GROOVE PANCREATITIS-A RARE ENTITY: A CASE REPORT

[1]Dr. Dharmik Patel, [2]Dr. Swapnil Tolia, [3]Dr. J G Vagadiya, [4]Dr. J G Bhatt

[1]2nd year surgery resident, [2]3rd year surgery resident, [3]Associate professor, [4]Head of the department
DEPARTMENT OF GENERAL SURGERY
PDUMCH, RAJKOT

***Abstract*- Context Groove pancreatitis is a rare form of segmental chronic pancreatitis. It involves dorsal–cranial aspect of the head of the pancreas, duodenum, and common bile duct The exact etiology is yet to be determined but associations include a history of long-term alcoholism, smoking, pancreatic duct obstruction, Brunner gland hyperplasia, and ectopic pancreatic tissue.The condition can simulate or mask pancreatic adenocarcinoma and should be considered in the differential diagnosis of pancreatic (head of the pancreas) masses or duodenal stenosis.we report a case of 52 year old male with 3 year history of upper abdominal pain, occasional vomiting who's radiological investigation were suggestive of groove pancreatitis with distal CBD stricture & PD stenosis. We managed this patient with ERCP and stenting and currently patient is symptomless in good health and being followed up actively.**

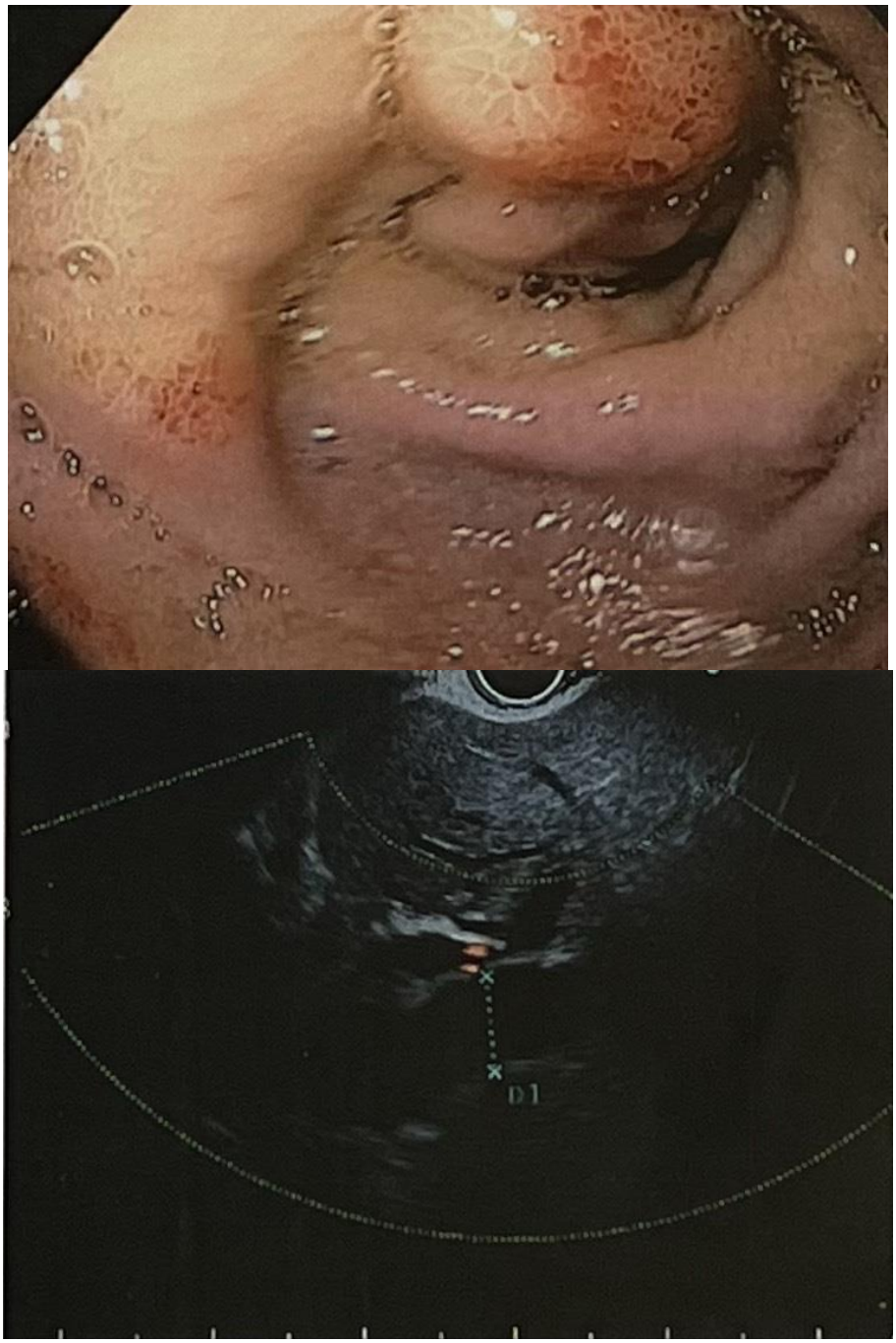
INTRODUCTION

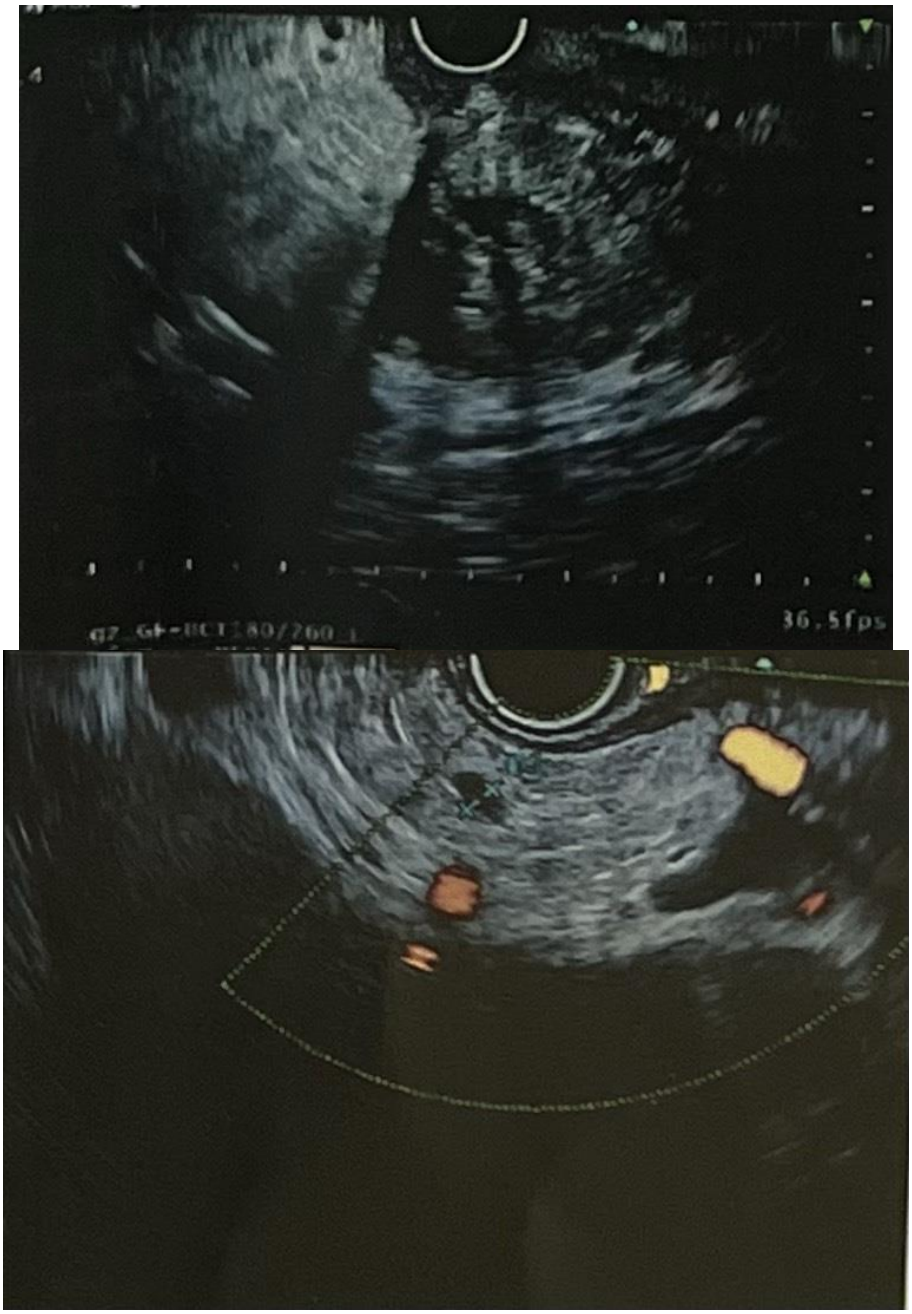
In 1982, Stolte et al. coined the term ''groove pancreatitis'' and described it as a special form of segmental pancreatitis characterised by fibrous scars of the anatomic space between the dorsocranial part of the head of the pancreas, the duodenum and the common bile duct [1]. Becker and Mischke classified groove pancreatitis into a pure form and a segmental form [2]. The prevalence of groove pancreatitis is difficult to assess. In three surgical series, this diagnosis was present in 2.7%, 19.5%, and 24.4% of duodeno- pancreatectomy specimens obtained from patients with chronic pancreatitis [1, 2, 3]. Groove pancreatitis is often diagnosed in 40- to 50-year-old alcoholic men [1, 2]. The patients usually present with postprandial abdominal pain and, subsequently, impaired motility, stenosis of the duodenum and postprandial vomiting often leading to significant weight loss. Blood tests often show a slight elevation of serum pancreatic enzymes and occasionally of serum hepatic enzymes [4].Groove pancreatitis can be treated by conservative medical measures, but surgery is often required because of the severity of the clinical symptoms and in order to rule out malignancy. The surgical treatment of choice is a pancreaticoduodenectomy using the Whipple procedure or a pylorus-preserving pancreaticoduodenectomy.
In this article, we present the case of a patient with groove pancreatitis.

CASE REPORT

A 52-year-old man, with no comorbities and no history of any addiction, presented with epigastric pain radiating to the back, intermittent vomiting and a weight loss of 17kg over period of three years. There had been recurrent admissions due to abdominal pain over the past three years for which he was evaluated at various hospitals. His serum amylase were within normal limits. Transcutaneous ultrasound of the abdomen showed heterogeneous pancreas with multiple calcification in body and head region with few calculi within MPD with dilated MPD and max AP diameter 4.5mm. A CECT was suggestive of bulky pancreas with hazziness of surrounding fat plates and small non enhancing collection of size 8*6 mm is noted in body of pancreas. CBD appears dilated with 13mm diameter and abrupt narrowing of lumen is noted in distal CBD near pancreas. Multiple enlarged lymph nodes are seen at porta, in pre paraaortic region and in pancreaticoduodenal groove. Endoscopic ultrasound showed Thick duodenal wall in D1- D2 (9mm) with few cystic spaces in pancreaticoduodenal groove. Head of pancreas was hypochoic, enlarged and heterogenous.
MPD was normal in body (2mm). CBD was 11.7mm in suprapancreatic part. GB was distended.All this finding were suggestive of groove pancreatitis.MRCP was done which suggest Enlarged head of pancreas with mild heterogeneous signal intensity, ill-defined margin and mild inflammation/oedema in surrounding fat, possibility of focal pancreatitis, groove pancreatitis is most likely. Conservative approach was initiated and we performed ERCP. During procedure we found long bulging papilla. Pre-cut sphincterotomy done and pancreatic duct was cannulated with placement of 5FR X 10cm single pigtail was done. Cholangiogram showed dilated CBD and IHBR with distal CBD stricture. Biliary sphincterotomy was done and a 7 FR X 10cm double pigtail stent was placed in CBD. The patient had an uneventful recovery. Post procedure patient was kept NBM for 24hrs with adequate antibiotic and analgesic coverage. Patient was discharged on day 2 of procedure He is on conservative medical management with analgesics, proton pump inhibitors

and a pancreatic enzyme supplement. He does not have any complaints of abdominal pain and being regularly followed up at our OPD.

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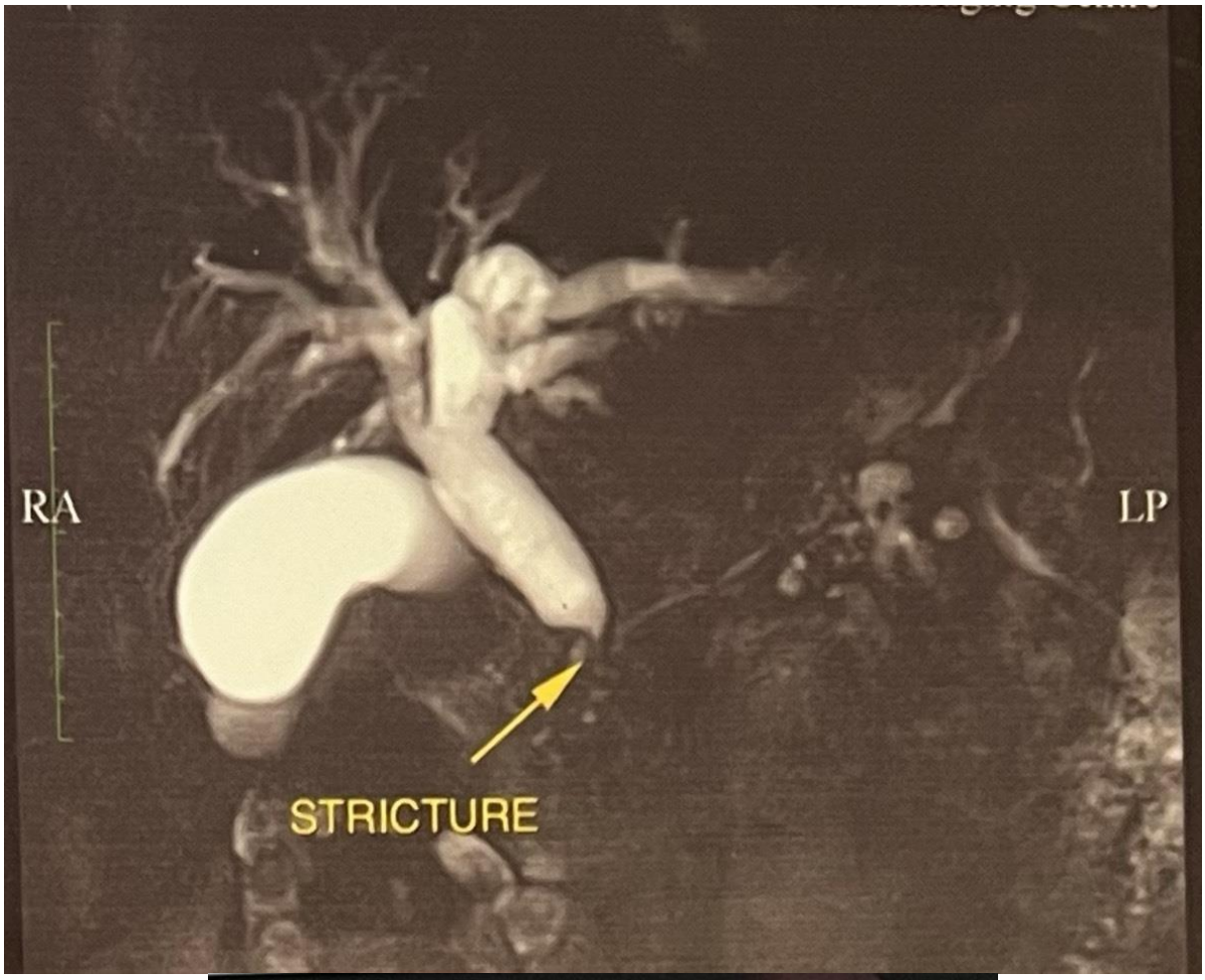
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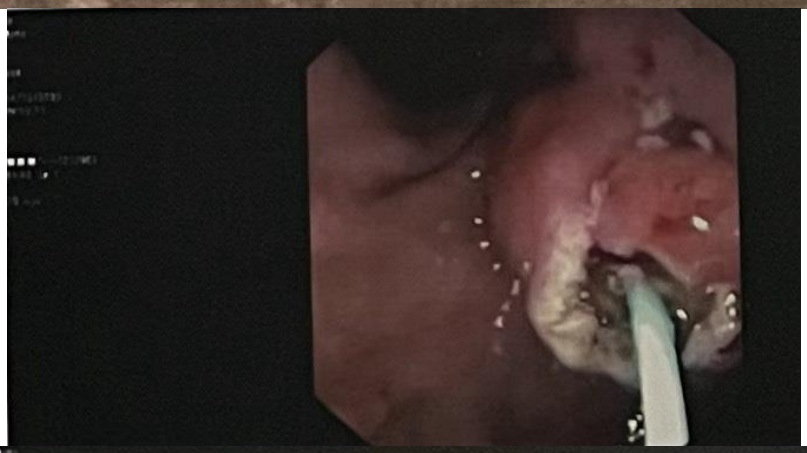

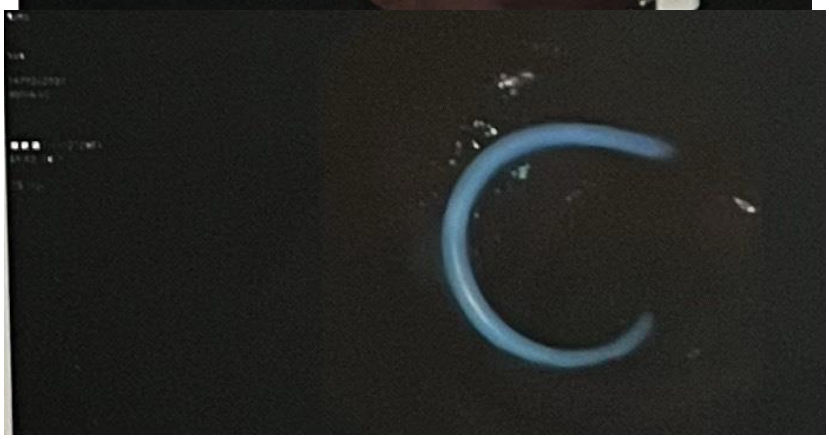

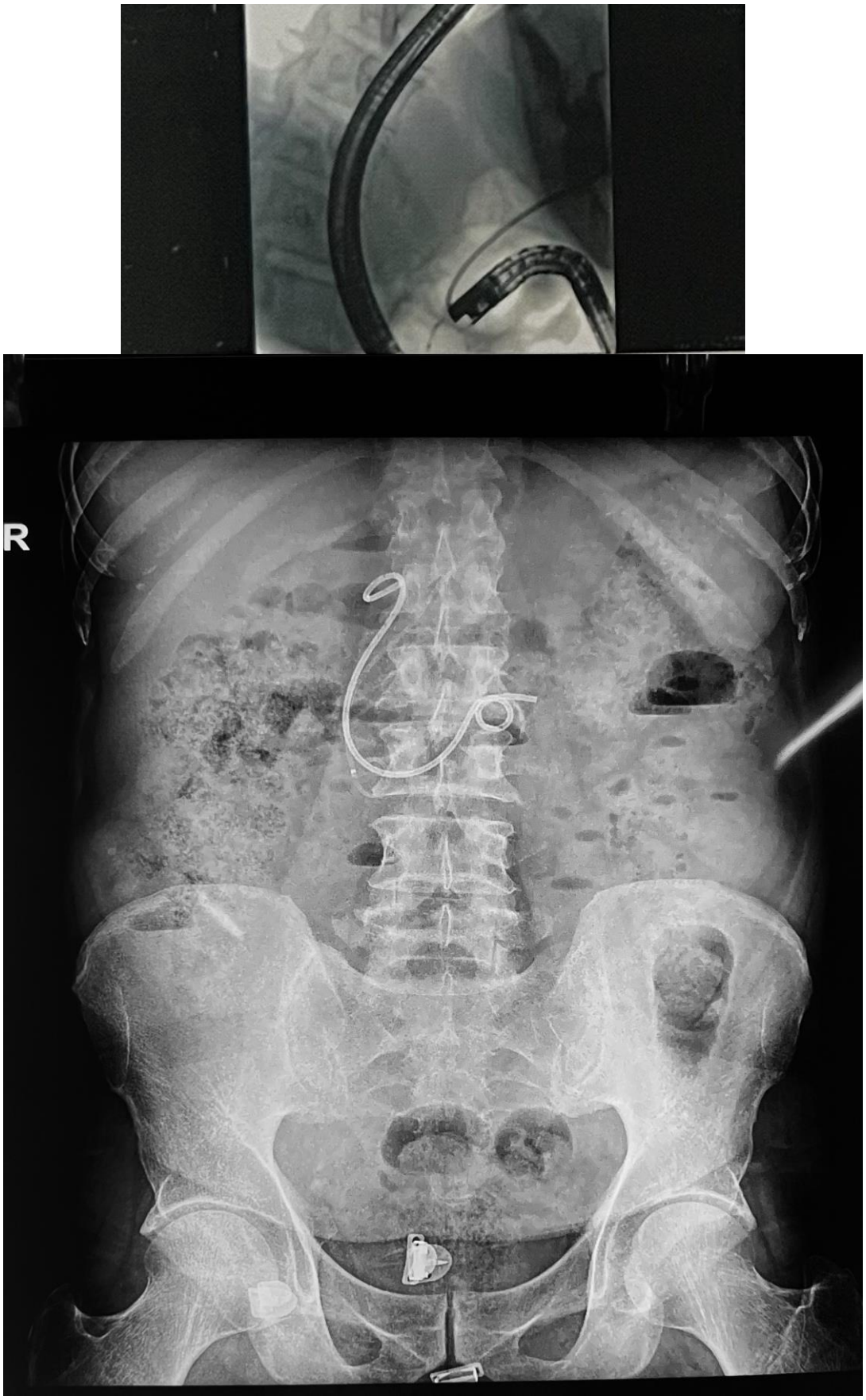

DISCUSSION

In 1982, Stolte et al. coined the term ‘‘groove pancreatitis’’ and described it as a special form of segmental pancreatitis characterized by fibrous scars of the anatomic space between the dorsocranial part of the head of the pancreas, the duodenum and the common bile duct. They reported the largest series of patients and reviewed in detail the histopathological features of 30 patients with groove pancreatitis in a series of 123 patients undergoing

pancreaticoduodenectomy for chronic pancreatitis [1]. In the 1970s, this entity had been described by Becker et al. as ‘‘segmentäre pankreatitis’’ or ‘‘Rinnenpankreatitis ’’ in the German literature [2, 8]. This disease is rare and its low detection can partly be attributed to lack of familiarity. Adsay and Zamboni published a review in which they tried to unify the concept of “groove pancreatitis”, “cysticdystrophy of 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 cystic dystrophy of the duodenal wall in the heterotopic pancreas as described by Potet and Duclert [10], Fléjou et al. [11] and Vullierme et al. [12]. This condition is characterized by the presence of cysts surrounded by inflammation and fibrosis in the duodenal wall, intermingled with pancreatic ducts and lobules.

Becker and Mischke classified groove pancreatitis into a pure form and a segmental form [2]. Groove pancreatitis in the pure form involves the groove only, with preservation of the pancreatic parenchyma and the main pancreatic ducts. The segmental form of groove pancreatitis involves both the groove and the head of the pancreas with stenosis of the pancreatic duct causing upstream dilatation. The prevalence of groove pancreatitis is difficult to assess. In three surgical series, this diagnosis was present in 2.7%, 19.5% and 24.4% of duodeno- pancreatectomy specimens obtained from patients with chronic pancreatitis [1, 2, 3]. Groove pancreatitis is often diagnosed in 40-

to 50-year-old alcoholic men [1, 2]. The patients usually present with postprandial abdominal pain and, subsequently, impaired motility, stenosis of the duodenum and postprandial vomiting often leading to significant weight loss. Jaundice is unusual, and the duration of the clinical symptoms ranges from a few weeks to more than one year.

Blood tests often show a slight elevation of serum pancreatic enzymes and occasionally of serum hepatic enzymes [4]. Tumor markers, carcinoembryonic antigens and carbohydrate antigen 19-9, are rarely elevated [3].Upper gastrointestinal endoscopy often reveals an inflamed and polypoid duodenal mucosa with stenosis of the duodenal lumen [5, 13]. Abdominal ultrasound usually shows a hypoechoic mass, and a CT scan often reveals a hypodense, poorly enhanced mass between the pancreatic head and a thickened duodenal wall [6]. Magnetic resonance (MR) imaging usually presents a hypointense mass on T1- weighed MR images, and iso- or slightly hyperintense on T2-weighed MR images, with delayed contrast enhancement after injection of the contrast material, reflecting its fibrous nature [14]. Arteriographic findings include a hypervascular mass in the groove area or vascular encasement. MR cholangio- pancreatography [14], EUS [15] and ERCP demonstrate smooth tubular stenosis of the common bile duct without abnormality of the main pancreatic duct, or rarely, with only slight irregularities. Cysts in the duodenal wall can be shown on T2-weighed MR images, CT scan or EUS. ERCP can demonstrate irregularity and dilatation of the Santorini duct and its branches, sometimes with intraductal stones. Although smooth tubular stenosis of the common bile duct is common in groove pancreatitis, genuine obstructive jaundice is found only rarely.The distinction between groove pancreatitis and pancreatic head adenocarcinoma is often difficult on imaging [3, 5, 6, 7]. Although the diagnosis is difficult, it is crucial to differentiate between groove pancreatitis and groove pancreatic adenocarcinoma, because the appropriate management of the twoconditions differs significantly. ERCP and EUS may be used to differentiate between the above two conditions. Smooth and regular stenosis of the common bile duct is seen in groove pancreatitis while irregular ductal stenosis with obstructive jaundice is seen in pancreatic adenocarcinoma. Obstructive jaundice is rarely found in groove pancreatitis [2]. Gabata et al. reported nine cases of histologically proven carcinoma of the head of the pancreas found in the groove area whose imaging findings resembled those of groove pancreatitis [7]. Plate-like masses within the groove region were seen in all cases. They were hypointense on T1-weighted images and slight hyperintense on T2- weighted MR images. On MRCP, stenosis of the intrapancreatic common bile duct was seen in all patients whereas stenosis of the main pancreatic duct was seen in only three cases. There was luminal narrowing of the duodenum in all patients and a duodenal mucosal biopsy demonstrated adeno- carcinoma in seven patients. Abdominal arteriography showed serrated encasement of the peripancreatic arteries in seven patients. Suehara et al. reported the detection of telomerase activity in the pancreatic juice preceding the emergence of clinical evidence of pancreatic cancer [16]. Telomerase activity in the pancreatic juice may be a sensitive marker for the early diagnosis of pancreatic ductal carcinoma before it is possible to detect tumors by various imaging modalities. Shudo et al. reviewed seventeen cases of groove pancreatitis reported in the Japanese literature [17]. The 17 patients (14 men and 3 women) had a median age of 51 years (range 37-69 years). Sixteen of the 17 patients were symptomatic. All patients but one were alcoholics. Duodenal stenosis was evident in 14 patients. Biliary stenosis, characterized by te smooth tapering of the common bile duct, was observed in six patients. Pre-operatively, almost all patients were diagnosed as having pancreatic head carcinoma.

Groove pancreatitis can be treated by conservative medical measures, but surgery is often required because of the severity of the clinical symptoms and in order to rule outmalignancy. The surgical treatment of choice is a pancreaticoduodenectomy using the Whipple procedure or a pylorus-preserving pancreaticoduodenectomy.

Gross examination of the surgical specimen usually shows an abundant whitish firm mass of the groove area stenosing the terminal common bile duct [1, 2, 3].

On microscopic examination, extensive fibrosis of the duodenal wall with Brunner gland hyperplasia in the submucosa may be observed. The pancreatic biopsy will show evidence of chronic pancreatitis with extensive fibrosis, acinar involution and intimal fibrosis of the pancreatic arterioles. The pancreatic duct is normal, and the Santorini duct is

sometimes dilated and can contain protein plugs, calcification and abscesses. Sometimes, there are cysts in the duodenal wall and pseudocysts which can contain protein-rich pancreatic juice [1, 2, 3]. The pathogenesis of groove pancreatitis is still unclear but seems to be caused by a disturbance of the pancreatic outflow in the Santorini duct through the minor papilla [1, 2, 3]. One of the main factors is probably chronic alcohol consumption which increases the viscosity of the pancreatic juice and leads to Brunner gland hyperplasia, causing occlusion or dysfunction of the minor papilla.

CONCLUSIONS

Groove pancreatitis often masquerades as pancreatic head carcinoma. This condition should be kept in mind when making the differential diagnosis between pancreatic masses and duodenal stenosis. In all cases of focal pancreatitis involving the head or uncinate process of the pancreas with involvement of the adjacent duodenum, the possibility of groove pancreatitis should be considered.

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