

CASE REPORT

Juxta-Ampullary Intraluminal Diverticulum and Acute Pancreatitis

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ABSTRACT

Context Acute pancreatitis is usually due to well-known causes, such as biliary lithiasis and alcohol consumption. Anatomic abnormalities may represent a less frequent but important etiological factor.

Case report The case of a 27 year old women complaining of acute pancreatitis associated with a large duodenal juxta-papillary diverticulum is presented.

Conclusions Anatomic causes of pancreatitis must be considered in the diagnosis of the etiology of acute pancreatitis.

INTRODUCTION

In discussions involving the etiology of an episode of acute pancreatitis, the possible

causes must be carefully investigated. Biliary diseases, such as lithiasis, are common and well-known causes in producing acute inflammation of the pancreas. However, other rare etiologies should sometimes be investigated in establishing the cause of acute pancreatitis. We report a case of a patient who experienced an acute attack of pancreatitis due to duodenal juxta-ampullary intraluminal diverticulum.

CASE REPORT

A 27 year old woman without previous history of trauma, alcohol addiction or drug intake presented with symptoms of epigastric pain, nausea and vomiting. The amylase level was 1,283 IU/L (reference value: less than 142 IU/L) and the lipase level was 2,980 IU/L (reference value: less than 190 IU/L). Serum lipids were within the reference ranges as



Figure 1. CT scan. Well-defined cyst on the ampulla of Vater.



Figure 2. CT scan. Filling of the cyst with orally administered contrast media.

were the rest of the other biochemical determinations.

A diagnosis of acute pancreatitis was made. A CT scan showed a well-defined pancreatic cystic mass localized in the head of the pancreas at the level of the ampulla of Vater (Figures 1 and 2). The diagnosis was confirmed by upper gastroduodenal endoscopy (Image not available).

The patient was scheduled for surgery. After a duodenotomy, a peri-ampullary intraluminal duodenal diverticulum was identified. It was opened and the papilla was identified. A complete diverticulectomy was done and completed with mucosa-to-mucosa anastomosis. Patient recovery was uneventful and he was disease-free at the end of 12 months.

DISCUSSION

The prevalence of intraduodenal peri-ampullary diverticulum evidenced by barium meal examination ranges from 0.16 to 6% and a rate of 23% has been reported at autopsy [1]. The prevalence of intraduodenal peri-ampullary diverticulum at upper gastroduodenal endoscopy ranges from 5 to 27%, average 17% [2].

The prevalence increases with age and is rare below the age of 40 years. About 70-75% of all duodenal diverticula are peri-ampullary [2]. A congenital factor may be involved as these diverticula may originate from localized defects in the duodenal wall musculature arising from abortive attempts to form a supernumerary pancreas [3].

There are case reports and anecdotal accounts implicating intraduodenal peri-ampullary diverticulum in the pathogenesis of acute and chronic pancreatitis. Psathakis *et al.* [3] found that five of 50 patients with intraduodenal peri-ampullary diverticula had characteristics of pancreatitis. However, a clear-cut relationship with pancreatitis remains tenuous as biliary lithiasis is more frequent in patients with intraduodenal peri-ampullary diverticulum. It is debatable whether the

pancreatitis is caused by the intraduodenal peri-ampullary diverticulum *per se* or by the associated biliary lithiasis. Distension of a diverticulum with inspissated food may cause compression of the pancreatic duct resulting in pancreatitis [4].

Ampullary dysfunction secondary to intraduodenal peri-ampullary diverticulum has been implicated in the pathogenesis of pancreatitis. A recent study has suggested that intraduodenal peri-ampullary diverticulum should be considered as a factor in the etiology of acute pancreatitis, and that its existence be excluded before a diagnosis of idiopathic pancreatitis is made [5]. Moreover Leivonen *et al.* [2] found that patients with intraduodenal peri-ampullary diverticulum developed pancreatitis twice as often as those without the condition.

Pancreatitis in the elderly is seen with increasing frequency and is associated with severe complications. Many of these patients may have intraduodenal peri-ampullary diverticulum. The proper evaluation of patients is difficult since much confusion exists regarding the interpretation of images [5].

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Keywords Ampulla of Vater; Diverticulum; Duodenum; Pancreatitis; Pancreatitis, Acute Necrotizing

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References

1. Kimura W, Nagai H, Kuroda A, Muto T. No significant correlation between histologic changes of the papilla of Vater and juxtapapillary diverticulum. Special reference to the pathogenesis of gallstones. *Scand J Gastroenterol* 1992; 27:951-6. [PMID 1455193]
 2. Leivonen MK, Halttunen JA, Kivilaakso EO. Duodenal diverticulum at endoscopic retrograde cholangiopancreatography, analysis of 123 patients. *Hepatogastroenterology* 1996; 43:961-6. [PMID 8884321]
 3. Psathakis D, Utschakowski A, Muller G, Broll R, Bruch HP. Clinical significance of duodenal diverticula. *J Am Coll Surg* 1994; 178:257-60. [PMID 8149017]
 4. Zoepf T, Zoepf DS, Arnold JC, Benz C, Riemann JF. The relationship between juxtapapillary duodenal diverticula and disorders of the biliopancreatic system: analysis of 350 patients. *Gastrointest Endosc* 2001; 54:56-61. [PMID 11427842]
 5. Sugiyama M, Atomi Y. Periapillary diverticula cause pancreatobiliary reflux. *Scand J Gastroenterol* 2001; 36:994-7. [PMID 11521993]
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