Natural course of asymptomatic pancreatic pseudocyst: a prospective study

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Aim: To study the natural course of asymptomatic pseudocysts of the pancreas. Methods: Thirty patients (age range 18-68 years, mean 44; 24 men) with asymptomatic pseudocysts of the pancreas were enrolled between December 2001 and December 2003, and were followed up every month. Those who developed symptoms due to pseudocyst (increasing pain or features of obstruction such as vomiting or jaundice) were subjected to an endoscopic or surgical drainage procedure. End point of the study was either spontaneous resolution of pseudocyst or drainage procedure. Results: Eighteen (60%) of 30 patients had resolution of the pseudocyst over an average duration of 5 months. Maximum diameter of less than 7.5 cm and cyst volume less than 250 mL were significantly more frequent in patients with resolution of pseudocyst than in those without [14/18 vs 2/12 (p=0.001) and 15/18 vs 2/12 (p=0.0003), respectively].

Presence of internal debris was associated with non-resolution [9/12 vs 2/18; p=0.001]. Conclusion: Pseudocysts with less than 7.5 cm diameter, volume less than 250 mL, and absence of internal debris were associated with spontaneous resolution within an average duration of 5 months. [Indian J Gastroenterol 2004;23:140-142]

Key words: Acute pancreatitis, chronic pancreatitis

Pancreatic pseudocyst is a non-epithelial lined cystic fluid collection that arises from disruption of a pancreatic duct following an episode of pancreatitis, with leakage of amylase-rich pancreatic juice into the peripancreatic tissues. The prevalence of pseudocysts following acute pancreatitis ranges from less than 5% to more than 70%. The traditional belief that pseudocysts larger than 6 cm and persisting for 6 weeks or longer require surgical intervention is currently not accepted, because more than 50% of pseudocysts have been shown to resolve spontaneously.

There are few longitudinal studies of pseudocysts. Many factors influence the natural course of pseudocysts of pancreas; however literature about these factors is conflicting.

We studied 30 patients prospectively to analyze the natural course of asymptomatic pancreatic pseudocysts.

Methods

Patients with asymptomatic pseudocyst of the pancreas were enrolled between December 2001 and December 2003. Pseudocyst of pancreas was defined as fluid collection persisting 6 weeks after an attack of acute pancreatitis. The diagnosis was based on spiral CT scan of the abdomen done at 6 weeks after the onset of pain. The patients underwent monthly outpatient follow up; ultrasonography of abdomen was done during each follow-up visit till regression of pseudocyst.

The parameters studied were: etiology of pancreatitis, number of pseudocysts, their maximum diameter, volume of pseudocyst, underlying chronic pancreatitis, and presence of internal debris. The diagnosis of chronic pancreatitis was based on presence of pancreatic calcification on abdominal radiograph, CT scan, or ultrasonography. Dilation of main pancreatic duct and pancreatic parenchymal atrophy were looked for using either ultrasonography or CT scan. Those who developed symptoms due to pseudocyst (increasing pain or features of obstruction such as vomiting, jaundice) underwent a drainage procedure (endoscopic or surgical). End point of the study was spontaneous regression of the pseudocyst or intervention.

Statistical analysis was performed using Fisher's exact test.

Results

A total of 30 patients (age range 18-68 years, mean 44; 24 men) with asymptomatic pseudocyst were enrolled in this study. During the same period, 7 patients presented with symptomatic pseudocysts; these patients underwent drainage procedures, and were not included in the study. Alcohol was the most common etiological factor (18 patients; 60%). Eighteen patients (Group I) had spontaneous regression of the pseudocyst over an average period of 5 (range 2-10) months and 12 needed therapeutic intervention (Group II).

Average median largest diameter of pseudocyst at initial diagnosis was 6.7 (range 3.5-13.4) cm in group I and 10 cm (range 6.3-15.5) in group II (Fig). Median volume at initial diagnosis was 150 mL (range 28-402) and 521 mL (range 160-927) in Groups I and II, respectively (Fig). Group I patients more often had cyst diameter
below 7.5 cm (14/18 [78%] versus 2/12 [17%], p<0.001) and cyst volume less than 250 mL (15/18 [83%] versus 2/12 [17%], p=0.0003), than Group II. Presence of internal debris was observed more often in cysts that had non-resolution than those that resolved spontaneously (9/12 [75%] versus 2/12 [11%], p=0.001). There was no difference between the two groups in etiology of pancreatitis and presence of underlying chronic pancreatitis (Table).

Two patients had two pseudocysts each. Of these, one had spontaneous regression of both the pseudocysts. In the other, who had underlying chronic pancreatitis, one pseudocyst ruptured and he was managed conservatively with octreotide. One patient had infected pseudocyst with underlying liver cirrhosis; he underwent endoscopic cystogastrostomy.

Of twelve patients who developed symptoms necessitating a drainage procedure, nine had increasing abdominal pain and three had vomiting; these occurred after an average follow-up period of 2 (range 0.5-9) months. Five patients, who had a demonstrable communication between the pancreatic duct and the pseudocyst at ERCP, underwent transpapillary drainage. One patient with infected pseudocyst underwent endoscopic cystogastrostomy. Another six patients, who had internal debris on radiological imaging, underwent surgical drainage. Post procedure, all patients had uneventful recovery.

Table: Comparison of different variables between patients with pseudocysts that had spontaneous resolution (Group I) and those that needed drainage (Group II)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group I (n=18)</th>
<th>Group II (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum diameter less than 7.5 cm</td>
<td>14 (78%)</td>
<td>2 (17%)*</td>
</tr>
<tr>
<td>Volume less than 250 mL</td>
<td>15 (83%)</td>
<td>2 (17%)*</td>
</tr>
<tr>
<td>Underlying chronic pancreatitis</td>
<td>5 (28%)</td>
<td>3 (25%)</td>
</tr>
<tr>
<td>Alcohol as an etiology</td>
<td>10 (63%)</td>
<td>6 (67%)</td>
</tr>
<tr>
<td>Presence of internal debris</td>
<td>2 (11%)</td>
<td>9 (75%)**</td>
</tr>
<tr>
<td>Location in head region</td>
<td>10 (56%)</td>
<td>8 (67%)</td>
</tr>
</tbody>
</table>

*p<0.001 and **<0.0003 as compared to Group I

Discussion

Our data show that 60% of patients with asymptomatic pseudocyst had spontaneous resolution. Other series have shown resolution rates between 9% and 31%. Most of these were from surgical units. Diameter of pseudocysts in the present study was comparable to that in the previous studies. However, in contrast to Bradley et al, who reported that resolution took less than six weeks, we found the median resolution time to be 5 months. Others too have observed a slow regression.

The size and volume of the pseudocyst are believed to influence its outcome. We found that cyst diameter less than 7.5 cm in size was associated with spontaneous regression. Yeo et al reported that 67% of patients with pseudocysts greater than 6 cm in diameter required surgical treatment. Volume of pseudocyst and the association of presence of internal debris as factors influencing spontaneous resolution have not been reported previously. The etiology of pancreatitis did not influence the natural course. Presence of pancreatic calcification has previously been suggested as a poor prognostic indicator for spontaneous resolution. However, in the present study, 5 of 8 patients with features of chronic pancreatitis had spontaneous resolution of the pseudocyst.

In conclusion, pseudocysts with less than 7.5 cm diameter, volume less than 250 mL, and absence of internal debris were associated with spontaneous resolution over an average duration of 5 months.

References


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