Patient Viral Peritonitis in a Continuous Ambulatory Peritoneal Dialysis

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Dear Sir,

Peritonitis in continuous ambulatory peritoneal dialysis (CAPD) is usually caused by bacteria or fungi, but in a number of episodes, no microbial cause can be detected. Recently we have seen a CAPD patient with peritonitis due to an enterovirus.

Case Report

A 42-year-old female with diabetic nephropathy started CAPD in May 1985, after her kidney graft had failed due to chronic rejection. During the next year she had 3 peritonitis episodes caused by *Staphylococcus epidermidis*, *Streptococcus mitis* and *Neisseria pharyngis*, the last time in combination with a streptococcus species. One week after her 11-year-old son had suffered from high fever and headaches for a few days, the patient experienced abdominal pain and noticed a cloudy dialysate (day 0). Treatment was started with cephadrine, but both the abdominal pain and the turbidity of the dialysis fluid remained present for the next 5 days. However, dialysate cultures showed no growth. On day 3, light-microscopic examination was done of the sediment of the dialysis fluid (Giemsa stain). Because atypical bodies were seen in the

leucocytes present in the dialysis fluid, it was cultured for viruses as well (Laboratory of Clinical Virology, Head Dr. K. W. Slaterus). To our surprise, an enterovirus was isolated from the dialysate on day 10. This was later shown to be Echovirus type 11 (Dr. J.G. Kapsenberg, State Institute for Health Organisation, Bilthoven). Cephadrine was discontinued. The pain and cloudiness of the dialysis fluid had gradually disappeared and were absent on day 9.

To exclude artificial contamination, also dialysate samples from the previous and following days were cultured for viruses. Faecal specimens were cultured as well. The results of the dialysate white cell counts and the cultures are mentioned in the table. Serological investigations showed that complement-fixing antibodies against enterovirus were $< 1/8$ before the peritonitis episode occurred (i.e. 2.5 months earlier), $1/64$ on day 13 and $1/16$ on day 43.

In retrospect, the light-microscopic picture of the leucocytes was not typical for an infection with Echovirus and might have been a coincidence.

Discussion

Though viral peritonitis has not been reported before [1], we believe that this CAPD patient had a viral peritonitis.

Table I. Dialysate white cell counts (WBC) and culture results

tis for the following reasons: (1) the virus was isolated repeatedly from the dialysis fluids and the faeces and was no longer cultured after the recovery from clinical peritonitis; (2) a significant rise in enterovirus antibody titre followed by a decrease was present; (3) antibiotic treatment did not produce any clinical improvement, and (4) in our hospital, bacteria or fungi are at present isolated in more than 95% of all peritonitis episodes in CAPD patients [2], indicating a high sensitivity.

In conclusion, the possibility of a viral cause should be considered in CAPD peritonitis when cultures remain negative and no response is obtained with antibiotic treatment.

References

Vas, S.I.: Peritonitis; in Nolph, Peritoneal dialysis; 2nd. ed., pp. 403–439 (Nijhoff, Boston 1985).
Boeschoten, E.W.; Rietra, P.J.G.M.; Krediet, R.T.; Visser, M.J.; Arisz, L.: CAPD: a prospective randomized trial of oral versus intraperitoneal treatment with cephadrine. *J. antimicrob. Chemother.* 76:789–797(1985).