PANCREATIC PSEUDOCYSTS: Optimal therapeutic strategies

Jacques DEVIERE, MD, PhD
Erasme University Hospital
Brussels
1. Diagnosis.


3. Therapeutic planning.

4. How?

5. Follow-up / complications.
Cystic lesions of the pancreas

Classification

Pseudocyst
- 85%

Cystic tumors
- (n = 130)
  - mucinous
    - 49%
  - serous
    - 32%
  - IPMT
    - 11%
  - rare
    - 8%

~ 15%
Intracystic CEA level (cut-off 192 ng/ml) offers 79% accuracy for the diagnosis of mucinous cystic lesions of the pancreas.

Brugge et al, Gastroenterology 2004
Management of the pseudocyst is indicated

• For persistent and symptomatic cases

NB: When associated with acute pancreatitis, pseudocysts regress spontaneously in 50% of the cases
• Gastroenterologist (T), Surgeons (T), Radiologists (interventional) for I > T (or T if bleeding).
• MRI.
• Therapeutic EUS.
• Therapeutic ERCP/ESWL.
• Experience
Management of pseudocysts

- Endoscopic
- Percutaneous
- Surgical

For initial management
Case: A 42-year old female with AP and an EPF following percutaneous drainage of a PFC (no remaining PFC at the moment of treatment)

Biliary stent previous inserted because of CBD compression from the PFC

Fistula tract opacified
Catheter loaded with a guidewire is positioned in the paraduodenal virtual PFC, which is identified by EUS after contrast injection
EUS-guided transmural drainage of the virtual cavity and insertion of a double pig-tail stent
### Outcome after attempted endoscopic drainage of patient fluid collections

<table>
<thead>
<tr>
<th></th>
<th>AP</th>
<th>CP</th>
<th>PN</th>
<th>AP vs CP</th>
<th>AP vs CP</th>
<th>CP vs PN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Successful resolution</strong></td>
<td>23/31</td>
<td>59/64</td>
<td>31/43</td>
<td>P=0.02</td>
<td>NS</td>
<td>P=0.006</td>
</tr>
<tr>
<td></td>
<td>(74%)</td>
<td>(92%)</td>
<td>(72%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Complications</strong></td>
<td>6/31</td>
<td>11/64</td>
<td>16/43</td>
<td>NS</td>
<td>NS</td>
<td>P=0.02</td>
</tr>
<tr>
<td></td>
<td>(19%)</td>
<td>(17%)</td>
<td>(37%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recurrence</strong></td>
<td>2/23</td>
<td>7/59</td>
<td>9/31</td>
<td>NS</td>
<td>NS</td>
<td>P=0.047</td>
</tr>
<tr>
<td></td>
<td>(9%)</td>
<td>(12%)</td>
<td>(29%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hospital days</strong></td>
<td>9</td>
<td>3</td>
<td>20</td>
<td>P=0.0003</td>
<td>NS</td>
<td>P=0.0001</td>
</tr>
</tbody>
</table>

*AP, acute pseudocyst; CP, chronic pseudocyst; PN, pancreatic necrosis*

Baron et al, GIE 2002
## Characteristics and outcomes by classification of fluid collection (116 patients)

<table>
<thead>
<tr>
<th></th>
<th>Acute fluid collection (n=5)</th>
<th>Necrosis (n=8)</th>
<th>Acute pseudocyst (n=30)</th>
<th>Abscess (n=9)</th>
<th>Chronic pseudocyst (n=64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Procedures, median (IQR)</td>
<td>2 (1-2.5)</td>
<td>1 (1-1)</td>
<td>2 (1-2)</td>
<td>2 (2-2.5)</td>
<td>2 (1-2.5)</td>
<td>0.04</td>
</tr>
<tr>
<td>Hospital stay, median (IQR), d</td>
<td>27 (8.4-44)</td>
<td>18 (10-35)</td>
<td>9 (4-15.3)</td>
<td>26 (15.5-28.5)</td>
<td>5 (4-9)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Technical success, n (%)</td>
<td>5 (100)</td>
<td>4 (50)</td>
<td>29 (96.7)</td>
<td>9 (100)</td>
<td>61 (95.3)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Clinical success, n (%)</td>
<td>5 (100)</td>
<td>2 (25)</td>
<td>28 (93.8)</td>
<td>8 (88.9)</td>
<td>59 (92.2)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Recurrence, n (%)</td>
<td>1 (20)</td>
<td>1 (12.5)</td>
<td>4 (13.3)</td>
<td>1 (11.1)</td>
<td>12 (18.8)</td>
<td>0.94</td>
</tr>
<tr>
<td>Complications, n (%)</td>
<td>0</td>
<td>2 (25)</td>
<td>4 (13.3)</td>
<td>0</td>
<td>7 (10.9)</td>
<td>0.49</td>
</tr>
</tbody>
</table>

IQR, Interquartile range

*Hookey et al, GIE 2006 ; 63 : 635-43*
### Characteristics and outcomes by classification of fluid collection (116 patients)

<table>
<thead>
<tr>
<th></th>
<th>Acute fluid collection (n=5)</th>
<th>Necrosis (n=8)</th>
<th>Acute pseudocyst (n=30)</th>
<th>Abscess (n=9)</th>
<th>Chronic pseudocyst (n=64)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Procedures, median (IQR)</td>
<td>2 (1-2.5)</td>
<td>1 (1-1)</td>
<td>2 (1-2)</td>
<td>2 (2-2.5)</td>
<td>2 (1-2.5)</td>
<td>0.04</td>
</tr>
<tr>
<td>Hospital stay, median (IQR), d</td>
<td>27 (8.4-44)</td>
<td>18 (10-35)</td>
<td>9 (4-15.3)</td>
<td>26 (15.5-28.5)</td>
<td>5 (4-9)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Technical success, n (%)</td>
<td>5 (100)</td>
<td>4 (50)</td>
<td>29 (96.7)</td>
<td>9 (100)</td>
<td>61 (95.3)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Clinical success, n (%)</td>
<td>5 (100)</td>
<td>2 (25)</td>
<td>28 (93.8)</td>
<td>8 (88.9)</td>
<td>59 (92.2)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Recurrence, n (%)</td>
<td>1 (20)</td>
<td>1 (12.5)</td>
<td>4 (13.3)</td>
<td>1 (11.1)</td>
<td>12 (18.8)</td>
<td>0.94</td>
</tr>
<tr>
<td>Complications, n (%)</td>
<td>0</td>
<td>2 (25)</td>
<td>4 (13.3)</td>
<td>0</td>
<td>7 (10.9)</td>
<td>0.49</td>
</tr>
</tbody>
</table>

IQR, Interquartile range

*Hookey et al, GIE 2006; 63: 635-43*
1. Diagnosis.


3. Therapeutic planning.

4. How, where, who?

5. Follow-up / complications.
57 years old man

- Acute alcoholic pancreatitis.
- RX/CT/MRCP: chronic calcifying pancreatitis cephalic cyst (3 cm diameter).
- EUS + drainage of the cyst in 03/03; recurrence of the cyst; increasing size.
- 13/06/03: ESWL.

ERCP
How? EUS-guided versus Endoscopy guided when both are possible?

- Enlarge the indications to non clearly bulging collections
- Reduction of the risk of bleeding? Probably yes....
- New therapeutic scopes (EUS) offer almost the same possibilities as duodenoscopes
### Who?: International survey of ASGE members

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>US respondents (n=103)</th>
<th>International respondents (n=95)</th>
<th>Total respondents (n=198)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty type, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>101 (98)</td>
<td>80 (84)</td>
<td>181 (91)</td>
<td>0.0004</td>
</tr>
<tr>
<td>Surgery</td>
<td>2 (2)</td>
<td>15 (16)</td>
<td>17 (9)</td>
<td></td>
</tr>
<tr>
<td>Type of practice, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>42 (41)</td>
<td>20 (21)</td>
<td>62 (31)</td>
<td>0.002</td>
</tr>
<tr>
<td>Academic</td>
<td>61 (59)</td>
<td>75 (79)</td>
<td>136 (69)</td>
<td></td>
</tr>
<tr>
<td>Mean no. Years in practice</td>
<td>11.5</td>
<td>17.5</td>
<td>14.4</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Perform ERCP, no. (%)</td>
<td>102 (99)</td>
<td>94 (99)</td>
<td>196 (99)</td>
<td>0.9</td>
</tr>
<tr>
<td>EUS before transmural drainage</td>
<td>72 (70)</td>
<td>56 (59)</td>
<td>128 (65)</td>
<td>0.1</td>
</tr>
<tr>
<td>of pseudocysts, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUS-guided drainage for transmural entry, no. (%)</td>
<td>58 (56)</td>
<td>41 (43)</td>
<td>99 (50)</td>
<td>0.06</td>
</tr>
</tbody>
</table>
1. Diagnosis.


3. Therapeutic planning.

4. How?

5. Follow-up / complications.
Bleeding (2-4%)

- During the wall puncture
  - role of EUS?

- From a parietal pseudoaneurysm
  - often delayed
  - angiography for diagnosis and therapy
**Retroperitoneal perforation (2-4%)**

- Over the wire (which one?) technique
- EUS guided localization and opacification
- The collection MUST be drained
Infection

- Antibiotic prophylaxis
- Nasocystic catheters progressively removed for large cavities, especially when necrotic debris, combined perfusion and drainage
- Drainage limited to mature liquid collections in acute pancreatitis
- Associated percutaneous drainage for residual non-communicating cavities
- Surgical drainage for extensive infected necrosis in acute pancreatitis
- Prefer transmural drainage to limit the risk of recurrence, especially in case of MPD rupture
Assess pathways of secretion; Stent to be left in place?
Conclusion

• Diagnosis is essential
• Referral to multidisciplinary experienced teams should be the rule
• Many complications can be prevented by pre-therapeutic planning
• Endoscopic treatment plays the major role when drainage is indicated, except for pancreatic necrosis
Gastroenterology and Endotherapy
XXIVth European Workshop
June 19th-21th, 2006
Brussels

www.live-endoscopy.com