the pericatheter route are common routes of infections [2].

Here, we report on a patient with a gram-negative CAPD-related peritonitis presumably caused by an ascending infection due to fallopian tube capture of the CAPD catheter.

An 81-year-old woman with coronary heart disease and end-stage renal disease as a consequence of diabetes mellitus underwent an uncomplicated surgical insertion of a Tenckhoff catheter. After 2 weeks, CAPD was started without difficulty. Another 2 weeks later she experienced an acute pain in the middle of the abdomen. The effluents became cloudy and haemorrhagic, and she was admitted to our dialysis centre. On physical examination we saw a non-acutely ill-looking woman with a slightly diffuse tender abdomen. There were no signs of an exit-site infection. Abdominal radiographs showed the catheter positioned in the minor pelvis. The CAPD fluid had an elevated white cell count (WCC) of 4.1 × 10⁹/l. The gram stain was negative and the fluid was inoculated into a blood culture system. (Bactec®, BD diagnostics, NJ, USA). The peripheral WCC was 6.6 × 10⁹/l and serum C-reactive protein (CRP) was 192 mg/dl (normal <6 mg/dl). Intraperitoneal ceftriaxone (2 g/day) was administered, and CAPD was continued. Symptoms rapidly resolved and on day 3, the CRP had declined to 98 mg/dl and leucocyte count in the CAPD fluid to 0.4 × 10⁹/l. In the first CAPD fluid, cultured on admission, an Escherichia coli sensitive to ceftriaxone was identified. On day 5, the patient died unexpectedly of sudden cardiac death. The post-mortem examination of the peritoneal cavity showed a partial adhesion of the left fallopian tube to the CAPD catheter. The fimbriae were partially haemorrhagic and penetrated the catheter lumen. Histology demonstrated chronic inflammation of the fimbriae. Furthermore, no diverticulitis or organ perforations were seen.

To our best knowledge, this is the first case indicating that entrapment of a CAPD catheter into the fallopian tube and fimbriae is a possible cause of CAPD-related peritonitis. Fallopian tube wrapping is a rare cause of catheter obstruction [3,4]. However, our patient did not encounter in- or out-flow problems, probably because of residual well-functioning drainage holes.

CAPD peritonitis may occur by several routes. The connection sites, tunnel and exit-site are thought to be the most frequent infection routes [2]. The transluminal route, such as migration across the bowel wall, and the ascending route via the genitourinary tract seems most likely in the haematogenous route are less frequent. The ascending route, such as migration across the bowel wall, and the most frequent infection routes [2]. The transluminal connection sites, tunnel and exit-site are thought to be probably because of residual well-functioning drainage holes. Our patient did not encounter in- or out-flow problems, wrapping is a rare cause of catheter obstruction [3,4]. However, that entrapment of a CAPD catheter into the fallopian tube and fimbriae is a cause of CAPD-related peritonitis. Chronic inflammation of the fimbriae. Furthermore, no diverticulitis or organ perforations were seen.

This case demonstrates that although extremely rare, entrapment of a CAPD catheter into a fallopian tube and fimbriae is a possible cause of CAPD-related peritonitis. This underlines the different routes of infection in CAPD-related peritonitis.

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Unexpected rate of severe leucopenia with the association of mycophenolate mofetil and valganciclovir in kidney transplant recipients

Sir,

Valganciclovir (VGC) is now considered a pre-emptive [1] and curative [2,3] treatment of CMV infection in renal transplant recipients. Leucopenia has been reported as a side effect of VGC therapy at a frequency of 10–13% [1,4] but incidence of severe leucopenia was low (4.9%) with no leucopenia-associated sepsis reported [1]. The percentage of patients discontinuing treatment because of leuco or neutropenia was not different compared with patients treated with ganciclovir (2 vs 2.4%). Interestingly, when leucopenia occurs, physicians are more likely to taper mycophenolate mofetil (MMF) rather than VGC dose. Nevertheless, as has been clearly proven, any MMF dose reduction increases the risk of acute rejection and graft lost [5].

We present here our experience in using VGC for prevention therapy in 16 kidney transplant recipients. The CMV antibody donor/recipient pattern was D+/R− (n = 7), D+/R+ (n = 8), D−/R+ (n = 1). Immunosuppressive protocol consisted of anti-interleukin-2 receptor antibodies, prednisone, MMF and cyclosporine. Moreover, all patients were treated with trimethoprim-sulfamethoxazole (TMP), 400 mg per day. Renal function of patients, MMF and VGC doses are summarized in Table 1.

Six patients (37.5%) developed severe leucopenia in the third month of transplantation and met the criteria of agranulocytosis (neutrophil count <500/mm³). Three of them experienced neutropenia-associated sepsis (one diarrhoea secondary to campylobacter jejuni infection, one fever

Table 1. Creatinine clearance, drugs doses and mycophenolate mofetil monitoring of the six patients with neutropenia

<table>
<thead>
<tr>
<th>Patient no.</th>
<th>Creatinine clearance (ml/min/1.73 m²)</th>
<th>VGC dose (mg/day)</th>
<th>MMF dose (mg/day)</th>
<th>MMF area under concentration curve (mg h/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>42.8</td>
<td>450</td>
<td>2500</td>
<td>59.9</td>
</tr>
<tr>
<td>2</td>
<td>73.4</td>
<td>900</td>
<td>1000</td>
<td>78.8</td>
</tr>
<tr>
<td>3</td>
<td>45.5</td>
<td>450</td>
<td>4000</td>
<td>19.78</td>
</tr>
<tr>
<td>4</td>
<td>42.8</td>
<td>450</td>
<td>2000</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>55.6</td>
<td>450</td>
<td>2000</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>21.8</td>
<td>450/48 h</td>
<td>1000</td>
<td>45.88</td>
</tr>
</tbody>
</table>
with angina, and one pyelonephritis). In patients 4–6, the area under the concentration–time curve of mycophenolic acid was performed at the date of leucopenia. Only one patient was over-exposed (78.8 mg h/ml). CMV-pp65 antigenaemia and CMV IgM detection were negative. Bone marrow aspirate was performed in three patients, showing non-specific bone marrow hypoplasia. In all patients, VGC and TMP were immediately stopped. Interestingly, when this treatment modification was made early after neutropenia was discovered, it was effective in one patient without modifying his MMF dose of 2.5 g/day. For the rest of the patients, MMF was tapered or temporarily stopped. Patients with infection received antibiotics and GmCSF. All six patients recovered from 2 to 19 days without any sequel. VGC was not reintroduced, and no CMV infection was noted after discontinuation of treatment. MMF was reintroduced in all patients without relapse of leucopenia.

Leucopenia has rarely been described as a complication of VGC therapy and is usually considered a benign condition. Our experience is different with the occurrence of agranulocytosis in 37.5% of the patients treated with VGC and a high frequency (3/6) of associated sepsis. The association of VGC with two other drugs (MMF and TMP), which can also induce neutropenia, may have enhanced the toxic effect of VGC and may explain the high frequency of severe leucopenia observed here.

In our experience, VGC should be withdrawn when leucopenia occurs, and this can be effective as the only treatment modification. If not, MMF can be reduced and then stopped, but only temporarily, because of the risk of acute rejection. Monitoring of the area under the concentration–time curve of MMF in this condition was not very helpful, with only one patient over-exposed. However, some pharmacokinetics interactions between VGC and MMF have been suggested [6] and VGC drug monitoring could be a way to better use these two drugs in association and to avoid severe leucopenia.

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