# High mortality following gastrostomy tube insertion in adult peritoneal dialysis patients: case report and literature review

## Table 1  Summary of case reports of patients on peritoneal dialysis and gastrostomy tube feeding by time elapsed between percutaneous endoscopic gastrostomy (PEG) and peritoneal dialysis (PD) catheter insertion.

<table>
<thead>
<tr>
<th>Case report</th>
<th>Age in years</th>
<th>Sex</th>
<th>Cause of end-stage renal disease</th>
<th>Time elapsed between PEG and PD catheter insertion</th>
<th>Complications</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lew et al., 2011</td>
<td>N/A</td>
<td>M</td>
<td>Amyloidosis</td>
<td>14 months</td>
<td>None</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>77</td>
<td>F</td>
<td>Vascular disease</td>
<td>N/A</td>
<td>Peritonitis × 2</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>69</td>
<td>M</td>
<td>Diabetes</td>
<td>4 years</td>
<td>None</td>
<td>Later death due to unrelated cause</td>
</tr>
</tbody>
</table>

F, female; M, male; N/A, data not available.

## Table 2  Summary of case reports of patients on peritoneal dialysis and gastrostomy tube feeding providing duration of withholding peritoneal dialysis (PD) after percutaneous endoscopic gastrostomy (PEG) insertion.

<table>
<thead>
<tr>
<th>Case report</th>
<th>Age in years</th>
<th>Sex</th>
<th>Cause of end-stage renal disease</th>
<th>Duration of withholding PD after PEG insertion</th>
<th>Complications (onset from time of insertion)</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dahlan et al., 2013 (present study)</td>
<td>79</td>
<td>F</td>
<td>Multiple myeloma</td>
<td>Switched to hemodialysis</td>
<td>Leak, polymicrobial peritonitis (8 days)</td>
<td>Death due to peritonitis</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>37</td>
<td>M</td>
<td>Obstructive uropathy</td>
<td>48 hours</td>
<td>Leak, Klebsiella peritonitis</td>
<td>Recovered</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>81</td>
<td>F</td>
<td>Diabetes mellitus</td>
<td>2 weeks</td>
<td>Peritonitis while PD on hold (10 days)</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>44</td>
<td>M</td>
<td>? AIDS</td>
<td>Switched to hemodialysis</td>
<td>None</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>66</td>
<td>F</td>
<td>Diabetes mellitus</td>
<td>None</td>
<td>Leak, fungal peritonitis (&lt; 1 day)</td>
<td>Death due to peritonitis</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>58</td>
<td>M</td>
<td>Diabetes mellitus</td>
<td>Switched to hemodialysis</td>
<td>Leak, polymicrobial peritonitis (7 days)</td>
<td>Death due to peritonitis</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>64</td>
<td>M</td>
<td>N/A</td>
<td>6 weeks</td>
<td>Fungal peritonitis (50 days)</td>
<td>Death due to peritonitis</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>86</td>
<td>M</td>
<td>N/A</td>
<td>Switched to hemodialysis</td>
<td>None</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Fein et al., 2001</td>
<td>69</td>
<td>M</td>
<td>N/A</td>
<td>Switched to hemodialysis</td>
<td>None</td>
<td>Later death due to unrelated cause</td>
</tr>
<tr>
<td>Goel et al., 1998</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Peritonitis</td>
<td>N/A</td>
</tr>
<tr>
<td>Goel et al., 1998</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>None</td>
<td>N/A</td>
</tr>
</tbody>
</table>

F, female; M, male; N/A, data not available.

A very limited number of case reports [1, 2] indicate that the insertion of peritoneal dialysis catheters in patients who have a preexistent and presumably well-healed PEG may be safe (Table 1), but that the insertion of gastrostomy tubes in patients receiving peritoneal dialysis is associated with major adverse outcomes including leaks and fatal or nonfatal peritonitis (Table 2) [2,3]. With our patient, withholding peritoneal dialysis, switching to hemodialysis, and use of prophylactic antimicrobials did not prevent the development of fatal peritonitis. We hypothesize that residual peritoneal fluid may have prevented effective healing of the PEG site with subsequent spillage of gastric contents into the peritoneal space. It is uncertain whether surgical as opposed to endoscopic placement or a longer healing time would have resulted in a better outcome. We conclude that gastrostomy tubes should not be placed in adult patients on peritoneal dialysis, because of a very high rate of fatal peritonitis.

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Competing interests: None

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References
1 Lew SQ, Gruia A, Hakki F. Adult peritoneal dialysis patient with tenckhoff and percutaneous endoscopic gastrostomy catheters. Perit Dial Int 2011; 31: 360

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