mately five times greater, compared to patients with normal renal function from 2.3h to 13.5h and even 22h.[4] Cefepime is dialyzable; up to 70% of a given dose can be removed during a 3-hour haemodialysis session.[3] In our case, we have pre-dialysis cefepime levels (after 24 hours of drug withdrawal), but we have no post-dialysis cefepime levels, to assess the effectiveness of haemodialysis in its elimination, although the patient showed significant clinical improvement after the first haemodialysis session. With three daily haemodialysis sessions of 3 hours, antibiotic levels were undetectable prior to the fourth session of haemodialysis.

In conclusion, although the prognosis of patients with cefepime-induced neurotoxicity varies in literature, the close monitoring of renal function in patients treated with cefepime, early suspicion of associated neurological symptoms and urgent haemodialysis may be the keys to a more favourable prognosis for patients with cefepime-induced encephalopathy.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the contents of this article.

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Genital leakage associated with patent peritoneovaginal duct and polycystic kidney and liver disease in patients on peritoneal dialysis

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To the Editor:

The genital oedema is a common complication in peritoneal dialysis that occurs due to the passing of dialysis fluid outside the abdominal cavity through inguinal hernias, persistent peritoneovaginal duct, lower abdominal wall defects, etc. Its association with persistent patent peritoneovaginal duct is widely described in literature[1] but its relationship with polycystic kidney disease is not very well known. Below, we describe two cases of patients with chronic kidney disease (CKD) secondary to adult polycystic kidney and liver disease. After initiation of peritoneal dialysis, they developed fluid leakage to genitals, secondary to persistence of said patent duct.

CASE REPORT 1

A 76-year-old male with stage 4 CKD secondary to polycystic kidney and liver disease with a long history of high blood pressure, type 2 diabetes mellitus, hyperuricaemia, dyslipidaemia and chronic obstructive pulmonary disease. Given the situation of advanced CKD and after explaining the different dialysis techniques, a straight, non-self-locating 1 cuff peritoneal catheter was inserted by open surgery without immediate incidents, functioning well during the training period. A month after catheter placement, home continuous ambulatory peritoneal dialysis (CAPD) was started with a prescription of 3 exchanges of 2 litres of 1.5% dextrose, initially with neutral or negative balances of 200-300ml. After 4 days of treatment at home, he came to the Peritoneal Dialysis Unit complaining of genital oedema without other associated symptoms. Having performed a testicular ultrasound, pathology was ruled out at this level. On suspicion of leakage, CT peritoneography was carried out, after the administration of 100ml of hypoosmolar iodinated contrast (Optiray® 300mg/ml) by catheter, confirming the passage of peritoneal contrast material through the spermatic cord to the scrotum due to the presence of a non-dilated patent peritoneovaginal duct (Figure 1). Similarly, we observed the existence of a left ipsilateral indirect inguinal hernia with a sac up to 58mm in diameter (Figure 2). Given these findings, peritoneal rest is decided and surgery is indicated for correction of inguinal hernia and closure of the peritoneovaginal duct. With these measures, and after restarting low-volume peritoneal dialysis, no leakage was observed a month after reintervention.

CASE REPORT 2

A 45-year-old male with stage 5 CKD secondary to polycystic kidney liver disease with a history of high blood pressure and hyperuricaemia. Given the progressive deterioration of renal function requiring renal replacement therapy, and after explaining the different techniques, a straight, non-self-locating, 1 cuff

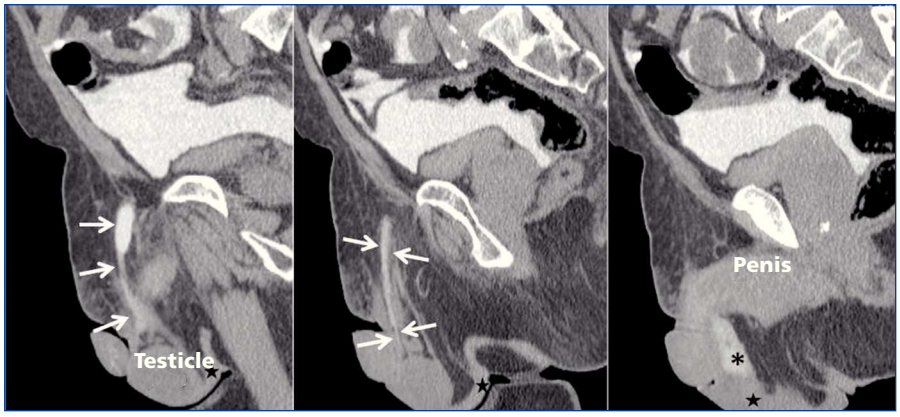

Figure 1. CT peritoneography.
Consecutive paramedian sagittal images showing the peritoneovaginal duct, demonstrating its patency (white arrows). Its size is normal, but its proximal portion is slightly dilated, presenting greater contrast. There is also scrotal oedema (black star) and a small contrasted intrascrotal collection (black asterisk). Also note the significant contrasted intraperitoneal filling in dependent recesses of the pelvis.

peritoneal catheter is inserted. A month after starting CAPD at home with 4 exchanges of 2 litres of 1.36% glucose, the patient came to the Peritoneal Dialysis Unit complaining of inguinoscrotal oedema lasting 48 hours. After discarding orchiepididymitis, CT peritoneography was performed as in the previous case, confirming the passage of contrast to the testicles through a patent peritoneovaginal duct. Peritoneal rest was decided and the patient was transferred to haemodialysis. A month later, surgical closure of the peritoneovaginal duct was carried out and CAPD restarted in June 2009 without incident or recurrence of the leakage.

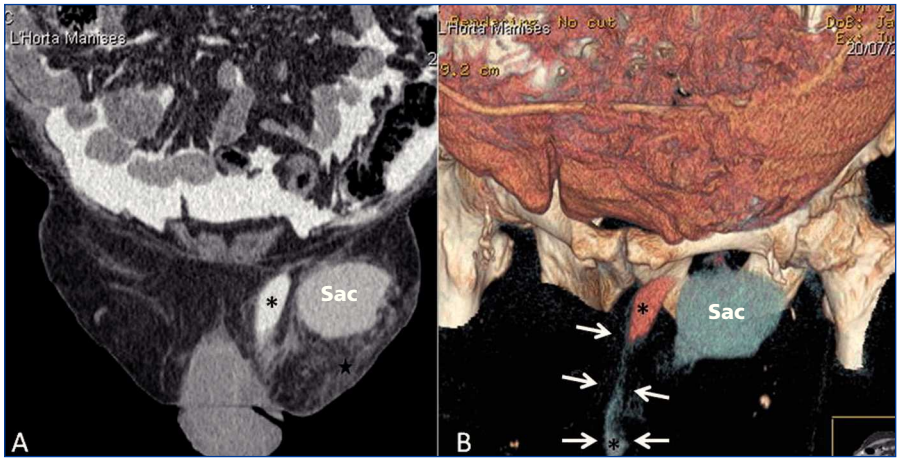

Figure 2. CT peritoneography.
Standard coronal image (A) and oblique coronal image with volumetric reconstruction (B) showing patent peritoneovaginal duct (black asterisks and white arrows) and the lateral inguinal hernia sac at the same contrast filling (indirect inguinal hernia). In the volumetric reconstruction, the different colour of the contrast along the duct and in the inguinal hernia sac is due to the different contrast concentration achieved (higher density in the proximal portion of the duct, a reddish-brown colour and lower-density in the distal portion and inside the greenish hernia sac). Note also the significant associated soft tissue oedema (black star).

DISCUSSION

Patients on peritoneal dialysis have an increased risk of both incisional and inguinal hernias. This is especially true in certain risk populations (multiparous women, the elderly and children).[2,3] These hernias induce peritoneal fluid leakage, with one of the most common clinical manifestations being scrotal oedema.[4,5] There are, however, other causes of peritoneal fluid leakage which produce scrotal oedema but which must also be taken into account, such as patent peritoneovaginal duct. The peritoneovaginal duct is patent in 90% of infants at birth, but it closes in the first year of life, and as such, only about 15% of adult men have a patent duct, which is generally asymptomatic. In children, the incidence of indirect inguinal hernia due to a patent peritoneovaginal duct seems to be higher. In fact, peritoneography has been suggested during the insertion of the catheter for the closure of the deep inguinal ring, in the event of peritoneovaginal duct persistence.[6] Although not widely reported in literature, it seems to be that, as in the cases we reported, autosomal dominant polycystic kidney disease is associated with a greater presence of patent peritoneovaginal duct. It is for this reason that, with the appearance of scrotal oedema in patients on peritoneal dialysis for adult polycystic kidney liver disease, we must suspect and confirm the presence of patent peritoneovaginal duct by CT peritoneography or scintography. Also, in this patient population, it would be advisable to consider prior peritoneography in order that, if there is patent peritoneovaginal duct, it will be closed directly, thereby preventing leakage and its po-

tential closure in a second operation as well as the carrying out of radiating tests for its diagnosis.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the contents of this article.

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Neurosyphilis in a renal transplant patient

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To the Editor

Syphilis is a systemic infectious disease caused by the organism *Treponema pallidum*. It is acquired by sexual contact, congenitally through the placenta, by contaminated human blood transfusion and by accidental direct innoculation.[1] It begins when *Treponema pallidum* invades the cerebrospinal fluid (CSF).[2,3]

Its forms of presentation are classified as follows: early syphilis, late syphilis, neurosyphilis and congenital syphilis.[4,5]

Central nervous system involvement occurs in 5%-10% of those infected and in up to a third of cases progressing to advanced stages developing neurosyphilis.[6]

Currently, atypical presentation forms are prevalent with regard to the classical forms of progressive general paralysis and tabes dorsalis.[7] The treatment is based on the administration of penicillin G sodium and, as a second option, cephalosporins.

We report the case of a patient who had renal transplant for 13 years and who came to the emergency Department with fever in the context of skin lesions and neurological symptoms.

CASE STUDY

A 39-year-old male with a third renal transplant, several episodes of pneumonia and hepatitis C virus carrier. He went on an exotic trip for two months, having at-risk sexual relations, without protection. He came in with low back pain and fever. His medical history showed fever, itching, whitish penile discharge, maculopapular rash, paraesthesia in legs and double vision.

On examination: blood pressure: 177/106mmHg, temperature: 36.8°C, heart rate 120bpm. Maculopapular rash with palmoplantar keratoderma (Figure 1), with central predominance. Left sixth cranial nerve palsy (Figure 2), absence of deep tendon reflexes, decreased

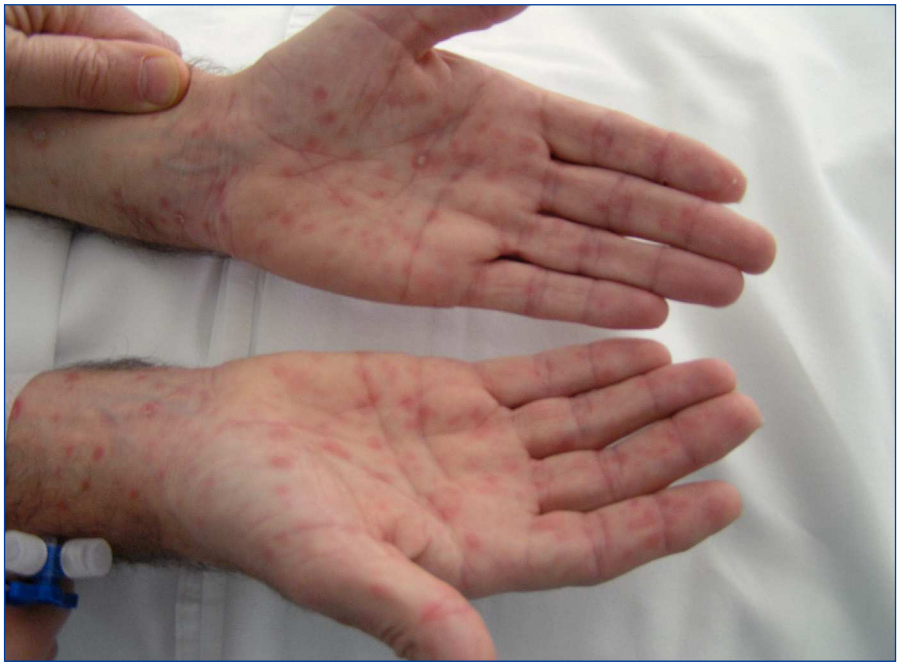

Figure 1. Maculopapular rash.
Skin lesions of neurosyphilis.