These uncovered charges can activate the Hageman factor and consequently contribute to bradykinin generation. We can imagine a spectrum of bradykinin synthesis in this context ranging from mild non-specific symptoms to anaphylactoid reactions. Our patients were probably in the middle of this spectrum. Moreover, bradykinin is thought to be a mediator of gut sensitivity [5]. Interindividual differences in susceptibility to hypersensitivity reaction in patients haemodialysed with an AN69 membrane, while on treatment with an ACEI can be partly explained by different degrees of enzyme activity. However, bradykinin generation was not measured in our cases, and we cannot prove their exact role in the symptoms presented by our two cases.

In conclusion, the safety of surface-treated AN69 membrane used concomitantly with ACEI should be more formally evaluated. This may help to recognize and describe the spectrum of hypersensitivity reactions in this context. We recommend changing the dialyser when facing a new or suspect intestinal manifestation in patients dialysed with a surface-treated AN69 membrane and receiving ACEI, if any doubt is present.

Conflict of interest statement. None declared.

Familial Mediterranean fever triggered by renal transplantation

Sir,

Hereditary periodic fever syndromes are a group of non-autoimmune diseases characterized by episodic fever, and include familial Mediterranean fever (FMF), hyper-immunoglobulin-D syndrome, tumour necrosis factor receptor-1-associated periodic syndrome and Muckle–Wells syndrome [1,2]. Of these, FMF is the most common and best known [1]. FMF mainly affects patients of Mediterranean descent, namely Turks, Jews, Armenians and Arabs [3]. However, the disease has become more widespread because of migration [3]. The diagnosis of FMF is still based on clinical criteria established and confirmed by several studies [2]. A positive family history, recurrent fever episodes and a favourable response to colchicine are the mainstay of diagnosis [2]. Since the discovery of the FMF gene, almost 30 new mutations have been detected [2,3]. However, the molecular basis of the disease is still obscure [3]. One of the major complications of FMF is systemic amyloidosis, which can result in end-stage renal disease, necessitating organ replacement [4]. The association of FMF with certain forms of vasculitis mainly Henoch–Schoenlein purpura, polyarteritis nodosa and Behcet’s disease (BD) have been reported [2,5]. We describe here an unusual case of FMF that presented early after renal transplantation in a patient with end-stage lupus nephritis. To our knowledge, such a clinical scenario has not been previously reported.

A 35-year-old woman who had suffered from lupus nephritis for 6 years and end-stage renal disease for 1 year received a kidney transplantation. The post-transplantation immunosuppressive regimen included cyclosporin (250 mg/day), azathioprine (74 mg/day) and prednisolone (tapering doses). The procedure was uncomplicated and renal function was stable; however, the patient developed a fever of 39°C 1 month after transplantation. The patient’s general condition was good, and physical examination revealed no remarkable findings. Blood and urine culture, Wright agglutination and Widal tests were all negative. Serologies of cytomegalovirus, herpes simplex virus, Epstein–Barr virus, human immunodeficiency virus and hepatitis B and C viruses were also negative. The fever was persistent (>2 weeks), and the diagnosis of fever of unknown origin (FUO) was made. At the same time, the patient’s younger sister was diagnosed with FMF because of recent episodic fever and abdominal pain. Upon further questioning, the patient revealed that her older sister was also suffering from a similar condition and had been receiving long-term colchicine. With the presumptive diagnosis of FMF, colchicine (1 mg/day) was started. Her fever ceased within <24 h. After 3 years of renal transplantation and on a daily dose of colchicine, the patient is doing well, and no flare-up of systemic lupus erythematosus (SLE) or FMF has occurred. Her serum creatinine level is normal at around 1.2 mg/dl.

The FMF is a well-known cause of episodic FUO. It is said that serositis is almost always present in FMF [1]. In the present case, the persistent fever (>2 weeks) and absence of serositis were unusual findings. However, the positive family history and rapid cessation of fever with colchicine favoured FMF as the most likely diagnosis. Renal failure necessitating replacement therapy is a major complication of FMF [2]. However, FMF triggered by kidney transplantation is a very unusual scenario. Surprisingly, in the present case, the post-replacement FMF was preceded by SLE. Whether vasculitis is an integral feature of FMF or is secondary to enhanced inflammatory response in this condition still remains to be clarified [2]. Braun et al. [6] reported a patient with acute systemic vasculitis superimposed on FMF. Schwartz et al. [5] found 50 patients with features of BD among 4000 known FMF patients.

We recommend that clinicians should consider FMF in the differential diagnosis of fever after renal transplantation. Association of FMF with vasculitis such as SLE should not be overlooked as well. Although, vasculitis has not yet been included among the criteria for diagnosis of FMF, we would like to speculate that a past history of vasculitis may be a positive clue for the diagnosis of FMF.

Conflict of interest statement. None declared.
Sir,

Dialysate leakage frequently leads to technical failure in patients receiving peritoneal dialysis (PD) therapy. The leakage usually comes from the exit site, and manifests as hydrothorax, swelling of external genitals and subcutaneous oedema [1]. Dialysate leakage from the umbilicus, however, has not been reported. Omphalitis is seen frequently in children, while recurrent omphalitis in adults is unusual [2]. We reported a PD patient with recurrent omphalitis who was admitted due to a dialysate leakage through the umbilicus.

A 50-year-old female who had received PD therapy for more than 5 years came to our clinic when she found her umbilicus was immersed in clear fluid in the morning. In the previous 2 months, she had had three episodes of omphalitis and was still under antibiotic treatment. All the inflammatory symptoms and signs had improved quickly after 1 week of oral antibiotics (1st generation cephalosporin) treatment. The last episode had occurred 2 weeks previously, manifested with purulent discharge, which had not been found in previous episodes. First generation cephalosporin and local fusidate were prescribed and then shifted to gentamycin ointment after the isolation of *Pseudomonas aeruginosa* from the umbilical pus. Physical examination revealed redness and swelling around the umbilicus, which was coated with pus. A small amount of clear fluid was found to be flowing from the umbilicus during the examination. Biochemical study of the fluid showed glucose level up to 785 mg/dl and sodium level at 150 mEq/l. Under the impression of dialysate leakage through the inflammatory umbilicus, PD was stopped and she was admitted for temporary HD therapy and infection control. Unfortunately, fever and diffuse abdominal pain appeared on the night of admission. The body temperature went up to 38.5°C. The residual PD dialysate that drained out the following morning became cloudy. The cell count of dialysate was 432/mm3 with a predominance of polymorphonuclear leucocytes. All of these findings confirmed the diagnosis of peritonitis. Computer tomography (CT) study revealed soft tissue infiltration, with a focal but tiny area of low density over the umbilicus without any urachal remnant.

Under the impression of omphalitis with local abscess formation, the total umbilicus was surgically removed on day 4 of hospitalization, and a fistula was found between the umbilicus and the peritoneal cavity. Fever subsided 2 days after the surgical intervention, and the dialysate soon became clear. PD was started again 4 days later, and the inflow volume was increased gradually to the original level within 2 days, without further leakage. After discharge, the patient completed the treatment course of PD peritonitis through the intraperitoneal route. She remained on PD therapy without any significant sequela after a follow-up of 4 months.

This is the first report on dialysate leakage through the umbilicus, in a CAPD patient with repeated and prolonged omphalitis, which is unusual in adults. Once it occurs in PD patients, it makes management more complicated. The prolonged and repeated courses of omphalitis in this patient led to the umbilical leakage of dialysate. Through this communication, the bacteria spread from the inflammatory umbilicus into the peritoneal cavity, causing peritonitis. To avoid a discontinuance of PD therapy, surgical treatment should be performed promptly in PD patients with omphalitis, before any invasion into the peritoneal cavity. Once the evidence suggests the involvement of peritoneum, surgical intervention should be performed as soon as possible. In umbilical herniotomy, it was reported that only 1–3 days are needed to restart the PD procedure [3]. We restarted the PD procedure 4 days after the surgery, without any additional dialysate leakage. Therefore, these patients, even after receiving a peritoneum-related operation, can restart the PD therapy very quickly.

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