irregular narrowing of common bile duct which would be easily depicted with the help of MRCP/ERCP.

GABA et al reported 9 cases of histologically proven groove pancreatic adenocarcinoma whose imaging features were as that of groove pancreatitis [7].

Differential diagnosis

1. Pancreatic adenocarcinoma of the head of pancreas is the most relevant differential diagnosis to paraduodenal pancreatitis.
2. Duodenal carcinoma when it appears as a focal thickening of medial wall of duodenum.
3. Ampullary neoplasm - both adenoma and carcinoma raises certain challenges to diagnosis or even mimics as groove pancreatitis at the time of presentation.
4. Acute pancreatitis involving the pancreatico duodenal groove.

Conclusion

Radiology stays as a powerful mode to determine the diagnosis with the help of MDCT, MRI and USG. Differentiating this entity from the the adenocarcinoma of pancreatic head or duodenal carcinoma should be the motto behind the diagnosis.

With highly suggestive imaging characteristics if the radiologist strongly suggests the diagnosis on presentation as groove pancreatitis, unnecessary major surgery can be avoided.

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